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ABSTRACTS

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ELEVATING GYNECOLOGIC SURGERY WORLDWIDE

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Abstracts that were submitted for consideration for presentation and received as of May 1, 2023, are published as submitted and are provided to the members of the AAGL for use at the 52nd AAGL Global Congress on Minimally Invasive Gynecology. The abstracts will be presented in Oral, Video, and Virtual Poster Sessions. Published by: Elsevier on behalf of AAGL.

AAGL, Elevating Gynecologic Surgery Worldwide
6757 Katella Avenue, Cypress, CA 90630-5105
Telephone: (714) 503-6200, (800) 554-AAGL (2245)
E-mail: generalmail@aagl.org • Website: www.aagl.org

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AAGL ELEVATING GYNECOLOGIC SURGERY WORLDWIDE

ORAL PRESENTATIONS

TUESDAY, NOVEMBER 7, 2023
ORAL SESSION 01 - New Instrumentation / Research
(11:30 AM — 12:30 PM), 11:33 AM

Category: New Instrumentation or Technology

SubCategory: Research

Performance Evaluation of Urinary and Bladder Recognition AI Models

Takenaka S,[1,] Matsuzaki H,[2] Koike R,[3] Hirose Y,[3] Takeshita N,[2] Nakabayashi M,[3] Tanabe H[4]. [1]Gynecology, National Cancer Center Hospital East Japan, Kashiwa, Japan; [2]Jmees Co., Ltd., Kashiwa, Japan; [3]Gynecology and Obstetrics, Showa University, Tokyo, Japan; [4]National Cancer Center Hospital East Japan, Kashiwa, Japan*
*Corresponding author.

Study Objective: We developed an AI model for intraoperative recognition of ureter and bladder using 13934 and 4940 images respectively, from 409 and 220 hysterectomy cases across 41 and 38 surgical facilities. The study aimed to evaluate the model's impact on physicians' organ recognition ability.
Design: This is a retrospective cohort study.
Setting: One hundred and fifty videos with and without the ureter and bladder were prepared, respectively. Factors affecting recognition performance, such as Douglas fossa adhesion, giant myoma, and history of cesarean section, were included in real clinical proportions.
Patients or Participants: Cohorts were created with 4 Certified surgeons (group A), Attendings (group B), Fellows with ≧10 hysterectomy cases of experience (group C), and Fellows with <10 hysterectomy cases of experience (group D), respectively.
Interventions: First, they were tested to guess the presence or absence of ureter and bladder and the location of those organs in the videos without AI-support. Next, the same test was conducted using both videos without AI-support and with AI-support superimposed on the model inference results.
Measurements and Main Results: We tested if AI-support improves physician's organ recognition accuracy and if surgical skill and experience affect results. Results for all physicians with/without AI-support: ureter sensitivity 45.3% and 58.1%(p<0.01), bladder sensitivity 54.2% and 70.0%(p<0.01); ureter specificity 86.1% and 89.8%, bladder specificity 91.6% and 92.0%. AI-support improved sensitivity without compromising specificity. Sensitivity improvement (%) in groups A, B, C, D for ureter: 3.5, 15.9, 11.8, 27.3; for bladder: 8.9, 10.6, 16.8, 26.8. AI had positive effects on all groups, especially those with lower skills/experience. Group D with AI support achieved equal/better results than Group A without AI, implying AI helped D attain A-level organ recognition ability.
Conclusion: AI improved physician's organ recognition, especially for less skilled and experienced physicians. We plan to obtain regulatory clearance as a medical device using these results by the end of this fiscal year.

ORAL SESSION 01 - New Instrumentation / Research
(11:30 AM — 12:30 PM), 11:39 AM

Category: New Instrumentation or Technology

SubCategory: Research

Impact of Telehealth at an Academic Fibroid Center during the COVID-19 Pandemic

Hayden J,[1,] Milla M,[2] Zhang J,[3] Atashroo D,[4] Lum DA[4]. [1]Obstetrics and Gynecology, Stanford Healthcare, Stanford, CA; [2]Stanford University, Palo Alto, CA; [3]Department of Obstetrics & Gynecology, Stanford University, Palo Alto, CA; [4]Department of Obstetrics and Gynecology, Stanford University, Palo Alto, CA*
*Corresponding author.

Study Objective: To study the impact of incorporating telehealth visits into a fibroid center during the COVID-19 pandemic on surgical volume and patient demographics.
Design: Retrospective observational study.
Setting: Tertiary academic fibroid center in California.
Patients or Participants: 588 consecutive patients seen from March 2019 through May 2021.
Interventions: We identified all new consecutive patients seen at an academic fibroid center in the year preceding the March 2020 COVID-19 lockdown and during the year following the center reopening in May 2020. We included patient demographics such as race, ethnicity, geographic location, presenting symptoms and insurance type. We included procedure performed (if any) including subcategorization into major and minor surgery. This data was analyzed utilizing an interrupted time series analysis using Poisson regression. The distribution of residual and autocorrelation was checked graphically.
Measurements and Main Results: 588 patients were identified during the study periods: 222 patients pre-COVID-19 lockdown and 366 patients post-COVID-19 lockdown. We observed a switch from 100% in-person visits pre-lockdown to 91% Telehealth visits post-lockdown. Patient demographics were unchanged but the number of patients seen per month post-lockdown was significantly higher (P<0.01). The implementation of Telehealth corresponded with a sustained 9% increase in the total number of procedures per month (p=0.03 IRR = 1.09 CI: 1.02-1.15). There was also a sustained increase in the total number of major procedures by 12% per month post-lockdown (p=0.04 IRR = 1.12 CI:1.00-1.14).
Conclusion: Our findings support the use of Telehealth as an effective and inclusive means of providing patient care in a surgical subspecialty. Despite the ongoing pandemic, the implementation of Telehealth corresponded with a increase in the number of patients seen per month as well as the number of total procedures and major surgeries. Patient demographics did not change, signifying that patient access to clinical care through Telehealth was not impacted.

1553-4650/$ — see front matter
https://doi.org/

ORAL SESSION 01 - New Instrumentation / Research (11:30 AM — 12:30 PM), 11:45 AM

Category: New Instrumentation or Technology

SubCategory: New Instrumentation or Technology

Calculating the Burden of Time Outside the Body in Endoscopic Surgery Using a Novel Computer-Vision-Based Surgical Intelligence Platform

Levin I,[1,] Rapoport Ferman J,[2] Bar O,[2] Cohen A,[1] Asselmann D,[2] Wolf T[2]. [1]Gynecology, Lis Maternity Hospital, Tel Aviv Sourasky Medical Center, Affiliated to the Tel Aviv University Sackler Faculty of Medicine, Tel Aviv, Israel; [2]Theator Inc., Palo Alto, CA*
*Corresponding author.

Study Objective: To measure the burden of Out-of-Body events during Gynecological endoscopic procedures using a novel computer-vision-based Surgical Intelligence Platform.
Design: Prospective and retrospective AI analysis of videos from laparoscopic procedures.
Setting: Department of Gynecology in a Tertiary Hospital.
Patients or Participants: Surgical videos from all laparoscopic surgical procedures performed throughout 2022 were included.
Interventions: Videos were analyzed using a Surgical Intelligence Platform that automatically detects OOB events using AI-based models. We measured the total time for all endoscopic procedures as well as time measurements for all OOB events.
Measurements and Main Results: 660 videos were analyzed. The total time for all endoscopic procedures carried out was 505.59 hours, of which 40.73 hours were OOB events (8.06%). Interestingly, more complex procedures such as laparoscopic hysterectomy and laparoscopic myomectomy (average duration 96.51±36.93 and 78.81±46.29 minutes, respectively) had lower proportions of OOB events (4.17% and 6.07%, respectively), whereas lower difficulty procedures (BSO, Lap Salpingectomy) had higher proportions of OOB events (16.35% and 10.19%, respectively).
Conclusion: An AI-based surgical analysis tool was used to assess the occurrence and burden of OOB events in our endoscopic procedures during 2022. This analysis demonstrated that OOB events were common and time-consuming. We were able to demonstrate that a significant portion of time in endoscopic procedures is spent outside the patient's cavity. The fraction of OOB events was higher in low-complexity procedures and lower in advanced procedures, probably due to the fact that skilled surgeons are more experienced in dealing with vision-obscuring surgical events.
The substantial amount of time spent OOB during procedures not only poses a risk for patients but is also significantly time-consuming in the operating room and carries important OR efficiency and financial implications for healthcare organizations. Surfacing such information should lead to data-driven innovative approaches aimed at ensuring that patients are not at risk, momentum is not lost, and efficiency is maintained during minimally invasive surgery.

ORAL SESSION 01 - New Instrumentation / Research (11:30 AM — 12:30 PM), 11:51 AM

Category: Research

SubCategory: Basic Science/Education

Impact of Training Level of the First Surgical Assistant on Quality Metrics for Hysterectomy: A Retrospective Review

Zhou G,[1,] Murji A,[2] Brandon-Sutherland K,[3] Randle E,[4] Cipolla A,[5] Bougie O,[6] Luketic L[7]. [1]Temerty Faculty of Medicine, University of Toronto, Toronto, ON, Canada; [2]Department of Obstetrics and Gynaecology, Mount Sinai Hospital, Toronto, ON, Canada; [3]Department of Obstetrics and Gynaecology, University of Toronto, Toronto, ON, Canada; [4]Department of Obstetrics and Gynaecology, IWK Health Centre, Halifax, NS, Canada; [5]Department of Obstetrics and Gynaecology, Credit Valley Hospital, Missisauga, ON, Canada; [6]Department of Obstetrics and Gynaecology, Kingston General Hospital, Kingston, ON, Canada; [7]Department of Obstetrics and Gynaecology, St. Joseph's Healthcare, Hamilton, ON, Canada*
*Corresponding author.

Study Objective: Evaluate impact of the first-assist level of training on surgical quality outcomes for hysterectomies performed by general gynaecologists.
Design: Multi-center retrospective review.
Setting: 7 Ontario, Canada hospitals (4 academic, 3 community).
Patients or Participants: Patients undergoing elective hysterectomy from July 2016-December 2020. Cases with pregnancy-related indications and those involving surgical fellows or fellowship-trained surgeons were excluded.
Interventions: Primary exposure was first-assist training level (postgraduate year (PGY) 1-5 or generalist). Primary outcome was median operative time (ORT)(minutes). Secondary outcomes were estimated blood loss (EBL), Clavien-Dindo grade ≥2 complications, and emergency visits and readmission, both within 30 days of surgery.
Measurements and Main Results: Patient, case and primary surgeon characteristics were described, and bivariate comparisons of outcomes based on first-assist training level were conducted. Logistic regression analysis was completed, and adjusted odds ratio (aOR) were reported. A total of 866 hysterectomies were performed with generalists and trainees assisting at 664 and 202 cases, respectively. There was no statistical difference in ORT between trainee- and staff-assisted cases (130[95-156] versus 99[73-139], p=0.14) after adjusting for confounders (hysterectomy route, uterine weight, additional procedures, surgeon volume, age, ASA, concomitant endometriosis/adhesions). Surgeries with trainees as first-assists had more ≥grade 2 complications (aOR 2.15, 95% CI 1.12-4.12, p=0.02) and hospital readmissions (aOR 2.91, 95% CI 1.18-7.16, p=0.02). Hysterectomies assisted by senior residents (PGY 3-5 and 4-5) had increased EBL (regression coefficient 42, 95% CI 0-83, p=0.05 and 43, 95% CI 2-84, p=0.04, respectively).

Conclusion: Hysterectomies assisted by residents were associated with increased complications and hospital readmissions, despite a similar surgical time, when compared to procedures with staff assistants.

ORAL SESSION 01 - New Instrumentation / Research
(11:30 AM — 12:30 PM), 11:57 AM

Category: Research

SubCategory: Other

Social Determinants and Hysterectomy Rates, Approaches, and Outcomes: A Systematic Review

Chang P,[1,] Sedra S,[1] Kinahan J,[1] Le AL,[2] Hum E,[3] Herman D,[3] Jackman V,[4] Le T,[2] Chen I[5]. [1]The Ottawa Hospital, Ottawa, ON, Canada; [2]Ottawa Hospital Research Institute, Ottawa, ON, Canada; [3]University of Ottawa, Ottawa, ON, Canada; [4]Memorial University of Newfoundland, St. John's, NF, Canada; [5]Gynecology and Obstetrics, University of Ottawa, Ottawa, ON, Canada*
*Corresponding author.

Study Objective: To determine the association between socioeconomic and sociodemographic factors on hysterectomy rates, approach and complications.

Design: Systematic review and meta-analysis.
Setting: N/A.
Patients or Participants: Following registration in PROSPERO, 103 studies describing patients undergoing hysterectomy and socioeconomic and sociodemographic factors were identified using electronic databases. Embase, Medline, and Cochrane Library were searched for studies published between 2010-2020 that described the association between education, income, rurality, insurance status, occupation, and marital status on hysterectomy rates, approaches (eg. abdominal vs. laparoscopic vs. vaginal), and complication rates. Article selection and data extraction was conducted by two independent reviewers, and the Newcastle-Ottawa Scale used to assess quality.
Interventions: N/A.
Measurements and Main Results: Our electronic search identified 4990 studies. Following title, abstract, and full text screening, a total of 103 studies were included. Studies were conducted in North America (n=83), Asia (n=12), Europe (n=9), and Africa (n=1). Studies were retrospective and observational in nature, and variable in quality. Higher hysterectomy rates were associated with lower education status (Odds Ratio 2.06[2.02-2.10], n=4), rurality (OR 1.11[1.10-1.13], n=7), higher income (OR 1.11 [1.08-1.13], n=7), and insured status (OR 2.00[1.90-2.12], n=2), while not associated with marital status (OR 1.04[0.99-1.09], n=2). Non-working status was associated with lower hysterectomy rates (OR 0.47[0.45-0.49], n=2). Lower minimally invasive hysterectomy (MIS) rates were associated with rurality (OR 0.76[0.73-0.78], n=5). Those with private insurance and higher income were more likely to undergo MIS hysterectomy (OR 1.15 [1.14-1.17], n=13 and OR 1.36[1.34-1.37], n=12, respectively). Several studies reported on the relationship between surgical complications and various social determinants of health however pooled analysis was not possible due to varying methodologies used.
Conclusion: Gynecologic surgical care appears to be associated with social determinants of health. As different determinants of health appear to exert different pressures, the effect of each social determinant needs to be considered separately.

ORAL SESSION 01 - New Instrumentation / Research
(11:30 AM — 12:30 PM), 12:03 PM

Category: Research

SubCategory: Other

Surgical Subspeciality Training Improves Surgical Outcomes in Benign Minimally Invasive Hysterectomy Even Among High-Volume Surgeons

Pfeuti CK,[1,] Makai G[2]. [1]Christiana Care Health System, Newark, DE; [2]Christiana Care Health System, Newark, DE*
*Corresponding author.

Study Objective: To evaluate the impact of gynecologic subspecialty training on surgical outcomes in benign minimally invasive hysterectomy (MIH) while accounting for surgeon volume.
Design: Retrospective cohort study of patients who underwent a MIH between 2014-2017.
Setting: Single community hospital system.
Patients or Participants: Patients were identified via CPT codes for vaginal, laparoscopic, or robotic hysterectomy. Exclusion criteria included a gynecologic cancer diagnosis or concomitant major procedure during hysterectomy. 1631 patients underwent a MIH for benign indications by either gynecologic generalists or subspecialists in MIGS, FMRPS, or gynecologic oncology. 125 hysterectomies were vaginal, 539 were conventional laparoscopic, and 967 were robotically assisted.
Interventions: N/A.
Measurements and Main Results: Surgical outcomes, including intraoperative visceral injuries, transfusions, EBL over 500 mL, and conversions, were compared between generalists and subspecialists and between low-volume and high-volume surgeons (defined as 12 or more hysterectomies annually). 47.6% of MIH were performed by subspecialists and 52.4% were performed by generalists (37.9% by high-volume generalists and 14.5% by low-volume generalists). Compared to generalists, subspecialists had a lower incidence of visceral injuries (0.5% vs 2.8%, $p < 0.001$), transfusions (0.1% vs 2.1%, $p < 0.001$), EBL over 500 mL (2.3% vs 7.4%, $p < 0.001$), and conversions (2.5% vs 6.6%, $p < 0.001$). Compared to low-volume surgeons, high volume surgeons had significantly lower incidence of each of these outcomes as well. The odds of a visceral injury or conversion in MIH performed by a generalist was 3.03 (1.89-5.00) times higher than for subspecialists. High-volume generalists were 5.26 (1.69-16.67) times more likely to have a visceral injury and 2.38 (1.35-4.17) times more likely to convert to an open procedure compared to high-volume subspecialists.

Conclusion: Both subspecialty training and high surgeon volume are associated with a lower risk of surgical complications in benign MIH. Subspecialty training is associated with a greater reduction in surgical complications even among high-volume surgeons.

ORAL SESSION 01 - New Instrumentation / Research (11:30 AM — 12:30 PM), 12:09 PM

Category: Research

SubCategory: Laparoscopy

Language-Based Disparities in Surgical Route of Hysterectomy for Benign Disease

González Peña TI,[1,] Jesse NJ,[2] Zhao Z,[3] Harvey LF,[2] Fajardo O[2].*
[1]*Department of Obstetrics & Gynecology, Vanderbilt University Medical Center, Nashville, TN;* [2]*Department of Obstetrics & Gynecology, Division of Minimally Invasive Gynecologic Surgery, Vanderbilt University Medical Center, Nashville, TN;* [3]*Department of Biostatistics, Vanderbilt University Medical Center, Nashville, TN*
*Corresponding author.

Study Objective: To assess the association between patient-preferred language and surgical route of hysterectomy.
Design: A retrospective cohort study using the Healthcare Cost and Utilization Project's State Inpatient Database (SID) and State Ambulatory Surgery and Services Database (SASD).
Setting: All inpatient and outpatient hysterectomies from the most recent year of available data (ranging from 2019 - 2020) from the six states that record patient-preferred language in the SID and SASD: Indiana, Iowa, Maryland, Michigan, Minnesota, and New Jersey.
Patients or Participants: Women aged 18 and over undergoing an inpatient or ambulatory hysterectomy of any type for benign indication.
Interventions: Minimally invasive hysterectomy (laparoscopic, vaginal, and laparoscopic-assisted approach).
Measurements and Main Results: We conducted logistic regression analyses to evaluate the association between patient preferred language and route of hysterectomy (abdominal vs. minimally invasive). 47,447 patients were included in the analysis. The majority of patients were non-Hispanic White (77%), with a median age of 46 years (IQR 40.0, 53.0). 94% of patients identified English as their preferred language. 6% preferred a non-English language, including 3% of patients who preferred Spanish. Individuals who preferred a non-English language were significantly less likely to undergo minimally invasive hysterectomy compared to individuals who preferred English (OR 0.54, 95% CI 0.49-0.59, p<0.001). This association remained significant following adjustments for demographic factors and social determinants of health including age, race, insurance, and state (OR 0.79, 95% CI 0.67-0.94, p=0.006).
Conclusion: Patients who are non-English speaking are significantly less likely to receive a minimally invasive hysterectomy. As prior research has demonstrated, minimally invasive hysterectomy results in improved surgical outcomes. Gynecologic surgeons need to address language disparities in addition to other socioeconomic factors such as race to optimize surgical outcomes for our patient population.

ORAL SESSION 01 - New Instrumentation / Research (11:30 AM — 12:30 PM), 12:15 PM

Category: Robotics

SubCategory: Research

Pelvic Floor and Sexual Function 3 Years after Hysterectomy-a Prospective Cohort Study

Johannesson U, Amato M, Forsgren C. Department of Obstetrics and Gynecology, Danderyd Hospital, Stockholm, Sweden; Department of Clinical Sciences, Division of Obstetrics and Gynecology, Danderyd Hospital, Karolinska Institutet, Stockholm, Sweden*
*Corresponding author.

Study Objective: To investigate the long-term effects of hysterectomy on benign indication on pelvic floor function and sexual function.
Design: Prospective clinical cohort study, 3-year follow-up.
Setting: In an academic affiliated district general hospital.
Patients or Participants: 260 patients undergoing hysterectomy on benign indication between 2016 and 2018.
Interventions: A comparison of robotic assisted total laparoscopic hysterectomy with traditional techniques of surgery regarding pelvic floor function and sexual function.
Measurements and Main Results: All women going through hysterectomy filled in validated questionnaires (Pelvic Floor Impact Questionnaire (PFIQ-7), Pelvic Floor Distress Inventory (PFDI-20), Female Sexual Function Index (FSFI)) on pelvic organ and sexual function before surgery, at six months, 1 and 3 years after surgery. Data were analyzed using nonparametric statistics and mixed effect models. The response rate at the 3-year follow-up was 154/242 (63.6%) for all questionnaires. There was an improvement of pelvic floor function at 3 years with a mean score of PFIQ-7 22.7 (49.4 SD, p<0.001) and mean score of PFDI-20 56.2 (54.6 SD, p=0.001). A deterioration of sexual function was seen among the sexually active women after 3 years with a mean score of FSFI of 21.6(10.1 SD, p<0.001) compared to baseline 25.2 (SD 6.6), not consistent with the unaltered sexual function for the whole cohort. No difference in pelvic floor or sexual function was detected when comparing robotic assisted laparoscopic hysterectomy (RTLH), laparoscopic hysterectomy (TLH) and abdominal hysterectomy (TAH).
Conclusion: Three years after surgery robotic-assisted total laparoscopic hysterectomy, total laparoscopic hysterectomy and total abdominal hysterectomy improve pelvic floor function to the same extent. An overall improvement of sexual function six months after hysterectomy, was not persistent after three years and among the sexually active women there was a decrease in FSFI scores. Correlations between pelvic floor function and sexual function after hysterectomy will be discussed.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 11:33 AM

Category: Fibroids

SubCategory: Fibroids

Effects of Relugolix-CT on Uterine Fibroid (UF) and Uterine Volume through 52 Weeks: Liberty Long-Term Extension (LTE) Post Hoc Analysis

Al-Hendy A,[1,] Venturella R,[2] Lukes A,[3] McLean R,[4] Zhai D[5]. [1]Department of Obstetrics and Gynecology, University of Chicago, Chicago; [2]Chair of Obstetrics and Gynecology, University Magna Graecia, Catanzaro, Italy; [3]Gynecology, Carolina Women's Research and Wellness Center, Durham; [4]Clinical Development, Myovant Sciences, Inc, Brisbane; [5]Biostatistics, Myovant Sciences, Inc, Brisbane*
*Corresponding author.

Study Objective: Evaluate baseline UF and uterine volume impact on outcomes with relugolix combination therapy (Relugolix-CT) in women with UF-associated heavy menstrual bleeding (HMB) in the LIBERTY LTE study.
Design: Phase 3, open-label, 28-week LTE study.
Setting: 149 research centers globally.
Patients or Participants: Premenopausal women with UF-associated HMB who completed the 24-week LIBERTY 1/2 studies were eligible to enroll in the LTE.
Interventions: Relugolix-CT (relugolix 40mg, estradiol 1mg, norethindrone acetate 0.5mg).
Measurements and Main Results: Proportion of women experiencing a clinically meaningful reduction in UF or uterine volume (>25% or >50%) through 52 weeks in the Relugolix-CT group was assessed. Subgroup analyses summarized impact of UF and uterine volume at baseline (<25cm^3 or ≥25cm^3; <300cm^3 or ≥300cm^3, respectively) on change in UF and uterine volume.
In total, 163 women received Relugolix-CT continuously up to 52 weeks; baseline mean volume of the largest UF was 80.0cm^3; mean uterine volume was 386.7cm^3.
At Week 24, 52.6% and 30.3% of women experienced >25% and >50% reduction in UF volume, respectively, increasing to 61.1% and 36.6% at Week 52. For uterine volume, 36.1% and 4.5% experienced a >25% and >50% reduction at Week 24, increasing to 41.2% and 9.6% at Week 52.
At Week 52, of 81 women with baseline UF volume of <25cm^3, 52.4% and 27.0% experienced a >25% and >50% reduction in UF volume; 69.1% and 45.6% of 81 women with baseline UF volume of ≥25cm^3 experienced >25% and >50% reductions in UF volume. Of 96 women with baseline uterine volume of <300cm^3, 38.5% and 6.4% experienced a >25% and >50% reduction in uterine volume; 44.8% and 13.8% of 67 women with baseline uterine volume of ≥300cm^3 experienced >25% and >50% reductions in uterine volume.
Conclusion: Women with larger baseline UF and uterine volume may be more likely to experience substantial reductions of UF and uterine volume with Relugolix-CT.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 11:39 AM

Category: Fibroids

SubCategory: Basic Science/Education

Development and Validation of a Simulation Model for Robotic Myomectomy

Schneyer R,[1,] Scheib S,[2] Green I,[3] Molina A,[4] Mara K,[5] Truong M[1]. [1]Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA; [2]Department of Obstetrics and Gynecology, Louisiana State University Health Sciences Center, New Orleans, LA; [3]Department of Obstetrics and Gynecology, Mayo Clinic, Rochester, MN; [4]Obstetrics and Gynecology, Penn State Milton S. Hershey Medical Center, Hershey, PA; [5]Biomedical Statistics and Informatics, Mayo Clinic, Rochester, MN*
*Corresponding author.

Study Objective: To describe a low-cost, low-fidelity robotic myomectomy model and to assess its validity for surgical simulation training.
Design: The model was created using <$5 worth of materials: a foam cylinder, felt, a stress ball, bandage wrap, and multipurpose sealing wrap.
Setting: Surgical simulation lab.
Patients or Participants: Four fellowship-trained minimally invasive gynecologic surgeons (experts) and 12 obstetrics and gynecology residents (novices) were recruited from August 2021 to April 2023.
Interventions: Participants performed a simulation task involving two steps: fibroid enucleation and hysterotomy repair. Video recordings were scored by two blinded reviewers using the validated Global Evaluative Assessment of Robotic Skills (GEARS) scale (5-25 points) and a modified GEARS scale (5-40 points), incorporating three novel domains specific to minimally invasive myomectomy. Performance was also scored using predefined task errors. Participants completed a post-task survey regarding the model's utility and educational effect. Interrater reliability of scoring was assessed using the intraclass correlation coefficient (ICC).
Measurements and Main Results: Median time to task completion was shorter for experts compared to novices (9.7 vs. 24.6 minutes, *P*=.001). Experts scored higher than novices on both the GEARS scale (median 23 [range 19-24] vs. 12 [6-17.5], *P*=.004) and modified GEARS scale (36 [29-38] vs. 20 [9.5-28], *P*=.004). Experts made fewer task errors than novices (median 15.5 vs. 37.5, *P*=0.034). The ICC was 0.89 for the GEARS assessment, 0.92 for the modified GEARS assessment, and 0.60 for task errors. All participants agreed that the model would be useful for learning or teaching robotic myomectomy, and 94% agreed it would be useful for assessing a learner's ability to perform fibroid enucleation and robotic suturing before live surgery.
Conclusion: We have demonstrated evidence supporting the validity of a low-cost robotic myomectomy model. The simulation model and the performance assessments developed in this study provide further educational tools for robotic myomectomy training.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 11:45 AM

Category: Fibroids

SubCategory: Fibroids

Long-Term Risk of Reintervention after Uterine Preserving Surgical Fibroid Treatments and Variation by Sociodemographic Factors

Zaritsky E,[1,] Mitro SD,[2] Lee C,[3] Wise L,[4] Xu F,[5] Hedderson M[6]. [1]OBGYN, Kaiser Permanente Northern California, Oakland, CA; [2]Division of Research, Kaiser Permanente Northern California, Oakland, CA; [3]Division of Research, Kaiser Permanente Northern California, Oakland, CA; [4]Epidemiology, Boston University, Boston, MA; [5]Division of Research, KPNC, Oakland, CA; [6]Division of Research, Kaiser Permanente Northern California, Oakland, CA*
*Corresponding author.

Study Objective: We compared long-term reintervention rates across four uterine-preserving surgical fibroid treatments (UPTs) and effect modification by sociodemographic factors.
Design: Retrospective open cohort.
Setting: Retrospective open cohort.
Patients or Participants: 10,670 patients aged 18-50 (20% Asian, 21% Black, 21% Hispanic, 32% White, 5% other/multiracial) from 2009-2021.
Interventions: Patients had a first UPT (laparoscopic or abdominal myomectomy, hysteroscopic resection, endometrial ablation [EA], uterine artery embolization [UAE]) after fibroid diagnosis. Patients maintained KPNC membership for ≥1 year after UPT and were followed until

reintervention (second UPT, hysterectomy) or censoring (age 50, disenrollment, study end).
Measurements and Main Results: We calculated cumulative incidence of reintervention and used Cox regression models to compare reintervention rates across UPTs adjusting for age, parity, race/ethnicity, body mass index (BMI), neighborhood deprivation index (NDI) and year. We assessed effect modification by age, parity, race/ethnicity, BMI, and NDI quartile.
Median follow-up was 3.8 years (interquartile range: 1.8, 7.5). Index UPTs were 13% (1352) hysteroscopic resections, 16% (1748) UAEs, 21% (2215) EAs, and 50% (5355) myomectomies. At index UPT, 20% of patients were younger than 36, 43% were nulliparous, and 33% had BMI <25 kg/m^2. Seven-year cumulative reintervention risk was 22% for myomectomy, 26% for UAE, 36% for EA, and 37% for hysteroscopic resection. Hysterectomy was the most common reintervention (85% of reinterventions after UAE, 77% after EA, 48% after myomectomy, 45% after hysteroscopic resection). Repeat procedures were also common: 33% of reinterventions after hysteroscopic resection were hysteroscopic resections, and 30% of reinterventions after myomectomy were myomectomies. Reintervention rates did not vary by race/ethnicity, BMI, or NDI, but rates of reintervention after UAE, EA, and hysteroscopic resection were higher for younger patients, and rates for myomectomy and hysteroscopic resection were higher for multiparas versus nulliparas.
Conclusion: Long-term reintervention risks for UAE, EA, and hysteroscopic resection are greater than myomectomy, and does not vary by race/ethnicity, BMI, or NDI.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 11:51 AM

Category: Fibroids

SubCategory: Hysteroscopy

10 Steps in the Successful Conservative Surgical Management of Prolapsed Submucous Leiomyoma

Cantor MR, Baltazar MRA. Obstetrics and Gynecology, Quirino Memorial Medical Center, Manila, Philippines*
*Corresponding author.

Study Objective: Leiomyoma are common benign smooth muscle tumors and have several types. The pedunculate submucous myoma has the chance of prolapse. Vaginal myomectomy has been the conservative surgical treatment of patients with prolapsed submucous myoma. However, there were incidences of hemorrhage, recurrence and non-puerperal uterine inversion due to the remaining pedicle. The aim of this review is to present a standard and sequential minimally invasive procedure that can preserve the uterus. We enumerated the procedure in 10 steps that is clear and organized to be easily performed by surgeons.
Design: A Descriptive study.
Setting: A tertiary government hospital. The author summarizes the technique divided into 10 steps: 1. Assessment of the size and mobility of the prolapsed submucous myoma 2. Assessment of the accessibility of the pedicle of the prolapsed submucous myoma 3. Perform Diagnostic Hysteroscopy in order to identify the pathology and topography of the uterus 4. Devascularization 5. Detachment 6. Removal of the myoma 7. Sealing off the dilated cervix with silicone nipple bottle 8. Injecting vasoconstrictor into the lip of the cervix 9. Hysteroscopic resection of the remaining pedicle of the myoma 10. Hemostasis.
Patients or Participants: Patients with no known allergy to silicone, who presented with prolapsing submucous leiomyoma and opted for a conservative management.
Interventions: Standardized conservative surgical management of prolapsed submucous leiomyoma
Measurements and Main Results: N/A.
Conclusion: The stepwise procedure of vaginal myomectomy followed by Hysteroscopic resection of the remaining pedicle of the submucous myoma could be a standard surgical management for patients who opt to preserve their uterus. The 10 steps described may help other surgeons plan and perform their surgery easier and safer. Innovative materials like the use of silicone nipple bottle may be utilized to overcome the dilated cervix during hysteroscopy.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 11:57 AM

Category: Fibroids

SubCategory: New Instrumentation or Technology

Agreement Analysis of Fibroid and Uterine Volumes Assessed in Ultrasound, MRI, and 3D Virtual Reality before and after SPRM Treatment

Flaxman TE,[1,] Sandhu S,[2] Mbewe C,[3] Duigenan S,[3] Aviv R,[3] Singh SS[4].*
[1]Ottawa Hospital Research Institute, Ottawa, ON, Canada; [2]Biomedical Sciences, University of Ottawa, Ottawa, ON, Canada; [3]Radiology, University of Ottawa, Ottawa, ON, Canada; [4]Obstetrics & Gynecology, University of Ottawa, Ottawa, ON, Canada
*Corresponding author.

Study Objective: Conservative management of uterine fibroid (UF) related symptoms include hormonal medications. Medical imaging such as magnetic resonance imaging (MRI) and ultrasound (US) are commonly used to diagnose and monitor UFs, however, there can be up to a 25% measurement difference between them. This study sought to evaluate the agreement between MRI, US, and 3D models created in virtual reality (VR) for uterine and UF volume estimates. Patient responsiveness to selective progesterone receptor modulator (SPRM) was also evaluated.
Design: Repeated measures cohort study.
Setting: Tertiary academic hospital.
Patients or Participants: Patients were selected from the ASTEROID 5 clinical trial examining safety and efficacy of Vilaprisan (SPRM) in treating UFs. Included participants were on a daily 2mg oral intake of Vilaprisan.
Interventions: MRI and US images from 10 UF patients pre-and-post-SPRM treatment (20 scans total) were analyzed. The 3 largest UFs and the uterus of each patient was segmented in VR to create 3D models of each structure. 3DVR volumes were compared to volumes estimated from standard planar measure on MRI and US using one-way analysis of variance. Effect of SPRM treatment on 3DVR volumes was evaluated using dependent T-tests.
Measurements and Main Results: Although 3DVR volumes were significantly correlated with MRI (Pearson's R=0.923) and US (Pearson's R=0.820), US volume estimates were significantly less than 3DVR (p=0.015), measuring on average 91.82% (SD=44.86%) of 3DVR volumes. MRI and US volume estimates also significantly differed (p=0.007), with a mean difference of 24.68% (SD=8.85%) from MRI. There was a significant difference (p<0.05) in mean fibroid and uterine size pre- to post-SPRM treatment, with 24.55% (SD=29.13%) and 17.47% (SD=18.06%) reduction in volumes, respectively.
Conclusion: Findings suggest 3D segmentation of uterine and fibroid anatomy yields comparable volume estimates to MRI and can be a valuable adjunct for visualisation of complex anatomy and monitoring of patient responsiveness to medical interventions.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 12:03 PM

Category: Oncology

SubCategory: Laparoscopy

The Effect of Hematologic Malignancies on Perioperative Transfusions for Patients Undergoing Hysterectomy

Duckworth K, Lee S, Pothuri B. Obstetrics & Gynecology, NYU Langone Health, New York, NY*
*Corresponding author.

Study Objective: We sought to determine if patients with hematologic malignancy undergoing elective hysterectomy are at any increased risk of requiring a perioperative transfusion.
Design: Retrospective cross-sectional study.
Setting: Urban tertiary medical center and two affiliated community hospitals.
Patients or Participants: All patients who underwent non-emergent hysterectomy between 2019-2021 were identified by querying the electronic medical record system. Patients with hematologic malignancies were then defined as those with leukemia, lymphoma, plasma cell dyscrasias, and myeloproliferative disorders.
Interventions: Perioperative transfusions were defined as any transfusion of packed red blood cell, cryoprecipitate, platelets, and/or fresh frozen plasma either intraoperatively or within 30 days postoperatively.
Measurements and Main Results: There were 1491 patients in our study. Overall, 124 (8.3%) of the patients in our study received any perioperative transfusion: 53 patients had an intraoperative transfusion only, 58 patients had a postoperative transfusion only, and 13 required both intra- and postoperative transfusions. Four of 36 (11%) patients with hematologic malignancies received perioperative transfusions, compared to 120 of 1491 (8%) without hematologic malignancies ($p = 0.54$). When controlling for race, BMI, surgical route, fibroids, endometriosis, type of procedure, comorbidities, anticoagulation, and preoperative hemoglobin <10g/dL, hematologic malignancy was not associated with an increase in transfusion rates (OR 1.38, 95% CI 0.38-4.97). Factors associated with transfusion were: conversion from minimally invasive to open surgery (OR 3.96, 95% CI 1.05-14.84) and preoperative hemoglobin of <10 g/dL (OR 8.46, CI 5.24-13.66). Those undergoing laparoscopic or robotic hysterectomies were at decreased risk of requiring transfusions when compared to open surgeries (OR 0.07, CI 0.02-0.21 and OR 0.09, CI 0.05-0.15, respectively).
Conclusion: Patients with hematologic malignancies were at no increased risk of requiring an intra- or postoperative transfusion in this cohort. Conversion from minimally invasive to open procedures and preoperative anemia were associated with increased risk of transfusion. These data suggest that hysterectomies are safe in patients with a history of concurrent hematologic malignancy.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 12:09 PM

Category: Oncology

SubCategory: Other

Comparison of O-RADS 2022 and Simple Rules Ultrasound Classifications to Predict Adnexal Malignancy

Solnik MJ,[1,] Atri M,[2] Nanapragasam A,[2] Sagheb S,[3] Nasri F[2]. [1]Obstetrics and Gynecology and Medical Imaging, University of Toronto, Toronto, ON, Canada; [2]Medical Imaging, University of Toronto, Toronto, ON, Canada; [3]University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: This study compares performance of O-RADS (version 2022) and Simple Rules (SR) ultrasound criteria in a cohort of asymptomatic pathology-proven adnexal masses and evaluates O-RADS and SR inter-observer agreement in a subset of patients.
Design: Retrospective Cohort Study.
Setting: Diagnostic imaging.
Patients or Participants: Consecutive women who underwent surgical resection of adnexal mass(es) between January 2008 and December 2018 at two University Hospitals, a time period when cine clips were available for all ultrasounds.
Interventions: One experienced radiologist, blinded to pathological diagnosis, categorized all imaging by O-RADS and SR criteria.
Measurements and Main Results: 791 adnexal masses in 762 patients were assessed, aged 18-92 (44 ± 15); 628 benign, 49 LMP, 114 malignant. O-RADS categories were 2 (n=309), 3 (n=165), 4 (n=181), 5 (n=136) with malignant rates of 0.3%, 3%, 25%, and 82% respectively. Application of simple rules criteria identified 561 masses as benign and 230 as malignant. Combining O-RADS 4 and 5 categories as being malignant, sensitivity, specificity, NPV, PPV, and accuracy to detect invasive/LMP masses were 96% (CI:92-99%), 75% (CI:71-78%), 99% (CI:97-100%), 49% (CI:44-55%), and 79% (CI:76-82%). Corresponding results for SR were 96% (CI:91-98%), 89% (CI:85-91%), 99% (CI:98-100%), 68% (CI:61-74%), and 90% (CI:87-92%) with specificity, PPV, accuracy of SR being statistically significantly higher than O-RADs ($p<0.0001$). AUC-ROC of SR and O-RADS were 0.920 and 0.855 ($p=0.01$).
Inter-observer agreement between the three readers for review of a subset of 172 masses were 0.89, 0.91, and 0.93 for SR benign vs malignant and 0.71, 0.75, and 0.75 for O-RADS (2/3) vs O-RADS 4/5.
Conclusion: Adnexal mass assessment with SR performs significantly better than US O-RADS classification in specificity, PPV, and accuracy. Risk stratification by experienced radiologists using SR criteria outperforms O-RADS and can result in better triage to surgical gynecologists and oncologists with an improved rate of predicting malignancy.

ORAL SESSION 02 - Fibroids
(11:30 AM — 12:30 PM), 12:15 PM

Category: Fibroids

SubCategory: Laparoscopy

Abdominal Versus Vaginal Contained Manual Morcellation for Laparoscopic Myomectomy

Flatow V,[1,] Atobiloye N,[1] Khalil S,[2] Ascher-Walsh C,[1] Rosen L,[1] Zakashansky K[1]. [1]Department of Obstetrics, Gynecology and Reproductive Science, The Icahn School of Medicine at Mount Sinai, New York, NY; [2]Department of Obstetrics, Gynecology and Reproductive Science, Icahn School of Medicine at Mount Sinai, New York, NY*
*Corresponding author.

Study Objective: The aim of this study is to investigate differences in operative outcomes with abdominal versus vaginal contained manual morcellation for laparoscopic myomectomies.
Design: Single center retrospective cohort study.
Setting: Academic tertiary care institution in the United States.
Patients or Participants: All patients undergoing laparoscopic myomectomy between April 2018 and October 2022, performed by fellowship trained surgeons.
Interventions: N/A.
Measurements and Main Results: A total of 221 laparoscopic myomectomies were analyzed. 35% of patients identified as white and 32% as black. All fibroid specimens were extracted within a specimen bag through contained bag manual morcellation. 80 surgeries utilized a posterior colpotomy for specimen extraction, while 141 surgeries utilized an extended abdominal incision for specimen extraction. There was no significant difference in operative time for laparoscopic myomectomies using vaginal extraction (mean=132 minutes, SD=35) versus abdominal extraction (mean=127 minutes, p=.210). There was no significant difference in blood loss in laparoscopic myomectomies using abdominal extraction (mean= 144, SD=147) versus vaginal extraction (mean=133 SD=147; p=.400). There was no significant difference in morphine milliequivalents (MMEs) administered in the PACU between patients who received abdominal (mean=19.33, SD 15) versus vaginal extraction (mean=19.01, SD 12; p=.947). There were no significant differences in maximum postoperative pain scores in the abdominal extraction group (mean= 6.52, SD=2.5) versus the vaginal extraction group (mean= 6.45, SD=2.7; p=.970). There was one case where vaginal specimen extraction was used where a vaginal laceration resulted in a take back to the operating room for repair. There were no cases of incisional hernia identified post-operatively within our electronic medical record.
Conclusion: There were no significant differences in operative time, blood loss, or immediate post-operative pain in laparoscopic myomectomies performed with vaginal or abdominal specimen extraction in our study. Further prospective research, randomized trials, and long term follow up studies are needed to further elucidate if there is a clear benefit to one approach.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:03 PM

Category: Endometriosis

SubCategory: Research

Is Appendiceal Endometriosis in the Eye of the Beholder? Predictive Value of Visible Lesions in Identifying True Pathology

Urbina P,[1,] Bolten K,[2] Emeka A,[3] Yu L,[1] Milad MP,[1] Yang LC,[1] Chaudhari A,[1] Tsai S[1]. [1]Obstetrics & Gynecology, Northwestern Medicine/ Northwestern University, Chicago, IL; [2]Obstetrics & Gynecology, Northwestern University Feinberg School of Medicine, Chicago, IL; [3]Minimally Invasive Gynecologic Surgery, Northwestern University, Chicago, IL*
*Corresponding author.

Study Objective: To describe the accuracy of various appendiceal phenotypes in predicting histopathology-confirmed endometriosis at the time of laparoscopic gynecologic surgery.
Design: A single-center retrospective case series.
Setting: An urban academic medical center.
Patients or Participants: Patients 18 years of age or greater, undergoing laparoscopic gynecologic surgery with concomitant appendectomy, for benign indications by providers within the Division of Minimally Invasive Gynecologic surgery between May 2003-April 2022.
Interventions: Selective appendectomy for suspected appendiceal endometriosis at time of benign laparoscopic gynecologic surgery.
Measurements and Main Results: A total of 95 patients met inclusion criteria for data analysis. Our study yielded a 42.1% appendiceal endometriosis prevalence rate (n=40 patients). Appendiceal phenotypes suspicious for endometriosis yielded a sensitivity rate of 82.5% and positive predictive value of 71.5%. Appendiceal nodularity ($p<0.001$), adhesive disease ($p<0.05$) and endometriotic lesions ($p<0.05$) were predictive of histology-confirmed disease in the univariate model. Multivariate analysis confirmed an association between nodularity and histology-confirmed disease ($p<0.001$). Exploratory analysis revealed an association between endometriotic lesions with hemosiderin deposits and pathology positive for appendiceal endometriosis ($p<0.001$). Notably, 5 patients with a normal appearing appendixes had pathology positive for endometriosis. Moreover, 2 patients with a visibly normal appendix had pathology consistent with neural hyperplasia. Our study population also noted instances of mucinous cyst adenoma, neuroendocrine tumor and mesothelial inclusion cysts.
Conclusion: Our results underscore the importance of preoperative counseling regarding possible appendiceal disease and potential utility of removal at the time of benign gynecologic surgery. Visible endometriotic lesions, nodularity and adhesive disease are reliable predictors of appendiceal endometriosis. Notably, several patients with a normal appearing appendix were also found to have the disease on final pathology. A larger sample size in the form of a multi-center study or registry is indicated to further substantiate our findings and facilitate management guidelines for patients undergoing laparoscopy for endometriosis.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:09 PM

Category: Endometriosis

SubCategory: Pelvic Pain

Endometriosis and Pelvic Pain: A Look into Racial Variation in Medical and Surgical Management

Wicks C,[1] Weintraub M,[2] Tucker LY,[3] Childs A,[4] Hen E,[2] Zaritsky E[5,]. [1]Obstetrics Gynecology, Kaiser Permanente Northern California, Oakland, CA; [2]GME, Kaiser Permanente Northern California, Oakland, CA; [3]Division of Research, KPNC, Oakland, CA; [4]GME, Kaiser Permanente Northern California, Oakland, CA; [5]OBGYN, Kaiser Permanente Northern California, Oakland, CA*
*Corresponding author.

Study Objective: An estimated 10% of reproductive-age women suffer from endometriosis; however racial variations in prevalence and treatment are unknown. Black women are often undertreated for many pain and medical conditions. The objective of the study was to assess variations in medical, pain management, and surgical treatment among Black and non-Black women for endometriosis/pelvic pain disorders.
Design: We conducted an IRB-approved retrospective cohort study of women ≥ 18 years old with pelvic pain disorder (including endometriosis, general pelvic pain, dysmenorrhea, and dyspareunia) coded in the electronic medical record between 2012 and 2019. Demographic, clinica,l and treatment characteristics were assessed overall and by patient race, Black vs non-Black women.
Setting: Large Integrated Health Care Setting.
Patients or Participants: Women ≥18-years-old with pelvic pain disorder (including endometriosis, general pelvic pain, dysmenorrhea, and dyspareunia) coded in the electronic medical record between 2012 and 2019.
Interventions: N/A.
Measurements and Main Results: Of 15,164 eligible study subjects, 1707 (11.3%) were Black and 13,457 (88.7%) non-Black (including 50.1% White, 15.6% Asian, 28% Latinx, and 6% other). Black women compared to non-Black were younger (median age 36 [interquartile range (IQR) 28-44] vs 37 [IQR 30-45] years, $p<.001$), had a higher median body mass index (29.8 [IQR 25.2-35.9] vs 26 [IQR 22.7-30.7] kg/m2, $p<.001$) and had similar parity. Compared to non-Black, a higher proportion of Black women received hormonal therapy (56.2% vs 51.9%, $p<.001$), pain medications (55.4% vs 44.7%, $p<.001$) and surgery (25.1% vs 22.7%, $p=.03$); a lower proportion of Black women received a referral to a pelvic pain specialist (14.5% vs 17.8%, $p=.001$).
Conclusion: Black women compared to non-Black women received more hormonal, pain, and surgical management in contrast to prior publications, However, they had a lower referral rate to a pelvic pain specialist. These findings illustrate the need to better understand allocation of care in patients with pelvic pain disorders, including endometriosis.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:15 PM

Category: Endometriosis

SubCategory: Endometriosis

Ultrasound Based Decision Tree Analysis Modelling to Predict AAGL Endometriosis Surgical Complexity Levels

Mak J,[1,] Eathorne A,[2] McClenahan P,[3] Gil A,[4] Condous G[5]. [1]Department of Obstetrics and Gynaecology, Central Coast Local Health District, Holden St, Gosford, Australia; [2]Medical Research Institute of New Zealand, Wellington, New Zealand; [3]Nepean Hospital, New South Wales, Australia; [4]Nepean Hospital, New South Wales, Australia; [5]OMNI Ultrasound and Gynaecological Care, Sydney, Australia*
*Corresponding author.

Study Objective: Develop ultrasound-based endometriosis severity staging models to predict AAGL surgical complexity levels.
Design: Univariate analysis used to identify ultrasound features of endometriosis that best predict surgical complexity and build decision tree models of staging.
Setting: Multicentre.

Patients or Participants: Pre-existing dataset (n= 640) with comprehensive ultrasound data, collected prospectively.
Interventions: Observational.
Measurements and Main Results: 4 stage (model 1) and 3 stage (model 2) ultrasound-based decision tree analysis models were developed. The data were divided into training data (n=448 (70%)) and test data (n=192 (30%)). Univariate analysis via chi-squared test was performed on 34 sonographic finding categories. The C4.5 algorithm was used to identify optimal features for inclusion in decision trees. Models built on training data, applied to test data. Pruning and tuning parameters applied. Concordance of endometriosis staging models and AAGL surgical complexity level assessed using kappa and weighted kappa coefficients as well as sens, spec, PPV and NPV. Model 1 correlated with AAGL surgical complexity levels (A, B, C and D) and model 2 correlated with AAGL surgical complexity levels (A, B+C and D). Model 1 identified four US features (any bowel DE, endometrioma, POD partial obliteration & bladder DE); Model 2 identified five surgical features (any endometrioma, any bowel DE, POD partial obliteration, uterosacral DE and torus uterinus DE). Model 1 (4 stage) accuracy predicting AAGL surgical complexity level (95%CI's): Kappa 0.52 (0.43-0.60), Weighted Kappa 0.59 (0.50-0.68). Sens/spec/PPV/NPV for A (94.74/72.27/62.07/96.63), B (60.47/91.73/70.27/87.77), C (4.76/100/100/77.01), D (94.12/87.32/64.00/98.41). Model 2 (3 stage) accuracy predicting AAGL surgical complexity level: Kappa 0.45 (0.33-0.56), Weighted Kappa 0.53 (0.43-0.63). Sens/spec/PPV/NPV for A (84.62/79.84/63.77/92.52), B +C (64.04/68.97/67.86/65.22), D (42.86/94.33/65.22/86.93).
Conclusion: Decision tree models for ultrasound-based endometriosis severity staging built on univariate analysis has a high level of agreement with AAGL surgical complexity levels. The 4-stage system outperformed the 3-stage system.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:21 PM

Category: Endometriosis

SubCategory: Other

Association between Ultrasound Soft Markers of Endometriosis and Pathologically Confirmed Positivity Rates of Endometriosis Lesions

VanDeman H,[1,] Moino D,[2] Tanner J,[3] Wyant H,[2] Al Jumaily M,[1] Hochberg L,[1] Mikhail E[4]. [1]Obstetrics and Gynecology, University of South Florida, Tampa, FL; [2]Morsani College of Medicine, University of South Florida, Tampa, FL; [3]College of Public Health, University of South Florida, Tampa, FL; [4]Minimally Invasive Gynecologic Surgery, University of South Florida, Tampa, FL*
*Corresponding author.

Study Objective: To compare the association between soft markers of endometriosis found on transvaginal ultrasound (negative sliding sign in posterior cul-de-sac and fixed ovaries) and pathologically confirmed positivity rate of endometriosis lesions.
Design: Retrospective cohort study.
Setting: University teaching hospital.
Patients or Participants: Women above 18 years-old who underwent laparoscopic surgery for endometriosis and had a transvaginal ultrasound (US) performed by a gynecologic imaging specialist prior to surgery at a tertiary care hospital from February 2018 to November 2022 were screened for inclusion. Patients who underwent open surgery, whose primary surgical indication was not endometriosis, or had procedures performed by non-gynecologic surgeons were excluded.
Interventions: N/A.
Measurements and Main Results: Patients were classified as having reached or not having reached 80% positivity in pathological confirmation of endometriosis lesions. Chi-square and Fisher's exact tests were used to assess statistically significant differences between patient sociodemographic and clinical characteristics and each soft marker, posterior cul-de-sac (POD) sliding sign and fixed ovaries. Log binomial regression was used to estimate risk ratios (RR) and 95% confidence intervals (CI) representing the association between each soft marker and reaching 80% positivity. 27.6% (70/254) of the study population demonstrated negative POD sliding and 35.5% (98/276) demonstrated fixed ovaries. In patients who had a negative POD sliding sign on US, there was an 18% increased likelihood reaching 80% positivity compared to positive POD sliding sign (adjusted RR: 1.18; 95% CI: 1.01-1.38). Similarly, patients with fixed ovaries on US were 19% more likely to have reached 80% positivity rate of endometriosis lesions (adjusted RR: 1.19; 95% CI: 1.03-1.38).
Conclusion: Transvaginal ultrasound soft markers performed by a gynecologic imaging specialist increase likelihood of pathologically confirmed positivity rate of peritoneal endometriosis during laparoscopic surgery. Although absence of US soft markers cannot be used to rule out endometriosis, presence of US soft makers is useful during preoperative counselling for endometriosis patients.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:27 PM

Category: Endometriosis

SubCategory: Pelvic Pain

The Effect of Medical Management on Ovarian Endometriomas: A Systematic Review and Meta-Analysis

Thiel P,[1,] Donders F,[2] Kobylianskii A,[1] Maheux-Lacroix S,[3] Matelski J,[4] Walsh C,[5] Murji A[6]. [1]Mt. Sinai Hospital & Women's College Hospital, Toronto, ON, Canada; [2]CHU de Québec-Université Laval, Quebec City, QC, Canada; [3]CHU de Québec-Université Laval, Quebec, QC, Canada; [4]Biostatistics Research Unit, Toronto, ON, Canada; [5]Mount Sinai Hospital, University of Toronto, Toronto, ON, Canada; [6]Department of Obstetrics and Gynaecology, Mount Sinai Hospital, Toronto, ON, Canada*
*Corresponding author.

Study Objective: To evaluate the effect of hormonal suppression of endometriosis on the size of endometriotic cysts.
Design: We performed a meta-analysis that included studies of pre-menopausal women undergoing hormonal treatment of endometriosis for ≥3 months. We excluded studies that combined hormonal and surgical intervention and those using hormones to prevent endometrioma recurrence. The primary outcome was mean change in endometrioma size (volume or diameter), expressed as a percentage, from baseline to at least 6 months. We performed subgroup analyses by class of hormonal therapy. Risk of bias was assessed with the Newcastle-Ottawa Scale and Cochrane Risk of Bias Tool. The protocol was registered in PROSPERO, CRD42022385612.
Setting: We searched MEDLINE, PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, and clinicaltrials.gov from January 2012-December 2022.
Patients or Participants: Pre-menopausal women with endometrioma.
Interventions: Hormonal suppression for endometriosis.
Measurements and Main Results: We screened 5072 citations and included 16 studies (15 cohorts, 1 randomized controlled trial) of 855 patients treated with dienogest (7 studies), other progestins (4), combined hormonal contraceptives (CHC) (2), and other (3). Following any hormonal treatment, there was a 44% mean reduction in endometrioma size (95%CI 31-56, p<0.001, 12 studies, 696 patients), 47% mean reduction in

volume (95%CI 25-69, p=0.002, 5 studies, 415 patients), and a 41% mean diameter reduction (95%CI: 18-65, p=0.01, 7 studies, 281 patients). Dienogest was associated with a mean size reduction of 56% (95%CI: 32 to 80, p=0.002, 5 studies, 189 patients), CHCs with a mean size reduction of 31% (95%CI: 3-59, p=0.04, 3 studies, 151 patients), and no significant size reduction in the progestin group. There was high heterogeneity (I^2: 18%-98%) and studies were high risk for selection bias.
Conclusion: Hormonal suppression can result in substantial reductions in endometrioma size, but there is uncertainty in the exact reduction that a particular patient may experience.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:33 PM

Category: Endometriosis

SubCategory: Research

Prostaglandin F2α and Endometriosis: An Ongoing Pain
Ahmad G,[1,] Fischer D,[2] Lamb H,[1] Caine R,[2] Marshall K,[2] Kendall A,[2] Nicolaou A[2]. [1]Northern Care Alliance, Oldham, Greater Manchester, United Kingdom; [2]University of Manchester, Manchester, United Kingdom*
*Corresponding author.

Study Objective: To elucidate prostaglandin (PG)F2α synthesis and its role in the pathogenesis of endometriosis, adhesions and pain symptoms.
Design: Samples were obtained from consenting women at laparoscopy. Peritoneal, endometrial and endometriotic lesion PGF2α were measured using liquid chromatography tandem mass spectrometry with electrospray ionisation (LC/ESI-MS/MS) and gene expression analysis was performed using RT-PCR.
Setting: Patients were placed in the Lloyd-Davies position during laparoscopic surgery to optimise visualisation and access to the pelvic space (tertiary-level hospital). Samples were snap frozen and analysed at a University research laboratory.
Patients or Participants: Patients were selected from operating lists of a surgical team specialising in excision of endometriosis (n=39). Of the 23 diagnosed, 17 were confirmed to have ovarian endometriomas.
Interventions: Laparoscopic peritoneal fluid, peritoneal washes, peritoneum, endometriomas and eutopic endometrial tissue were collected.
Measurements and Main Results: Aldo-keto reductase (AKR) 1C1-3, AKR1B1 and AKR1B10 enzymes catalyse the formation of PGF2α. AKR1C1 ($p<0.001$), AKR1C2 ($p<0.05$) and AKR1C3 ($p<0.0001$) were upregulated in tissue from endometriomas compared with eutopic endometrium from women without endometriosis. Prostaglandin F receptors (FP; $p<0.05$) and AKR1B1 transcripts ($p<0.05$) were also elevated when comparing endometriotic lesions to eutopic endometrium in the endometriosis group. AKR1B10 was low throughout.
AKR expression in the peritoneum and peritoneal PGF2α levels did not change with endometriosis or extent of pelvic adhesions. However, PGF2α concentration and eutopic FP receptor abundance demonstrated positive correlations with self-reported pain scores ($p<0.05$).
Conclusion: These data implicate PGF2α and FP receptors in endometriosis symptom severity. Ovarian endometriomas or the peritoneum itself may contribute to the levels of peritoneal PGF2α. Interestingly, eutopic rather than endometriotic FP receptors may relate to the chronic pelvic pain associated with uterine hyperactivity, innervation, vasoconstriction and/ or inflammatory response. Targeting these sites could help improve the management of symptoms in women with this hard-to-treat disease.

ORAL SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:39 PM

Category: Endometriosis

SubCategory: Pelvic Pain

Impact of Time Since Surgical Diagnosis of Endometriosis on Outcomes with Relugolix Combination Therapy: Spirit Long-Term Extension (LTE)
As-Sanie S,[1,] Kotarski J,[2] Mehedintu C,[3] Reznichenko G,[4] Perry JS,[5] Imm SJ,[5] Becker CM[6]. [1]Obstetrics and Gynecology, Minimally Invasive Surgery, University of Michigan, Ann Arbor, MI; [2]Department of Gynecological Oncology and Gynecology, Medical University of Lublin, Lublin, Poland; [3]Obstetrics and Gynaecology, Claudia Mehedintu Carol Davila University of Medicine and Pharmacy, Bucharest, Romania; [4]Department of Obstetrics and Gynecology, Clinical Maternity Hospital, Zaporizhzhya, Ukraine; [5]Myovant Sciences Inc., Brisbane, CA; [6]Nuffield Department of Women's and Reproductive Health, University of Oxford, Oxford, United Kingdom*
*Corresponding author.

Study Objective: To investigate whether time since surgical diagnosis of endometriosis (<5 and ≥5 years) impacts efficacy of relugolix combination therapy (Relugolix-CT) in women with endometriosis (EM)-associated pain in SPIRIT LTE.
Design: Phase 3, open-label, 80-week, LTE study.
Setting: 183 research centers globally.
Patients or Participants: Premenopausal women (18−50 years) with moderate-to-severe EM-associated pain who completed the 24-week pivotal SPIRIT 1/2 studies.
Interventions: Relugolix-CT (relugolix 40 mg, estradiol 1 mg, norethindrone acetate 0.5 mg).
Measurements and Main Results: Of 1261 women in SPIRIT 1/2, 802 entered the LTE and 277 were treated with relugolix-CT up to 104 weeks. Least squares (LS) mean changes in Numerical Rating Scale (NRS) scores for dysmenorrhea, non-menstrual pelvic pain (NMPP), and Endometriosis Health Profile-30 (EHP-30) pain domain scores were assessed in subgroups of time since diagnosis <5 years (N=188) and ≥5 years (N=89).
Baseline demographics and clinical characteristics were comparable between subgroups, except for an older mean age in the ≥5-years subgroup (36.4 vs 33.0). Mean time since diagnosis (standard deviation) was 2.1 (1.4) years for <5-years subgroup, and 8.2 (3.0) years for ≥5-years subgroup.
With Relugolix-CT, LS mean NRS score for dysmenorrhea decreased from 7.5 (severe) to 1.2 (mild) in the <5-years subgroup and from 7.1 (moderate) to 0.9 (mild) in the ≥5-years subgroup with percentage reductions in pain of 83.2% and 86.1%, respectively. LS mean NRS score for NMPP decreased from 6.1 (moderate) to 1.9 (mild) in the <5-years subgroup (69.7%) and from 5.8 (moderate) to 1.6 (mild) in the ≥5-years subgroup (69.1%).LS mean EHP-30 pain scores decreased from 57.9 to 9.7 (82.1%) in the <5-years subgroup, and from 56.0 to 11.4 (77.7%) in the ≥5-years subgroup, demonstrating improvement in daily functioning.
Conclusion: Over 104 weeks, treatment outcomes did not differ for dysmenorrhea, NMPP, and daily functioning between subgroups of women with <5 years or ≥5 years since surgical diagnosis.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:18 PM

Category: Hysteroscopy

SubCategory: Fibroids

Implementation of Operative Hysteroscopy in Clinic

Demery KM, Saad C. OBGYN, Harbor UCLA Medical Center, Torrance, CA*
*Corresponding author.

Study Objective: To evaluate how utilization of operative hysteroscopy in clinic impacts OR utilization for hysteroscopy.
Design: Retrospective observational analysis comparing mean hysteroscopies per month in the OR 6 months before and after operative hysteroscopy was introduced in clinic. Results compared using unpaired t-test. We additionally assessed the outcomes of hysteroscopies performed in clinic in the 6 months following implementation.
Setting: Gynecology clinic at a tertiary care public hospital.
Patients or Participants: All patients seen in our hysteroscopy clinic, referred through general gynecology clinics or our ancillary clinic referral system. Data was collected for 6 months following implementation of intervention.
Interventions: MyoSure hysteroscopes were obtained in clinic in September 2022. Revisions were made to clinic templates and anesthesia/sedation techniques accommodate the change. Women with suspected intrauterine pathology underwent hysteroscopy with MyoSure tissue removal device in clinic as opposed to the OR pre-intervention. For anesthesia, majority of patients were given IM ketorolac and paracervical block with a lidocaine gel coated speculum at minimum. Some patients received IM morphine and PO diazepam depending on patient and provider preference.
Measurements and Main Results: Mean OR hysteroscopies per month statistically significantly decreased from 10 pre-intervention to 4.17 post-intervention (p=0.0088). In the 6 months after implementation, 184 patients were seen and consented for clinic hysteroscopy, 176 underwent clinic hysteroscopy, of which 74 underwent hysteroscopy with Myosure. 63/74 (85.1%) underwent resection of discrete fibroid or polyp. 12/184 (6.5%) patients were referred to the OR from hysteroscopy clinic: 9 were unable to tolerate a pelvic exam, 1 could not tolerate the Myosure procedure specifically, 1 underwent perforation, and 2 were deemed unsafe to resect in clinic.
Conclusion: Offering operative hysteroscopy in clinic results in decreased OR utilization and patient appointment time commitment. Overall, operative hysteroscopy was a well-tolerated, safe, cost-effective, and expedited treatment for patients.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:24 PM

Category: Hysteroscopy

SubCategory: Fibroids

Comparison of Resection Rates Using 3 Different Hysteroscopic Devices on a Simulation Model for Myomectomy of Calcified Fibroids

Fisher JE. Obstetrics and Gynecology, Corewell Health - William Beaumont University Hospital, Royal Oak, MI*
*Corresponding author.

Study Objective: To evaluate and compare the tissue resection rates of 3 different hysteroscopic tissue removal devices using a simulation model of dense fibroid tissue in a uterine model.
Design: A 3-arm Bench Study.
Setting: Simulation lab.
Patients or Participants: Experienced hysteroscopic surgeons.
Interventions: 24 surgeons were exposed to 3 identical validated uterine and tissue simulation models and given 5 minutes to resect a new "calcified fibroid" with each of the 3 devices (a disposable, single use 4.6mm diameter resectoscopic system, a 7.25mm rigid resectoscopic system, and a 9mm rigid resectoscopic system) in accordance with FDA approved Instructions for Use. The order of the devices was randomized to reduce experience bias with the model. None of the 24 physicians were considered new users of the rigid resectoscopes; however, 70.8% were first-time single-use resectoscope users.
Measurements and Main Results: Comparing the rate of tissue resected, faster rates were achieved with the 4.6mm single-use resectoscope (0.51g/min) as compared to the 7.25mm (0.24g/min) or 9mm reusable devices (0.29g/min) achieving statistical significance (p=0.000 and p=0.000, respectively). Among the first-time users of the 4.6mm resectoscope, faster rates were noted (0.44g/min) when compared to the experienced users with the other devices, while experienced 4.6mm resectoscope users had resection rates of 0.70g/min.
Conclusion: Using a novel calcified fibroid hysteroscopic myomectomy simulation model, we showed that the single-use, 4.6mm resectoscopic system compares favorably to the larger diameter rigid resctoscopic systems with respect to rates of resection, even among first time users. In addition, this model shows great promise for simulation training of hysteroscopic myomectomy skills.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:30 PM

Category: Hysteroscopy

SubCategory: Oncology

The Correlation between Endometrial Polyp Size and the Risk for Uterine Malignancy

Nassie DI,[,1] Cohen G,[1] Matot R,[1] Bral P,[2] Elfeky A,[2] Goldchmit C,[1] Borovich A[2]. [1]Obstetrics and Gynecology, Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Israel; [2]Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: To assess the correlation between endometrial polyp size as observed during hysteroscopy and the risk for uterine malignancy.
Design: Retrospective cohort study.
Setting: Single tertiary, university affiliated, medical center.
Patients or Participants: We reviewed all hysteroscopies performed at an operating room (OR) setting between 2010-2020. During this period, 1170 operative hysteroscopies were performed due to suspected endometrial polyp. In 58 (5%) cases malignancy was diagnosed. These cases composed the study group.
Interventions: No intervention.

Measurements and Main Results: Out of the 4474 cases which were reviewed, 1170 (26%) were performed due to suspected endometrial polyp. In this general group, the risk for malignancy was 5% (58 cases). In the benign group, the median endometrial polyp size was 15mm (SD±13, range 2-65mm) in comparison to 20mm (SD±16.4, range 5-45mm) in the malignancy group. Endometrial polyps ≥15mm were more prone for malignancy (p=0.029). In the general population, two independent factors were shown to be associated with increased risk for uterine malignancy. Age with odds-ratio of 1.044 (CI 1.009-1.079) and polyp size ≥25mm with odds-ratio of 1.852 (CI 1.053-3.256).
Conclusion: In the general population, the size of endometrial polyp is an independent risk factor for uterine malignancy, especially with endometrial polyp size is equal or larger than 15mm.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:36 PM

Category: Hysteroscopy

SubCategory: Other

Hysteroscopic Treatment of Retained Products of Conception Using See and Treat Hysteroscopy without Anesthesia

Sharvit M,[,1] Treger S,[2] Sabag DN,[3] Weinberg S,[2] Hamou B,[2] Pansky M,[2] Barel O[2]. [1]Department of Obstetrics and Gynecology, Assuta Ashdod University Hospital, ASHDOD, Israel; [2]Department of Obstetrics and Gynecology, Assuta Ashdod University Hospital, Ashdod, Israel; [3]Faculty of Health Sciences, Ben Gurion University, Be'er Sheva, Israel*
*Corresponding author.

Study Objective: A clinical evaluation of office hysteroscopic treatment of retained products of conception (RPOC) without anesthesia.
Design: A retrospective cohort study.
Setting: A tertiary medical center.
Patients or Participants: Patients with suspected RPOC that underwent see and treat operative office hysteroscopy without anesthesia (SATHWA) in our outpatient clinic between April 2019 to March 2023.
Interventions: All patients had a diagnostic hysteroscopy to confirm the diagnosis. Those with RPOC completed SATHWA.
Measurements and Main Results: 185 cases of suspected RPOC were referred to our hysteroscopy clinic. Of them, 175 cases were confirmed on hysteroscopy. In 162 cases, the removal of RPOC by SATHWA was attempted, and in 154 cases, it was successfully completed (95%). In 13 cases, office operative hysteroscopy was not attempted, mostly due to pain during the diagnostic hysteroscopy.
The average size of RPOC for patients treated in the clinic was 14.7mm (range 4-49mm SD 8.7).
One hundred twenty-six cases were performed using a Truclear Elite 6mm device, and 36 cases using a mini-Bettocchi 4.2mm device. In 142 cases, the procedure was successful in the first attempt (87.6%). 107 out of 126 (84.9%) cases performed with the Truclear device resulted in complete resection of RPOC. Thirty-five cases performed with the mini-Bettocchi device were successful (97.2%). Cases performed with the Truclear device had significantly larger RPOC (16.4mm vs. 9.9mm P<0.005).
Twenty cases were unsuccessful in the first attempt, of which 12 underwent a second procedure in the clinic for completion of the procedure. The procedure was completed in 11 out of 12 of these cases (91.7%).
A hundred patients attended a repeat hysteroscopy. 16 patients required separation of adhesions or treatment of persistent RPOC that was done in the clinic, and only eight patients needed a referral for a surgical procedure under anesthesia.
Conclusion: SATHWA is feasible and highly effective for patients with RPOC.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:42 PM

Category: Hysteroscopy

SubCategory: Pelvic Pain

Methoxyflurane Analgesia for Conscious Hysteroscopy: A Double-Blind Randomised Placebo-Controlled Trial (MACH Trial)

Twidale E,[1] Neutens S,[,2] Streeton C,[3] Mudzamiri T,[4] Hunt L,[5] Dudley N[6]. [1]Northern Health, Melbourne, Australia; [2]Gynaecology, Te Whatu Ora Waikato, Hamilton, Waikato, New Zealand; [3]The Royal Women's Hospital, Melbourne, Australia; [4]Te Whatu Ora Waikato, Hamilton, New Zealand; [5]University of Waikato, Hamilton, New Zealand; [6]Gynaecology, Te Whatu Ora Waikato, Hamilton, New Zealand*
*Corresponding author.

Study Objective: To study the efficacy and safety of methoxyflurane during outpatient hysteroscopy.
Design: Single-center, prospective, randomized, double-blind, placebo-controlled study.
Setting: Outpatient hysteroscopy clinic in a tertiary hospital.
Patients or Participants: All patients undergoing an outpatient hysteroscopy (OPH) between September 2020 and September 2022 were eligible for this study. We calculated a sample size of 45 patients for each arm to gain power of 80%. 45 patients received methoxyflurane (study group) and 45 received the placebo (controls).
Interventions: Patients allocated to the treatment group received 3 ml Methoxyflurane through an inhaler during the hysteroscopy. Patients in the placebo group received a placebo inhaler.
Measurements and Main Results: Results were obtained through a questionnaire completed by the patient and the clinician. Pain was measured using Visual Analog Score (VAS). VAS was obtained prior to the hysteroscopy, during and at 15 minutes after the procedure.
The primary outcome was a mean difference in VAS prior to and during diagnostic hysteroscopy. Secondary outcomes were a mean difference in VAS prior to and during any subsequent operative procedures; mean difference in VAS prior to and at 15 minutes post-procedure; participant-reported adverse effects; clinician-reported adverse events; adjuvant nitrous oxide use and a composite of 'distress'.
During diagnostic hysteroscopy patients receiving Methoxyflurane had a mean increase in VAS of 30mm/100, whereas patients receiving placebo had a 42mm/100 increase (p=.05). Furthermore, during operative hysteroscopy patients in the study group had significantly lower mean elevations in VAS (18 mm/100) from baseline compared to the controls (33 mm/100) (p=.02). There was no significant difference in the other secondary outcomes.
Conclusion: Methoxyflurane use was associated with significantly lower pain scores at diagnostic hysteroscopy and operative hysteroscopy, and was well tolerated. Further investigation is needed to compare methoxyflurane with other forms of analgesia during OPH.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:48 PM

Category: Hysteroscopy

SubCategory: Research

Barriers to Office Hysteroscopy in MIGS Fellowship Education and Practice

Zelivianskaia A,[*,1] *Ramanathan A,*[2] *Qu A,*[3] *Robinson JK*[4]. [1]*OB/GYN, Temple University Hospital; Lewis Katz School of Medicine, Philadelphia, PA;* [2]*Obstetrics and Gynecology, MedStar Georgetown University/ Washington Hospital Center, Washington, DC;* [3]*Gynecology, Virginia Mason Medical Center, Seattle, WA;* [4]*MedStar Washington Hospital Center, Washington, DC*
*Corresponding author.

Study Objective: 1. To identify the top 3 perceived barriers to performing office hysteroscopy by MIGS faculty and fellows.
2. To identify opportunities for education on this key topic that will be most effective in fellowship training and MIGS practice.
Design: Cross-sectional survey study targeted at all AAGL-accredited FMIGS fellows, program directors, and associate program directors in February-April 2022. The survey was designed by faculty who have extensive experience in office hysteroscopy procedures. Additionally, a literature search was performed to aid with question design.
Setting: RedCap electronic survey administered through the FMIGS listserv. No additional follow-up was performed after survey completion.
Patients or Participants: The survey was sent to 60 program directors, 92 assistant program directors, and 158 fellows, including the incoming class of 2024 and the 2022 fellowship graduates.
Interventions: 15-minute RedCap survey.
Measurements and Main Results: 93 responses were received. 67% of respondents performed office hysteroscopy (OH) but 73% performed 5 procedures or less per month. The majority of participants controlled pain with NSAIDs +/- paracervical block. The most common perceived barrier to performing OH was concerns over pain management. Other commonly cited concerns were equipment costs, sterilization costs, and office staff training. 37-44% of respondents also cited lack of departmental support and insufficient clinic time, respectively, as barriers. 56% indicated they are interested in educational materials on OH.
Conclusion: Our study demonstrates general interest in, but low volume of OH amongst MIGS fellows and faculty. The most common perceived barrier was concern regarding pain management. This has been well studied in the literature and likely presents an area for greater education to improve OH utilization. We also uncovered concerns regarding systemic barriers, such as equipment costs, departmental support, and clinic structure. This is an area for further research and advocacy efforts to address barriers to OH on a system level.

ORAL SESSION 04 - Hysteroscopy
(3:15 PM — 4:15 PM), 3:54 PM

Category: Hysteroscopy

SubCategory: Fibroids

Comparing Long Term Leiomyoma Recurrence Rates after Resection Using the Hysteroscopic Morcellator Versus Bipolar Resectoscopy

Fenske BM,[*,1] *Fadadu PP,*[*,1] *Mara K,*[2] *Hopkins M,*[1] *Breitkopf D*[1]. [1]*Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Mayo Clinic, Rochester, MN;* [2]*Biomedical Statistics and Informatics, Mayo Clinic, Rochester, MN*
*Corresponding author.

Study Objective: To determine the optimal hysteroscopic myomectomy technique by comparing leiomyoma recurrence rates after morcellation versus bipolar resection.
Design: This retrospective cohort study included patients undergoing fibroid resection with the hysteroscopic morcellator (HM) or bipolar resectoscope (BR) for International Federation of Gynecology and Obstetrics (FIGO) type 0-2 leiomyomas. Subjects who underwent resection from 2005-2020 were followed over time for symptom recurrence and medical/ surgical treatments. Risk of fibroid recurrence and hysterectomy was determined by the Kaplan-Meier method.
Setting: Single academic tertiary care center.
Patients or Participants: Patients with FIGO type 0-2 leiomyomas at time of surgery were included. Those without pathology-confirmed leiomyoma or for which hysteroscopic resection was completed with an alternative method were excluded.
Interventions: HM or BR.
Measurements and Main Results: In total, 25 patients were treated with the HM and 29 with the BR. Baseline demographics including, age, BMI, race/ethnicity and obstetric history were comparable between groups; abnormal uterine bleeding (AUB) was the most common indication for the index surgery. The median fibroid size was slightly greater in the BR group, but complete resection rates were similar. Length of follow-up was variable, with a median of 10.5 years (IQR 6.9-13.3). Symptomatic fibroid recurrence occurred in 13 patients and 53.8% sought treatment. Although not statistically significant, recurrence was initially higher in the BR group at 1 year at 6.9% (HM=0%), but the cumulative incidence at 5 years (20.3% vs 17.6%) and 10 years (28.3% vs 25.9%) was greater for the HM group. The cumulative 10-year incidence of hysterectomy was similar (BR=22.6% vs HM=18.9%; p=0.84), with AUB being the most common indication.
Conclusion: There was no significant difference between long-term recurrence rates for FIGO type 0-2 leiomyomas after HM compared to BR; however, analysis of a larger cohort is required to confirm these findings.

WEDNESDAY, NOVEMBER 8, 2023

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 11:33 AM

Category: Laparoscopy

SubCategory: Laparoscopy

A Double-Blinded, Randomised, Placebo-Controlled Trial of Antibiotic Prophylaxis in Elective Nonhysterectomy Laparoscopic Surgery

Lim C,[1,] Alonso A,[2] Koh YY,[3] Roydhouse S,[4] McCormack LJ,[5] Deans R,[1] Nesbitt-Hawes E,[1] Rao A,[6] Abbott J[1]. [1]School of Clinical Medicine, University of New South Wales, Sydney, NSW, Australia; [2]School of Clinical Medicine, University of New South Wales, Kensington, NSW, Australia; [3]School of Women's and Children's Health, University of New South Wales, Sydney, NSW, Australia; [4]University of New South Wales, Sydney, NSW, Australia; [5]Gynaecology Research and Clinical Evaluation (GRACE) Group, Royal Hospital for Women, Sydney, NSW, Australia; [6]Royal Australian and New Zealand College of Obstetricians and Gynaecologists, Melbourne, VIC, Australia*
*Corresponding author.

Study Objective: Gynaecological laparoscopy is recognized as substantially advantageous compared with laparotomy for many health outcomes, including a lower risk of postoperative infection (POI) [1]. Currently, global guidelines recommend against antibiotic prophylaxis for elective, non-hysterectomy benign gynaecological laparoscopy [1, 2]. However, these guidelines are based on level C evidence, with all guidelines recognizing the lack of high-quality data to support these statements.
Design: To determine the feasibility of a fully-powered, double-blind, randomized, placebo-controlled study examining the effectiveness of antibiotic prophylaxis in preventing POI in elective non-hysterectomy laparoscopic procedures for benign gynaecological surgeries.
Patients or Participants: Women over the age of 18 undergoing elective non-hysterectomy laparoscopic procedures for benign gynaecological conditions were eligible for study participation. Participants were randomized to receive either antibiotic or placebo. Feasibility was determined by recruitment rates, compliance of drug administration and delivery, maintenance of double blinding, and follow-up rates. Infection was assessed by rate of POIs, length of hospitalization, readmission to hospital and unscheduled presentations to healthcare facilities. Dichotomous data were analyzed using Chi-square test while continuous variables were analyzed by Student's t test or Mann-Whitney U test.
Measurements and Main Results: Between February 2019 and March 2021, 170 women were approached, and 117 participants were recruited and randomized. The study demonstrated excellent feasibility for a fully-powered trial, with high recruitment (68.8%), trial drug compliance rates (95.7%) and follow-up rates (99.1%) confirmed. A non-significant lower incidence of POIs occurred in the antibiotic group (5.7%) compared with the placebo group (9.3%; p=0.44).
Conclusion: This study has demonstrated excellent feasibility for a fully-powered study. While this study is underpowered to demonstrate a clinically significant difference in infection rates, the clinical outcomes of this study are consistent with previous work in non-hysterectomy gynaecologic laparoscopy reporting infection rates of 1.3 − 2% [3]. Limitations of the study include a younger and healthier patient group who may have different recovery process from patients with multiple comorbidities, or obese women requiring antibiotic dose adjustment. These should be taken into consideration in future studies. A post-hoc calculation based on our POI rates suggest a trial powered at 80% with a type 1 error set at 5% would require 1678 participants with 839 in each group. Such a study is critical to address the evidence gap in the setting of antimicrobial stewardship and provide high-quality evidence to support recommendations relating to antibiotic prophylaxis for gynaecological laparoscopy.

1 van Eyk N, van Schalkwyk J; INFECTIOUS DISEASES COMMITTEE. Antibiotic prophylaxis in gynaecologic procedures. J Obstet Gynaecol Can. 2012;34:382−391.
2 Soper DE, Chelmow D. ACOG practice bulletin, number 195: prevention of infection after gynecologic procedures. Obstet Gynecol. 2018;131: e172−e189
3 Litta P, Sacco G, Tsiroglou D, Cosmi E, Ciavattini A. Is antibiotic prophylaxis necessary in elective laparoscopic surgery for benign gynecologic conditions? Gynecol Obstet Invest. 2010;69:136−139.

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 11:39 AM

Category: Laparoscopy

SubCategory: Tissue Containment & Extraction Technologies

Vaginal Extraction Index: A Predictive Model for Vaginal Extraction of Specimens during Minimally Invasive Hysterectomy

Hollis A,[1,] Putman J,[2] Elkattah RA,[3] Mohling S,[4] Boren T[5]. [1]University of Tennessee College of Medicine - Chattanooga, Chattanooga, TN; [2]Minimally Invasive Gynecology, The University of Oklahoma College of Medicine, Oklahoma City, OK; [3]Minimally Invasive Gynecology, OSF Healthcare, Peoria, IL; [4]Minimally Invasive Gynecology, Northwest Endometriosis and Pelvic Surgery, Portland, OR; [5]Gynecologic Oncology, University of Tennessee College of Medicine at Chattanooga, Chattanooga, TN*
*Corresponding author.

Study Objective: To validate a predictive vaginal extraction index (VEI) of uterine specimens following minimally invasive hysterectomy (MIH).
Design: Prospective cohort review of 350 MIH performed from July 2022-January 2023. A previously developed VEI demonstrated a 94.5% likelihood of vaginal extraction with score <4, with a maximum score of 10 points. In this study, VEI score was calculated preoperatively and compared to route of specimen extraction during surgery.
Setting: Tertiary care academic affiliated hospital.
Patients or Participants: Patients 18 years undergoing MIH were included. Patients were excluded if surgery converted to laparotomy or if no imaging available preoperatively.
Interventions: VEI is a predictive weighted index incorporating age with uterine dimensions. Age >50 years counts as 1 point, while length (>11 cm), height (>8 cm), and width (>6.9 cm) on transvaginal ultrasound each count for 3 points. A score of 4 suggests that alternative methods of extraction may be needed. VEI was prospectively calculated using preoperative ultrasound and compared to route of specimen extraction at time of surgery. Surgeons were blinded to the calculated score and predicted method of extraction.
Measurements and Main Results: Dichotomous predictor variables for length, height and width were calculated separately based on 75th percentile scores and combined with age in a logistic regression analysis, which was statistically significant, $\chi^2(4) = 119.77$, $p < .001$. 331 of 350 cases analyzed were predicted correctly (94.6% accuracy). Intact vaginal extraction was demonstrated in 311 cases (88.9%), while 39 cases (11.1%) required

an alternative extraction method. Sensitivity was 66.7%, specificity 96.8%, positive predictive value 72.2%, and negative predictive value 95.9%. Patient parity did not statistically impact the predictive power of the model.
Conclusion: VEI is a simple model for predicting intact vaginal extraction of uterine specimens at time of MIH. This may allow improved patient counseling and anticipation of intraoperative findings and expectations for both the surgeon and patient.

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 11:45 AM

Category: Laparoscopy

SubCategory: New Instrumentation or Technology

Prospective Cohort Study Quantifying the Effect of the Levalap 1.0™ on the Distance between the Abdominal Wall and Intra-Abdominal Víscera

Orsi F,[1] Maietttini D,[1] Bagnardi V,[2] Azziz R[3,]. [1]Department of Interventional Radiology, IRCCS Istituto Europeo di Oncologia, Milan, Italy; [2]Department of Statistics and Quantitative Methods, University of Milan-Bicocca, Milan, Italy; [3]Ob/Gyn and Medicine, University of Alabama at Birmingham, Birmingham, AL*
*Corresponding author.

Study Objective: Over 13 million laparoscopic procedures are performed globally every year. The LevaLap 1.0™ device may facilitate safe abdominal access when using the Veress needle for initial abdominal insufflation during laparoscopic surgery. We undertook this study to test the hypothesis that use of the LevaLap 1.0™ would increase the distance from the abdominal wall to underlying viscera and the retroperitoneum, including from major vessels.
Design: Prospective cohort study.
Setting: Referral center.
Patients or Participants: Eighteen patients scheduled to undergo an interventional radiology procedure under general anesthesia and muscle relaxation.
Interventions: Application of the LevaLap 1.0™ device on the umbilicus and on Palmer's point, during computerized tomography (CT) scanning.
Measurements and Main Results: Distance from the abdominal wall to the underlying bowel, and to retroperitoneal blood vessels and more distant intra-abdominal organs before and after vacuum was applied to the LevaLap 1.0™. Results indicated that the device did not significantly increase the distance from the abdominal wall to the immediate underlying bowel. Alternatively, the LevaLap 1.0™ created a significant increase in the distance between the abdominal wall at the access point and more distant intra-abdominal organs at the umbilicus and at Palmer's point (mean±SD: +3.91±2.32 cm, p=0.001, and +3.41±3.12 cm, p = 0.001, respectively). At the umbilicus the device increased the distance between the abdominal wall to the anterior wall of the vena cava by +5.32±1.22 cm (p=0.004) or the anterior wall of the aorta by 5.49± 1.40 cm (p=0.004). At Palmer's point, the device increased the distance between the anterior abdominal wall and the colon and/or small bowel by 2.13±1.81 cm (p=0.023). No adverse events were reported.
Conclusion: The LevaLap 1.0™ increased the distance between abdominal wall and major retroperitoneal blood vessels by >5 cm, promoting safer access during Veress needle insufflation when performing laparoscopic surgery.

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 11:51 AM

Category: Laparoscopy

SubCategory: Other

Analysis of Sociodemographic Factors Affecting Ambulatory Surgical Center Discharge Patterns for Endometrial Cancer Hysterectomies

Wang S, Moore C, Das K, Wu C, Chappell N. Obstetrics and Gynecology, George Washington University, Washington, DC.*
*Corresponding author.

Study Objective: There is limited data on outcomes for patients undergoing minimally invasive hysterectomies (MIH) performed for endometrial cancer at ambulatory surgery centers (ASC). Our study aims to explore the feasibility of performing MIHs for endometrial cancer in an ASC setting by utilizing same-day discharge data.
Design: The prevalence of MIH for endometrial cancer was estimated from the Nationwide Ambulatory Surgery Sample (NASS). Weighted estimates of prevalence and association between discharge status and sociodemographic factors were explored. Same-day discharge was defined as discharge on day of surgery, and delayed discharge was defined as discharge after day of surgery.
Setting: N/A.
Patients or Participants: Patients who underwent MIH for endometrial cancer between 2016-2019 were selected from the NASS database.
Interventions: MIH for endometrial cancer.
Measurements and Main Results: An estimated 95,041 MIH for endometrial cancer were performed at ASCs between 2016-2019. 91.9% (n= 87,372) resulted in same-day discharge, 1.2% (n=1,121) had delayed discharge, and 6.9% (n=6,548) had missing discharge information. 78.7% procedures (n=68,812) were performed at public hospitals. The proportion of delayed discharges were lower in private, not-for profit ASCs (0.8%, p=0.03) compared to public hospitals. Patients who had delayed discharges on average were older (69.7 vs. 62.4 years, p<.001), more likely to have co-morbid conditions including diabetes (aOR 1.48, 95% CI 1.25-1.75); overweight or obese BMIs (aOR 1.18, 95% CI 1.01-1.39), and more likely to have public insurance (aOR 1.78, 95% CI 1.40-2.25).
Conclusion: MIHs for endometrial cancer are feasible in an ASC. Optimal candidates for receipt of MIHs for endometrial cancer at an ASC are patients who are younger, have less comorbidities, lower BMI, and private insurance.

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 11:57 AM

Category: Laparoscopy

SubCategory: Pelvic Pain

The Long-Term Effect of Oophoropexy Following Ovarian Torsion

Akdam A,[1] Levin I,[2] Gil Y,[3] Michaan N,[1] Cohen A[2,]. [1]Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; [2]Gynecology, Lis Maternity Hospital, Tel Aviv Sourasky Medical Center, Affiliated to the Tel Aviv University Sackler*

faculty of Medicine, Tel Aviv, Israel; [3]*Lis Maternity Hospital, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel*
*Corresponding author.

Study Objective: To identify long term influences of oophoropexy on patient's symptoms as well as fertility outcome.
Design: Case control study.
Setting: Tertiary university-affiliated medical center.
Patients or Participants: Thirty women with recurrent ovarian torsion who underwent oophoropexy (study group) were matched with 60 women (1:2 ratio) with a single episode of ovarian torsion according to the year of the first episode of ovarian torsion.
Interventions: Laparoscopic de-torsion and oophoropexy.
Measurements and Main Results: Demographic data, clinical characteristics, surgical treatment (including ovarian fixation technique), and post-operative follow-up were analyzed and compared between the two groups between 2001-2022. The data for analysis was retrieved from medical records and a telephone survey.
The mean follow-up time from ovarian fixation in the study group was 32.2 months. There was no difference between the two groups regarding demographic characteristics. The proportion of women with exacerbated dysmenorrhea, dyspareunia and non-menstrual pelvic pain was significantly higher in women who underwent oophoropexy (46% vs. 10%, p<.001, 23.3% vs. 1.7%, p<.001, 36.7% vs. 11.7% p=.005, respectively). In a logistic regression analysis the presence of oophoropexy was shown to be an independent factor for both dysmenorrhea and non-menstrual pelvic pain (adjusted odds ratio [aOR] 7.66, 95% confidence interval [CI] 2.42−24.11, p=.001, and aOR 5.19, 95% CI 1.63−16.54, p=.005, respectively). There was no difference in the reproductive outcome of the two groups.
Conclusion: Oophoropexy may be associated with long term symptoms, such as dysmenorrhea, dyspareunia, and non-menstrual pelvic pain. A thorough discussion should be performed prior to surgery regarding future potential benefits and symptoms.

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 12:03 PM

Category: Laparoscopy

SubCategory: Research

Prediction Outcomes Including Major Complications in Patients Undergoing Laparoscopic and Open Hysterectomy for Benign Indications

Madhvani K,[1,*] *Fernandez Garcia S,*[2] *Fernandez-Felix BM,*[3] *Carpenter TT,*[4] *Zamora J,*[5] *Khan K*[6]. [1]*Queen Mary University of London, London, United Kingdom;* [2]*Clinical Biostatistics Unit, Hospital Ramon y Cajal, Madrid, Spain;* [3]*Clinical Biostatistics, Hospital Ramon Y Cajal, Madrid, Spain;* [4]*Gynaecology, University Hospitals Dorset, Poole, United Kingdom;* [5]*WHO Collaborating Centre for Womens Health, Madrid, Spain;* [6]*Faculty of Medicine, University of Granada, Granada, Spain*
*Corresponding author.

Study Objective: To develop and validate prediction models to predict the risk of major complications occurring within 28 days of open or laparoscopic hysterectomy for benign disease.
Design: Multivariable logistic regression prediction modelling using routinely collected health administrative data.
Setting: English National Health Service Hospitals from 2011 to 2018.
Patients or Participants: 68,599 women undergoing laparoscopic hysterectomy and 125,971 women undergoing abdominal hysterectomy for benign disease in England from 2011 to 2018.
Interventions: Open or laparoscopic hysterectomy for benign disease.
Measurements and Main Results: We found that major complications occurred in 4.4% (3037/68,599) of laparoscopic and 4.9% (6201/125,971) of abdominal hysterectomies. Our models showed consistent discrimination in the development cohort (laparoscopic, C-statistic 0.61 95% CI 0.60-0.62; abdominal C-statistic 0.67 95% CI 0.64-0.70) and similar or better discrimination in the validation cohort (laparoscopic C-statistic 0.67, 95% CI 0.65-0.69; abdominal C-statistic 0.67, 95% CI 0,65-0.69). Adhesions were most predictive of complications in both models (laparoscopic OR 1.92, 95% CI 1.73-2.13; abdominal OR 2.46, 95% CI 2.27-2.66). other factors predictive of complications included adenomyosis in the laparoscopic model, and Asian ethnicity and diabetes in the abdominal model. Protective factors included age and diagnoses of menstrual disorders or benign adnexal mass in both models, and fibroids in the abdominal model.
Conclusion: Personalised risk estimated from these models, which showed moderate discrimination, can inform clinical decision making and enhance pre-operative counselling for people with benign conditions who may require hysterectomy. Easy to use, free, online calculators have been developed for bedside use by clinicians and are available on www.evidencio.com:
Risk of major complications for people undergoing open hysterectomy for benign disease
Risk of major complications for people undergoing laparoscopic hysterectomy for benign disease

ORAL SESSION 05 - Laparoscopy
(11:30 AM — 12:30 PM), 12:09 PM

Category: Laparoscopy

SubCategory: Research

Measuring the Impact of Augmented Reality Surgical Training; A Kirkpatrick Level Approach.

Rawaf DL,[1,*] *El-Bahnasawi M,*[2] *Toms J,*[3] *Harris M,*[3] *Sheikh M,*[3] *Beghal G,*[3] *Ludick C,*[4] *Tenang LA,*[5] *Street E,*[5] *Jan H,*[3] *Elfituri A*[3]. [1]*Inovus Medical, NHS, London, United Kingdom;* [2]*Inovus Medical, NHS, Manchester, United Kingdom;* [3]*NHS, London, United Kingdom;* [4]*Inovus Medical, NTU, Manchester, United Kingdom;* [5]*Inovus Medical, St Helens, United Kingdom*
*Corresponding author.

Study Objective: To validate the capability of AR in surgical training.
Design: We utilised objective and subjective assessment through various prospective cohort studies, health economics evaluation and a systematic review (SR) of available literature satisfying all Kirkpatrick levels of evidence.
Setting: Within the National Health Service of the United Kingdom.
Patients or Participants: Junior surgical trainees (residents).
Interventions: Simulation training.
Measurements and Main Results: Initially an independent SR was conducted (n=26) comparing AR vs incumbent modalities (VR, box trainers, & cadaveric). We demonstrated that AR is preferred, improves procedural success and provides faster skill acquisition when compared to other modalities.

Several pilot studies were then conducted utilising the LapAR[1]. One (n=11) demonstrated through benchmarks of either appendicectomies (n=5) or vaginal vault (n=6) closures that intervening AR-based training under one hour with LapPass[2] tasks significantly improved 'completion time' by 19% and 36.9%, and 'distance travelled(m)' by 25% and 56% respectively. Another (n=6) demonstrated through 10 appendicectomy benchmarks with three intervening LapPass tasks over the course of two weeks, significant savings in 'completion time' by 55-66% and 'distance travelled' by 39-72%. Finally, another study looking at self-confidence scores pre and post-LapAR exercises indicated that a mean improvement of 3.82 (likert, p=0.018) was found across all areas.

Finally, a BMJ peer-reviewed health economics review[3] found that £79 could be saved per appendicectomy patient. Once validation of the efficiency assumptions were made using the study data, we can extrapolate and realise a potential cost saving of £455 per patient through reduced anaesthetic time and shorter inpatient stay.

Conclusion: We can now infer that AR-based laparoscopic training with the LapAR is not only preferred, but it is more effective at providing clinically translatable, and scalable cost-effective laparoscopic training as a potential new gold standard.

ORAL SESSION 05 - Laparoscopy

(11:30 AM — 12:30 PM), 12:15 PM

Category: Laparoscopy

SubCategory: Research

Impact of Minimally Invasive Gynecologic Surgery on the Management of Adnexal Masses in Pregnancy

Fin K, Muir TM, Pruszynski J, Chao L. Obstetrics & Gynecology, UT Southwestern Medical Center, Dallas, TX*

*Corresponding author.

Study Objective: There is no current consensus on the optimal approach for adnexal surgery in pregnancy. The objective of this study is to compare the surgical and obstetrical outcomes between a laparoscopic and open approach to the surgical management of adnexal masses during pregnancy.

Design: IRB-approved retrospective chart review.

Setting: Large urban county hospital in Dallas, Texas.

Patients or Participants: All pregnant patients who underwent adnexal surgery during the antepartum period between January 2015 and March 2023.

Interventions: N/A.

Measurements and Main Results: 47 patients underwent laparoscopy and 40 underwent laparotomy with similar demographics. Data was analyzed using the chi-square and Fisher's exact tests, the t-test, and the Kruskal-Wallis test. Laparoscopic adnexal surgery was performed at an earlier gestational age (16.1 vs 18.6 weeks, p=0.016) and with smaller mass size (9.7 vs 12.4 cm, p=0.024). There were no differences in operative time, intraoperative or postoperative complications between the two groups. Patients who underwent laparoscopy had decreased blood loss (10 vs 50 mL, p<0.001) and shorter length of hospital stay (0 vs 3 days, p<0.001). There were no differences in obstetrical outcomes between the two groups, including gestational age at delivery, mode of delivery, intrapartum and postpartum complications. There was an increased number of preterm deliveries in the laparotomy group compared to the laparoscopic group (32% vs 8%, p=0.017). Additionally, there was increased use of interventions in the antenatal period for preterm delivery in the laparotomy group (59% vs 11%, p<0.005).

Conclusion: Laparoscopy should be the preferred approach for the surgical management of adnexal masses in pregnancy, when feasible, as it is associated with decreased blood loss and shorter length of hospital stay. Although there are no differences in postoperative complications and obstetrical outcomes compared to laparotomy, laparoscopy may also be associated with fewer preterm deliveries after antepartum adnexal surgery.

ORAL SESSION 06 - Basic Science / Endometriosis
(11:30 AM — 12:30 PM), 11:33 AM

Category: Adenomyosis

SubCategory: Pelvic Pain

Prediction of Adenomyosis Diagnosis Based on MRI: An External Validation Study

Rees CO,[*,1] Klaassen C,[1] van de Wiel M,[1] van Boven L,[2] Nederend J,[3] Huppelschoten A,[1] van Vliet HAAM,[1] Schoot BC*[1]. [1]*Obstetrics and Gynaecology, Catharina Hospital, Eindhoven, Netherlands;* [2]*Obstetrics and Gynaecology, Medisch Spectrum Twente, Enschede, Netherlands;* [3]*Radiology, Catharina Hospital, Eindhoven, Netherlands*
*Corresponding author.

Study Objective: External validation of a multivariate prediction model for histological adenomyosis diagnosis based on MRI and clinical parameters.
Design: Single-center, observational, retrospective cohort study.
Setting: Non-academic teaching hospital in Enschede, the Netherlands.
Patients or Participants: 195 patients who underwent an MRI prior to hysterectomy for benign pathology in the participating centre between 2014 and 2022.
Interventions: The MRIs were retrospectively assessed for adenomyosis markers. The developed model was applied to the patients in this external dataset. The prediction model utilized several clinical factors and MRI factors such as mean junctional zone (JZ) thickness, JZdiff>5mm, JZ/myometrium ratio >0.40, and presence of high signal intensity (HSI) foci. The predictive performance of the model was assessed using the receiver operating characteristic (ROC) curve analysis and its calibration and discrimination were evaluated.
Measurements and Main Results: Out of 195 patients, 78 patients (40%) received a diagnosis of adenomyosis based on histopathology. The previously developed model showed good external validity in this population with an Area Under the Curve (AUC) of 0.831 (95%CI 0.761 − 0.901). As for calibration, the Hosmer-Lemeshow test did not show significant difference between the predicted and observed outcome (chi-square 4.398, p = 0.820).
Conclusion: The developed model showed good to excellent discriminative performance in this external cohort in predicting the adenomyosis diagnosis based on MRI in individual patients. Given the model's accurate performance after external validation, its implementation in daily clinical practice could be considered.

ORAL SESSION 06 - Basic Science / Endometriosis
(11:30 AM — 12:30 PM), 11:39 AM

Category: Endometriosis

SubCategory: Research

Multi-Disciplinary Endometriosis Board: Improving Detection of Die on Pre-Operative MRI

Mansour T,[*,1] Mead-Harvey C,[2] Meenal M,[3] Yano M,[4] Tan N,[4] Young S,[4] Wasson M*[5]. [1]*Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ;* [2]*Statistics, Mayo Clinic, Phoenix, AZ;* [3]*Ohio State Wexner Medical Center, Columbus, OH;* [4]*Radiology, Mayo Clinic, Phoenix, AZ;* [5]*Mayo Clinic Arizona, Phoenix, AZ*
*Corresponding author.

Study Objective: To evaluate the change in sensitivity and specificity of MRI in the diagnosis of deep infiltrating endometriosis after the implementation of a multi-disciplinary Endometriosis Board including abdominal radiologists and minimally invasive gynecologic surgeons.
Design: Prospective observational study.
Setting: Tertiary care, academic center.
Patients or Participants: 51 patients undergoing surgical management for suspected DIE by MRI were included. 25/51 charts were reviewed prior to the implementation of Endometriosis Board and 26/51 charts reviewed after implementation.
Interventions: Endometriosis board implemented in November 2020 including four abdominal radiologist attendings and fellows, 3 minimally invasive gynecologic surgery attendings and fellows. Patients with suspicion of DIE on MRI undergoing surgical management was discussed preoperatively. Intra-operative images and surgical pathology were reviewed post-operatively to determine concordance. The primary outcome was to compare the sensitivity and specificity of MRI for the diagnosis of DIE before and after the implementation of Endometriosis conference.
Measurements and Main Results: In the pre-intervention period (n=25), 21 (84%) had suspected DIE on imaging with 9 (36%) confirmed by surgery and pathology. Of the 26 charts in the post-intervention period, 18 (69.2%) had suspected DIE based on imaging with 15 (57.7%) confirmed by surgery and pathology. The overall diagnostic performance of MRI for DIE for all locations in the pre-intervention period had sensitivity of 72.73%, 95%CI (39.03, 93.98) and specificity of 7.14%, 95%CI (0.18, 33.87). In the post-intervention period, sensitivity was 86.7%, 95%CI (59.5,98.3) and specificity of 54.5%, 95%CI (23.4,83.3) p-value<0.05. Further analysis by location, specificity significantly increased in the left uterosacral (p=0.01) and rectosigmoid (p=0.009).
Conclusion: Diagnosis of DIE on MRI can have major consequences in the counseling of patients pre-operatively as well as surgical planning. Careful review of imaging pre-operatively with an integrated collaboration between radiologists and surgeons, along with intra-operative findings and pathology allows for improved detection of DIE on MRI.

ORAL SESSION 06 - Basic Science / Endometriosis
(11:30 AM — 12:30 PM), 11:45 AM

Category: Endometriosis

SubCategory: Other

Demographic Correlates of Endometriosis Diagnosis Among United States Women Aged 15-50

GiglioAyers P,[*,1] Ezike OF,[1] Foley CE,[2] Brown B*[1]. [1]*Obstetrics and Gynecology, Brown University, Women and Infants Hospital, Providence, RI;* [2]*Department of Obstetrics and Gynecology, Brown University, Women and Infants Hospital, Providence, RI*
*Corresponding author.

Study Objective: To compare demographic characteristics for women with and without a diagnosis of endometriosis.
Design: Data were collected from the National Survey of Family Growth − a publicly-available, nationally-representative sample of the United States population, administered by the Centers for Disease Control. Univariate data were reported as survey-weighted percentages and analyzed using chi-square and t-tests. Analyses accounted for complex survey design.
Setting: United States.
Patients or Participants: Interviews were conducted with 6,141 female respondents, aged 15-50, between 2017 and 2019.
Interventions: Data were collected through in-person interviews. A subset of sensitive questions was administered by computer.
Measurements and Main Results: For the 2017-2019 cycle, the NSFG response rate for female participants was 65.2%. Nationally, 5.7% reported a diagnosis of endometriosis (95% CI 4.6-6.9%). Those with endometriosis were older, with an average age of 39 (CI 38.1-39.9), compared to 31.7 (CI 31.2-32.2) among those without ($p < 0.0005$). Endometriosis diagnosis was significantly associated with race, with non-Hispanic white respondents over-represented (71.6% [CI 62.9-78.9%]), and Hispanic respondents under-represented (8.9% [CI 5.3-14.4%]) among those diagnosed with

endometriosis (p = 0.0006). We also observed a difference in diagnosis by current health insurance: the proportions of respondents with private insurance (67.1% [CI 60.8-72.8%]) or Medicare (9.6% [CI 6.0-15.0%]) were higher among those diagnosed with endometriosis, while the proportions of those with Medicaid (19.6% [CI 17.2-22.2%]) or a single-service payer (12.5% [CI 10.1-15.5%]) were higher among those without endometriosis (p = 0.001). Of those diagnosed with endometriosis, 94.5% had completed high school (CI 88.0-97.6%), compared to 83.9% of those without endometriosis (CI 81.9-85.7%, p = 0.005).

Conclusion: These disparities in endometriosis diagnosis suggest that intersecting barriers may preclude certain groups from accessing timely endometriosis care. Further studies are warranted to explore these preliminary data, to identify and address specific barriers to endometriosis diagnosis and management.

ORAL SESSION 06 - Basic
Science / Endometriosis
(11:30 AM — 12:30 PM), 11:51 AM

Category: Endometriosis

SubCategory: Laparoscopy

Immediate Versus Delayed Urinary Catheter Removal Following Non-Hysterectomy Benign Gynecological Laparoscopy: A Randomised Trial

McCormack LJ,[*,1] Song S,[2] Budden A,[3] Ma CH,[3] Nguyen K,[3] Li FG,[3] Lim C,[3] Maheux-Lacroix S,[4] Arnold A,[1] Deans R,[3] Won H,[3] Knapman B,[3] Nesbitt-Hawes E,[3] Abbott J*[3]. [1]*Gynaecology Research and Clinical Evaluation (GRACE) Group, Royal Hospital for Women, Sydney, NSW, Australia;* [2]*Gynaecology, Royal Hospital for Women, Sydney, NSW, Australia;* [3]*School of Clinical Medicine, University of New South Wales, Sydney, NSW, Australia;* [4]*CHU de Québec-Université Laval, Quebec, QC, Canada*
*Corresponding author.

Study Objective: To compare rates of urinary retention and postoperative urinary tract infection between women with immediate versus delayed removal of indwelling catheter following benign non-hysterectomy gynaecological laparoscopic surgery.
Design: This randomised clinical trial was conducted between February 2012 and December 2019, with follow-up to six weeks.
Setting: Two university-affiliated hospitals in Sydney, Australia.
Patients or Participants: Study participants were 693 women aged 18 years or over, undergoing non-hysterectomy laparoscopy for benign gynaecological conditions, excluding pelvic floor or concomitant bowel surgery.
Interventions: 355 participants were randomised to immediate removal of urinary catheter at the end of surgery, and 338 participants were randomised to delayed removal of urinary catheter the following morning.
Measurements and Main Results: The co-primary outcomes were urinary retention and urinary tract infection. Secondary outcomes included readmission, analgesia requirements, duration of hospitalization and validated bladder function questionnaires. Urinary retention was higher after immediate compared to delayed removal (8.2% Vs 4.2%); Risk Ratio 1.8 (95% CI 1.0 to 3.0, p=0.04). Although urinary tract infection was 7.2% following delayed, and 4.7% following immediate removal, the difference was not statistically significant; Risk Ratio 0.7 (95% CI 0.3 to 1.2, p=0.2). There was no difference in secondary outcomes.
Conclusion: There is an increased risk of urinary retention with immediate compared with delayed removal of urinary catheter following benign non-hysterectomy gynaecological laparoscopic surgery. The difference in urinary tract infection was not significant. There is 1 in 12 risk of recatheterisation after immediate urinary catheter removal. It is important to ensure that patients report normal voiding and emptying prior to discharge, to reduce the need for readmission for management of urinary retention.

ORAL SESSION 06 - Basic
Science / Endometriosis
(11:30 AM — 12:30 PM), 11:57 AM

Category: Natural Orifice Surgery

SubCategory: Robotics

Surgical Outcomes of Hysterectomy Via Robotic Vaginal Natural Orifice Transluminal Endoscopic Surgery Versus Robotic Single-Site Port

Thigpen B,[*,1] Connell P,[2] Erfani H,[2] Koythong T,[3] Sunkara S,[4] Guan X*[1]. [1]*Minimally Invasive Gynecology Surgery, Baylor College of Medicine, Houston, TX;* [2]*Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX;* [3]*Minimally Invasive Gynecologic Surgery, Baylor College of Medicine, Houston, TX;* [4]*Minimally Invasive Gynecological Surgery, Baylor College of Medicine, Houston, TX*
*Corresponding author.

Study Objective: To evaluate surgical outcomes for robotic-assisted vaginal natural orifice transluminal endoscopic surgery (R-VNOTES) hysterectomy versus robotic-assisted single-site port (RSSP) hysterectomy when performed for benign indications.
Design: Retrospective chart review.
Setting: An academic tertiary setting.
Patients or Participants: 404 patients underwent hysterectomy for benign indications.
Interventions: R-VNOTES hysterectomy and RSSP hysterectomy performed by a single minimally invasive gynecologic surgeon from January 2015 to August 2022.
Measurements and Main Results: The primary outcome of our study was total operative time (minutes). Secondary outcomes included estimated blood loss (mL), length of hospital stay (days), and postoperative pain score. Other intraoperative and postoperative surgical complications were also compared. 159 patients underwent R-VNOTES hysterectomy, and 269 patients underwent RSSP hysterectomy. Median length of surgery (minutes) demonstrated a statistically significant shorter operative time in the R-VNOTES hysterectomy group when compared to the RSSP hysterectomy group, (132 min versus 146 min, respectively, p = .0001). Additionally, patients in the R-VNOTES hysterectomy group experienced decreased postoperative pain levels at week 1 (6 versus 7, respectively, p = .01) and week 3 (1.5 versus 2.5, respectively, p = .01) after surgery. There were no statistically significant differences between the 2 groups when comparing length of hospital stay, estimated blood loss, and weight of the uterus. There was no difference in rates of urinary tract infection, blood transfusion, bowel injury, readmission, reoperation, conversion, deep surgical site infection, and venous thromboembolism between both groups. However, there was a higher rate of superficial SSI in the RSSP hysterectomy group (0.6% versus 4.5%, respectively, p = .03).
Conclusion: When compared to RSSP hysterectomy, R-VNOTES hysterectomy is safe and feasible, as both approaches have comparable surgical outcomes. Patients undergoing R-VNOTES hysterectomy had shorter length of surgery, decreased postoperative pain, and lower rates of superficial surgical site infections.

ORAL SESSION 06 - Basic
Science / Endometriosis
(11:30 AM — 12:30 PM), 12:03 PM

Category: Reproductive Medicine

SubCategory: Research

Sterilization Rates Following the Overturn of Roe v Wade

Elsahy D,[*,1] Oshinowo A,[2] Gnade C,[2] Ogunmuko K,[1] Picklesimer M,[3] Moss K,[4] Kasper K*[5]. [1]*Obstetrics and Gynecology, Indiana University,*

Indianapolis, IN; [2]*Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis, IN;* [3]*Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis, IN;* [4]*Biostatistics and Health Data Science, Indiana University School of Medicine, Indianapolis, IN;* [5]*OBGYN, MIGS, Indianapolis, Indianapolis, IN*
*Corresponding author.

Study Objective: To compare rates of sterilization pre and post the overturn of Roe v Wade.
Design: This is a retrospective cohort study with data collected over the span of 20 months.
Setting: A high volume academic institution.
Patients or Participants: Patients >18 years of age who opted for surgical sterilization for the 10 months prior to and following the overturn of Roe v Wade. This included laparoscopic approaches, postpartum tubal ligations and those performed at the time of cesarean section.
Interventions: None.
Measurements and Main Results: A total of 812 patients were included in the study. A cohort of 321 patients had surgical sterilization performed 8/24/21-6/24/22 and 491 performed 6/25/22-4/25/23. The mean number of sterilizations per week pre and post the overturn of Roe v Wade were compared using Wilcoxon rank sum test. Prior to the overturn, at our institution the weekly sterilization rate was 7.63 (SD 3.10, [2-16]). Following the overturn, this rate increased to 12.15 (SD 4.42, [6-22], which was a statistically significant increase ($p < 0.0001$).
Conclusion: On June 24, 2022, the Supreme Court of the United States overturned the 1973 Roe v Wade and 1992 Planned Parenthood v Casey decisions. In doing so, the right to abortion was no longer protected by the Constitution and was instead left to each state to decide. This decision has caused significant uncertainty regarding the future of reproductive health care. At our institution, there was a significant increase in the weekly number of sterilizations performed following the overturn of Roe v Wade. Further studies are needed to assess motivation for sterilization and whether fear of being unable to access contraception and/or abortion care influenced patient's decisions.

ORAL SESSION 06 - Basic Science / Endometriosis
(11:30 AM — 12:30 PM), 12:09 PM

Category: Adenomyosis

SubCategory: Research

Uterine Contractility of Adenomyosis Patients Normalises Under Hormonal Contraception Use

Rees CO,[*,1] *Thomas S,*[1] *Huang Y,*[2] *Klaassen C,*[1] *Christoforidis N,*[3] *Zizolfi B,*[4] *van Vliet HAAM,*[1] *Mischi M,*[2] *Schoot BC*[1]. [1]*Obstetrics and Gynaecology, Catharina Hospital, Eindhoven, Netherlands;* [2]*Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands;* [3]*Embryolab Fertility Center, Thessaloniki, Greece;* [4]*Public Health - School of Medicine, University of Naples Federico II, Naples, Italy*
*Corresponding author.

Study Objective: Comparison of uterine contractility (UC) in adenomyosis patients (AP) with and without hormonal contraception (HC) compared to healthy controls with HC, measured by transvaginal ultrasound (TVUS).
Design: Ongoing multi-centre prospective observational cohort study.
Setting: Outpatient clinics of participating centres.
Patients or Participants: 36 women with sonographic suspicion of adenomyosis without HC, 15 women with sonographic suspicion of adenomyosis with HC and 17 women with healthy uteri with HC were included. HC included oral combined hormonal contraception, progesterone only pill, and hormonal IUD.
Interventions: Uterine contraction frequency, amplitude, velocity, and coordination were assessed by applying a dedicated speckle tracking and strain analysis to 4-minute TVUS recordings in midsagittal section. AP with HC were compared to AP without contraception and healthy controls with HC.
Measurements and Main Results: Age, BMI, parity and uterus volume were significantly higher in the women with adenomyosis compared to the healthy controls ($p<0.05$). The adenomyosis group with contraception compared to without hormonal contraception treatment showed and lower amplitude (0.46 ± 0.02 vs. 0.60 ± 0.03, $p=0.022$) and reduced contraction coordination (0.22 ± 0.12 vs 0.28 ± 0.13, $p=0.049$) compared to the adenomyosis group without hormonal contraception treatment. There were no significant differences in UC between the adenomyosis group with HC compared to the healthy control group with hormonal contraception treatment.
Conclusion: The normalisation of UC under therapeutic use of HC compared to untreated AP, and the lack of differences in UC between AP and healthy controls with HC, confirms the therapeutic effect on adenomyotic symptoms. This presents a new therapeutic efficacy marker for adenomyosis.

ORAL SESSION 06 - Basic Science / Endometriosis
(11:30 AM — 12:30 PM), 12:15 PM

Category: Adenomyosis

SubCategory: Other

Isolated Adenomyosis - a Placental Risk?

Matot R,[*,1] *Bar-Peled U,*[2] *Danieli-Gruber S,*[2] *Geron Y,*[1] *Gilboa Y,*[2] *Nassie DI,*[3] *Borovich A,*[4] *Perlman S*[2]. [1]*Obstetrics and Gynecology, Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Israel;* [2]*Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Israel;* [3]*Obstetrics and Gynecology, Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Israel;* [4]*Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: We aimed to investigate the correlation between sonographic diagnosis of adenomyosis and placental associated obstetrical complications.
Design: A retrospective cohort of patients referred for a targeted ultrasound due to complaints associated with endometriosis/adenomyosis over 12 years (2010-2022) period. The study group comprised patients with adenomyosis sonographic features and the control group included patients with normal sonographic features. Patients diagnosed with endometriosis, uterine fibroids, uterine anomalies, and patients whose mode of conception relied on assisted reproduction technologies were excluded. All images were revised for diagnosis of adenomyosis by an ultrasound specialist. Cases were included if performed up to 5 years from the index birth. The primary outcome was a composite outcome of placental-associated adverse outcomes (preterm labor, small for gestational age fetus, hypertensive disorders of pregnancy, placental abruption, and postpartum hemorrhage).
Setting: N/A.
Patients or Participants: A total of 93 patients diagnosed with adenomyosis and 113 controls were included in the study. There were no clinically significant differences between the groups regarding patients' demographic characteristics.
Interventions: N/A.
Measurements and Main Results: The adenomyosis group had a significantly higher rate of placental-associated adverse complications than controls (28% vs. 11% $p<0.01$). Furthermore, when examining obstetrical complications separately, preterm labor (12% vs. 4.4% $p<0.05$) and hypertensive disorders of pregnancy (11% vs. 2.7% $p<0.05$) were significantly increased in the adenomyosis patients compared to controls. A higher tendency of cesarean delivery (33% vs. 22%, $p<0.072$) and placental abruption (3% vs. 0%, $p<0.09$) was also demonstrated in the research group.
Conclusion: Adenomyosis was independently significantly associated with placental-associated adverse obstetrical outcomes. Future prospective studies may establish the correlation between specific sonographic features of adenomyosis and the quality of placental function.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:03 PM

Category: Endometriosis

SubCategory: New Instrumentation or Technology

Development of Artificial Intelligence Utilizing Neural Network-Based Language Prediction Models in Early Diagnosis of Endometriosis

Khan ZR. Thumbay University Hospital, Ajman, Ajman, United Arab Emirates*
*Corresponding author.

Study Objective: Artificial Intelligence (AI) is transforming healthcare. Through machine learning, AI is getting increasingly sophisticated at doing what humans do, but more efficiently, more quickly and at a lower cost. Our objective was the development and validation of a user-friendly AI, forever breaking the barriers of diagnostic delay.
Design: Over three years, we developed an advanced multilingual AI system using GPT-3 that is capable of holding real-time consultations with patients, using complex data analytics derived from a library of more than 55,000 publications. We validated and perfected the system in an outpatient clinic.
Setting: Our advanced AI system has a female face and a voice, and this forms the user interface that the patient interacts with. 'She' can structure her interrogation during a consultation based on the responses she receives. She listens carefully and remains comprehensive and unbiased in her attitude towards a patient's ideas, concerns and expectations.
Once the patient's consultation is over, our AI is able to advise a likely diagnosis ranging from adhesions to deep endometriosis, refer the patient onwards as appropriate, for the right scan, for a Consultant review and even to associated services such as a physiotherapist or pain specialists.
Patients or Participants: Our AI system was used alongside our human consultations in specialist Endometriosis clinics in Manchester, England for its validation.
Interventions: N/A.
Measurements and Main Results: When applied in the outpatient setting, our Endometriosis AI system, is capable of mimicking a Consultant Gynaecologist's decision making with >95% congruence.
Conclusion: AI is already being used to detect diseases, such as cancer, more accurately and in their early stages. With potential utility in primary care and in open access to patients who self-refer, the embarrassing delay in time to diagnosis can be significantly reduced using our AI system. Nevertheless, a multilingual Artificially Intelligent system also has potential utility in narrowing the health gap in underdeveloped countries.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:09 PM

Category: Endometriosis

SubCategory: Research

Period Pain Is Not Normal: A Content Analysis of Endometriosis-Related Videos on the Social Media Platform Tiktok

Wu J,[1,] Greene M,[2] Bickett A,[2] Song A,[1] Swartz J[1]. [1]Obstetrics & Gynecology, Duke University Medical Center, Durham, NC; [2]Duke School of Medicine, Durham, NC*
*Corresponding author.

Study Objective: To systematically analyze endometriosis-related videos on TikTok.
Design: The web-scraping application, Apify, was utilized to automatically download and compile information on the top TikTok videos tagged #endometriosis on October 10, 2022. Two independent reviewers coded video content and demographics on a standardized form with another reviewer to arbitrate differences. Two standardized scales were used: a modified 5-point DISCERN scale to assess information quality and the Patient Education Materials Assessment Tool (PEMAT) to evaluate understandability and actionability of each video. This study was deemed IRB-exempt.
Setting: Online.
Patients or Participants: Creators of endometriosis-related videos on TikTok.
Interventions: N/A – observational study.
Measurements and Main Results: The top 100 videos about endometriosis on TikTok had a total of 301 million views and 36 million likes. The majority of videos (75%) discussed a personal experience with endometriosis and almost half (47%) highlighted experiencing chronic pain. Infertility was a common theme (24% of videos). Fifteen videos highlighted a perceived delay in diagnosis of their endometriosis by their healthcare provider and about a quarter (24%) of videos highlighted distrust in healthcare. Among videos discussing treatment, 21 videos (21%) discussed surgery with 11 videos (11%) specifically highlighting laparoscopy. Of the 10 videos discussing hormonal treatments such as oral contraceptives, all were either negative (80%, 8 videos) or ambiguous (20%, 2 videos) in tone. Video health information quality averaged 2.2 on DISCERN (median 2, range 1-4). Videos averaged 75.3% (median 71.4%, IQR 66.7-83.3%) in understandability and 10.7% (median 0, IQR 0) in actionability on PEMAT.
Conclusion: Popular #endometriosis videos on TikTok focus on defining dysmenorrhea as abnormal, demonstrating a communication gap where patients felt dismissed or undertreated. As TikTok becomes one of the most popular social media platforms in which patients are receiving information, these findings offer ways in which providers can engage patients with endometriosis including chronic pain, infertility and the spectrum of available treatments.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:15 PM

Category: Endometriosis

SubCategory: Basic Science/Education

Not Your Mother's Powder Burn Lesion: A Field Guide to "Atypical" Endometriosis Lesions

Manning CT,[1,] Koi T,[1] Kapetanakis T,[2] Mackenzie M[2]. [1]OBGYN, Beth Israel Deaconess Medical Center, Boston, MA; [2]OBGYN, Mount Auburn Hospital, Cambridge, MA*
*Corresponding author.

Study Objective: To provide the practicing gynecologic surgeon a pictorial "field guide" for identifying atypical or rare endometriosis lesions, confirmed on pathology. Secondarily, to propose standardized nomenclature for said lesions.
Design: Unblinded retrospective case series.
Setting: An academic-affiliated community teaching hospital.
Patients or Participants: Patients of a Minimally Invasive Gynecological Surgery practice who underwent laparoscopic surgery for symptoms of pelvic pain between 2018 and 2023. Participants were chosen based on intraoperative findings of lesions with an atypical appearance, which were later confirmed endometriosis on pathology.
Interventions: Laparoscopic pelvic peritonectomy and/or endometriosis excision.

Measurements and Main Results: Eighteen illustrative operative pictures showcasing atypical biopsy-proven endometriosis lesions, including examples of rare lesions like endosalpingiosis and endocervicosis, were selected. Intraoperative cases with visualized notable findings at time of surgery were recorded and flagged for follow-up. Case footage was uploaded to a shared HIPPA compliant protected cloud server. Surgical specimens were meticulously labelled regarding anatomic origin and sent separately to pathology. Operative footage was then reviewed for examples of non-classic endometriosis lesions. Those images best highlighting each of the eighteen "unusual" biopsy-proven lesions from operative footage were selected as exemplars. Authors came to a consensus regarding proposed nomenclature for lesions not previously described in the literature.
Conclusion: Here we've compiled a "field guide" to aid the practicing gynecologist in identifying atypical and rare presentations of endometriosis. In an era where complete excision and earlier surgical management are becoming more common practice, it is vital that providers be able to recognize lesions beyond the standard prototypical powder burn endometriosis. This is, to our knowledge, the first such comprehensive compilation of operative images highlighting atypical biopsy-proven disease with accompanying proposed nomenclature for novel lesions. It serves as a simple and practical resource, which highlights endometriosis in its many forms.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:21 PM

Category: Endometriosis

SubCategory: Laparoscopy

Does Specimen Weight Correlate with Surgical Complexity during Laparoscopic Excision of Endometriosis, *a Pilot Study*

Denny K,[1,] Allen S,[2] O'Brien E,[1] Lee T[3]. [1]OBGYN, UPMC Magee, Pittsburgh, PA; [2]OBGYN, UPMC Magee, Pittsburgh, PA; [3]Obstetrics, Gynecology, and Reproductive Sciences, UPMC Magee-Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: To evaluate the relationship between endometriosis specimen weight and surgical complexity.
Design: Prospective descriptive study.
Setting: Cases from the Minimally Invasive Gynecologic Surgery division of an academic institution from 2022-2023.
Patients or Participants: 26 patients undergoing isolated excision of endometriosis.
Interventions: Specimen weight was evaluated by American Association of Gynecologic Laparoscopists (AAGL) endometriosis stage, surgical and patient factors.
Measurements and Main Results: 34.6% of patients had AAGL stage I, 15.4% stage II, 15.4% stage III, and 34.6% stage IV. 50% of cases were categorized as "simple" (stage I and II), or "complex" (stage III and IV). The median of total endometriosis weight for stage I was 0.280g, stage II: 2.690g, stage III: 3.795g, and stage IV: 5.450g. The median for "simple" endometriosis was 0.670g and "complex" was 5.170g. Weight was significantly different between "simple" and "complex" groups ($p < .001$). An ROC curve suggested a cut-off weight between "simple" and "complex" endometriosis at 2g (AUC: 0.882). Weight was significantly associated with estimated blood loss (EBL) (Spearman's rho=0.694, $p<.001$), operative time (Spearman's rho=0.687, $p<.001$), and excision time (Spearman's rho=0.777, $p<.001$). The total operative time was significantly different between weights <2g vs 2g ($p=.001$) (41 vs 94min) and between "simple" vs "complex" stages ($p=.003$) (47 vs 102min).
Conclusion: Endometriosis specimen weight varied according to "simple" or "complex" staging, with a suggested weight cut-off of 2g. Markers of surgical complexity including EBL, operative time, and endometriosis excision time were associated with specimen weight. Operative time for specimens with a weight 2g, or "complex" stage was on average 45% longer than specimens <2g or "simple" stage. The planned multi-site study will enable completion of a post hoc analysis. Both stage and operative time do not characterize the complexity or adequacy of the surgical treatment performed. Our results suggest that specimen weight may be a useful marker of treatment complexity, which may support expansion of CPT coding.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:27 PM

Category: Endometriosis

SubCategory: Laparoscopy

Intraoperative Concordance of "Batwing Endometriosis" with Preoperative Imaging and Other Radiographic Findings of Advanced Disease

Fenske BM,[1,] Nwachukwu C,[2] Burnett T,[3] VanBuren W,[2] Khan Z,[4] Cope A[3]. [1]Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Mayo Clinic, Rochester, MN; [2]Diagnostic Radiology, Mayo Clinic, Rochester, MN; [3]Minimally Invasive Gynecologic Surgery, Mayo Clinic, Rochester, MN; [4]Reproductive Endocrinology and Infertility, Mayo Clinic, Rochester, MN*
*Corresponding author.

Study Objective: To assess correlation of a novel imaging descriptor referred to as Batwing endometriosis (BE) (deep infiltrating endometriosis of the uterosacral ligaments and torus uterinus) radiographically and intraoperatively. Additionally, to assess the relationship between BE and other findings of advanced disease on magnetic resonance imaging (MRI).
Design: Retrospective single arm cohort.
Setting: Academic teaching hospital.
Patients or Participants: Patients reviewed at a multidisciplinary endometriosis conference from 2018-2021 with BE on MRI (N=43) and a subgroup undergoing surgical exploration (N=29).
Interventions: Pelvic MRI with or without laparoscopic or robotic excision.
Measurements and Main Results: Of those with BE on MRI who underwent surgery, 23 had concordant BE findings intraoperatively (79.3%). In the surgical cohort, dense adhesions were identified in most (93.1%) and evidence of an obliterated posterior cul-de-sac (PCDS) in over half (69.0%). American Society for Reproductive Medicine (ASRM) staging was 3 or greater in most patients (88.5%). Patients with BE on imaging had high rates of concurrent endometriomas (81.4% in all patients; 91.4% in those without prior oophorectomy) and rectum involvement (74.4%) on MRI. Large bowel involvement (48.8%) and obliterated PCDS (34.9%) were often present although to a lesser degree. All patients with BE (on imaging and at time of surgery) and ASRM stage 4 disease (serving as a surrogate marker of advanced endometriosis intraoperatively) had additional disease markers on MRI (N=17). Most commonly patients had 2-4 additional findings on imaging. Similar findings were present when using intraoperative obliterated PCDS as a surrogate maker of advanced endometriosis (N=16).

Conclusion: Most patients with BE on MRI had concordant intraoperative findings and evidence of advanced disease at time of surgery. Recognition of BE on MRI may help identify patients with a higher disease burden and aid in surgical planning. Identification of BE is essential to ensure complete treatment and to avoid incorporation of endometriosis into the vaginal cuff closure.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:33 PM

Category: Endometriosis

SubCategory: Pelvic Pain

Understanding Tiktok as a Source of Medical Information about Endometriosis

Lehembre-Shiah E,[1,] Kronfel H,[2] Eisenberg J,[3] Naroji S,[4] Grunebaum A[3]. [1]OBGYN, Lenox Hill Hospital, Northwell Health, New York, NY; [2]Touro College of Osteopathic Medicine, New York, NY; [3]OBGYN, Lenox Hill, Northwell Health, New York, NY; [4]Pediatric and Adolescent Gynecology, Children's National Medical Center, Washington, DC*
*Corresponding author.

Study Objective: With the widespread use of TikTok, patients increasingly seek medical information on this platform before presenting for medical evaluation[3]. This study aims to systematically assess the content on TikTok pertaining to endometriosis.
Design: Using the term "endometriosis" on 2/22/23, the top 50 TikTok videos were viewed by three independent raters. General characteristics, content categories[6], and quality of the health information as determined by the DISCERN tool, were compiled. Adequate interrater reliability by weighted kappa supported use of majority rules methodology to norm reviewer results.
Setting: Online survey.
Patients or Participants: Three independent raters.
Interventions: None.
Measurements and Main Results: Of 50 videos, 72% were posted by lay people, 12% by doctors, 10% by organizations and 6% by other medical providers. Videos posted by lay people had 1.9-2.9x the views, likes, shares and comments compared to videos posted by doctors.
72% of the videos featured information about symptoms, 50% discussed management, 26% mentioned disease outcomes, 18% discussed diagnosis and 2% reported risk factors.
Videos featuring a personal vignette (72%) had 4.8x the total views (60M vs. 12M), 7x the total likes (4.5M vs. 606K), 3.4x the total shares (33M vs. 9.6M), and 6.9x the total comments (44K vs. 9K) compared to videos without. Only 1 video posted by a medical doctor featured a personal story, compared to 34 of 36 videos posted by lay people.
With regards to quality of information, content was relevant (3.0/5), and the aims and achievement of aims were considered high (3.73/5 and 3.85/5). However, sources of information were missing, content was biased, and few videos discussed possible gaps in knowledge.
Conclusion: As patients increasingly turn to social media for medical information, it is imperative for OBGYNs to have a deeper understanding of TikTok's representation of endometriosis as it is a powerful motivator of patient behavior.

ORAL SESSION 07 - Endometriosis
(2:00 PM — 3:00 PM), 2:39 PM

Category: Endometriosis

SubCategory: Basic Science/Education

Porcine Models for Rectal Shaving Training

Sarofim M, Kalantan A, Robertson JA, Cario G, Choi S, Rosen D, Chou D. Gynaecology, Sydney Womens Endosurgery Centre, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: Bowel involvement accounts for 5%-12% of the women presenting with endometriosis; with the rectum and sigmoid involved in up to 90% of all intestinal lesions. Rectal endometriosis less than 3cm can typically be managed with rectal shaving which is just as effective as disc excision and segmental bowel resection but with the lowest complications. However, it is not commonly performed as it is not a well standardised, poorly understood and thus thought to be extremely advanced and high-risk. It is not as commonly practiced as disc excision or segmental resection and thus when involving our colorectal colleagues, they prefer the more familiar procedures with which they feel more comfortable.
Design: Laparoscopic Reverse Submucosal Dissection or Sydney Shaving is a technique that employs the use of hydro-expansion of the bowel submucosa to facilitate an easier, safer and more complete rectal shaving. We explored the use of porcine models to aid in the understanding of the bowel anatomy and to aid in simulation and training. Our goal was to simulate rectal shaving in porcine models to be used for training prior to rectal shaving on patients. We used surgical skin closure glue to mimic a rectal nodule and used fresh porcine models in a wet lab on the Da-Vinci surgical system.
Setting: Teaching Centre.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: We discuss and review the rectal anatomy in detail and its similarities as well as its differences to the porcine model and discuss our results about how porcine models can be used in training. Rectal endometriosis is often an inadequately managed pathology amongst a large proportion of gynaecologists and care needs to be taken in assessment and management of patients with this condition. As such, development of new training tools; including porcine models; which mimic live patients or cadaveric specimens need to be identified, developed and enhanced.

ORAL SESSION 08 - Various
(3:15 PM — 4:15 PM), 3:18 PM

Category: Basic Science/Education

SubCategory: Research

"Be the Squeaky Wheel" - a Call to Action to Create Change in Ergonomics; The Role of OSHA and Reporting

Wong J,[1] Carey E,[2] Wright K,[3] King C,[4] Kho R,[5] King LP[,6]. [1]Oregon Health Sciences University, Portland, OR; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC; [3]Cedars Sinai Los Angeles, Los Angeles; [4]Cleveland Clinic, Cleveland, OH; [5]University of Arizona College of Medicine Phoenix, Phoenix; [6]Department of Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Brigham and Women's Hospital, Harvard School of Medicine, Boston, MA*
*Corresponding author.

Study Objective: We sought to better understand the role of the Occupational Safety and Health Administration (OSHA) in addressing surgeon injuries related to ergonomics and equipment in relation to typical employment agreements.
Design: Review of employment and compliance law as well as legal precedent related to workplace injury specific to surgeons.
Setting: N/A.
Patients or Participants: N/A.
Interventions: None.
Measurements and Main Results: OSHA regulations apply to employers, and many physicians work under independent contractor type status and/or employment at will. However, significant legal precedents exist that would likely hold hospitals accountable under OSHA regulations for ergonomic work-related injuries with a duty to mitigate. A culture exists in surgery that discourages reporting; however, the primary purpose of OSHA regulations is to encourage reporting and collection of data to support better workplace safety.
Conclusion: Work-related musculoskeletal disorders are estimated by survey data to affect 87% of general surgeons and 77% of gynecologic surgeons who perform minimally invasive surgery. Despite these high percentages, few interventions are undertaken at hospitals to prevent injury for surgeons in part due to a culture of non-reporting. Another survey found that only 20% of surgeons who sustained workplace injuries reported injuries to their institutions. The General Duty Clause of the Occupational Safety and Health Administration Act promotes the early and comprehensive reporting of employee ergonomic injuries and enforces workplace ergonomic standards; however, there still remains a lack of ergonomic injury reporting among surgeons. We propose that reporting is in the best interest of surgeons, institutions, and industry, to better capture the extent of the problem and reach solutions that promote safety and health. We hope to encourage policies that promote reporting.

ORAL SESSION 08 - Various
(3:15 PM — 4:15 PM), 3:24 PM

Category: Laparoscopy

SubCategory: Laparoscopy

Marwah's Confluence Point, Evaluating Safety of Insertion of Veress Needle Just below the Rib Cage at the Confluence of the 8th to 10th Ribs

Marwah V,[1] Kedia S,[1] Chakravarty R,[2] Gupta K,[1] Tongaria K[1]. [1]Division of Minimally Invasive Gynecology, Max Superspeciality Hospital Saket, New Delhi, India; [2]Obstetrics & Gynecology, Command Hospital, Kolkata, India*
*Corresponding author.

Study Objective: The evaluation of the safety of Marwah's Confluence point, a new point for the first blind insertion of Veress needle just below the rib cage where the 8th 9th and 10th rib meet where the chance of adhesion is minimal.
Design: Retrospective Cohort study.
Setting: N/A.
Patients or Participants: Out of total of 1887 cases operated between 1st January 2020 to 31st December 2022 at a tertiary care centre; 431 cases had previous abdominal and gynaecological surgeries or had big pelvic masses reaching above the umbilicus or had peritoneal mesh. Only exclusion criteria was the case of gross splenomegaly.
Marwah's Confluence point has been used in these cases for blind and safe veress needle entry.
Any bowel or vital organ injuries were noted.
Interventions: Veress needle entry just at the subcostal margin at the meeting point of 8th 9th and 10th rib in cases with multiple previous abdominal or pelvic surgeries, big pelvic masses particularly in patients with small abdominal volume and previous abdominal kochs.
Measurements and Main Results: No case of bowel injuries were noticed in the 431 cases where the Marwah's Confluence point was used for entry including a case of mild to moderate splenomegaly.
Conclusion: With increasing number of complex surgeries being performed laparoscopically, bony landmark of subcostal margin (Marwah's Confluence point} can be a safe entry point in cases of expected bowel adhesions (previous surgeries) and big pelvic masses.

ORAL SESSION 08 - Various
(3:15 PM — 4:15 PM), 3:30 PM

Category: Pelvic Pain

SubCategory: Laparoscopy

Predictors of Interest in Surgical Management for Chronic Pelvic Pain

Ciesielski KM, Tilea A, As-Sanie S, Till SR. Obstetrics and Gynecology, Minimally Invasive Surgery, University of Michigan, Ann Arbor, MI*
*Corresponding author.

Study Objective: To explore the association between pain characteristics and prior treatments utilized for pelvic pain with patient reported interest in surgical management of pelvic pain.
Design: Retrospective cohort study.
Setting: Academic tertiary care center.
Patients or Participants: Patients presenting to a chronic pelvic pain referral clinic.
Interventions: Pre-consultation questionnaire which includes questions regarding demographic information, pain symptoms, surgical history, current and prior treatments for pelvic pain, multiple validated self-report measures of pain, and assesses interest in various treatment modalities.
Measurements and Main Results: Of the 1,705 patients who completed the questionnaire, 608 (35.7%) expressed interest in surgery for pelvic pain and 1,097 (64.3%) were either not interested or undecided about surgery. In unadjusted analyses, interest in surgery for pelvic pain was associated with prior trials of hormonal suppression, including combined hormonal contraception (OR=1.47, 95% CI [1.19, 1.81]), oral progestins (OR=1.53, 95% CI [1.24, 1.90]), depot medroxyprogesterone acetate (OR=1.56, 95% CI [1.21, 2.01]), and depot leuprolide acetate (OR=1.44, 95% CI [1.05, 1.98]), and non-hormonal medications including NSAIDs (OR=1.80, 95% CI [1.21, 2.68]) and opioids (OR=1.70, 95% CI [1.37, 2.09]). Higher Brief Pain Inventory Severity (p <.001) and Interference (p <.001) and worse PROMIS physical function (p<.001) were associated with interest in surgery. In multivariate logistic regression, prior surgery for pelvic pain (aOR=1.70, 95% CI [1.36, 2.13]), no desire for future fertility (aOR=1.70, 95% CI [1.31, 2.21]), and description of pain trajectory as "getting worse" (aOR=2.30, 95% CI [1.65, 3.20]) were independently associated with interest in surgical management. Conversely, patients who

had previously undergone physical therapy (aOR=0.70, 95% CI [0.53, 0.93]) were less interested in surgery.
Conclusion: Patient interest in surgery for pelvic pain is likely influenced by response to prior treatment strategies, pain characteristics, and individual goals. Improved understanding of patients' motivations for surgical management, especially in those with history of prior surgery for pelvic pain, may improve perioperative counseling and patient satisfaction.

ORAL SESSION 08 - Various
(3:15 PM — 4:15 PM), 3:36 PM

Category: Laparoscopy

SubCategory: Fibroids

Effect of US FDA and Health Canada Warnings on Power Morcellation on Laparoscopic Hysterectomy for Fibroids in Canada

Chen I,[*,1] Douma R,[2] Mallick R,[3] Belland L,[4] Bougie O,[5] Evans D,[6] Maheux-Lacroix S,[7] Rattray D,[8] Robertson D,[9] Sanders A,[4] Yong P,[10] Tulandi T*[11]. [1]*Gynecology and Obstetrics, University of Ottawa, Ottawa, ON, Canada;* [2]*Canada's Drug and Health Technology Agency, Ottawa, ON, Canada;* [3]*Ottawa Hospital Research Institute, Ottawa, ON, Canada;* [4]*University of Calgary, Calgary, AB, Canada;* [5]*Queen's University, Kingston, ON, Canada;* [6]*University of Manitoba, Winnipeg, MB, Canada;* [7]*CHU de Québec-Université Laval, Quebec, QC, Canada;* [8]*University of Saskatchewan, Regina, SK, Canada;* [9]*University of Toronto, Toronto, ON, Canada;* [10]*University of British Columbia, Vancouver, BC, Canada;* [11]*McGill University, Montreal, QC, Canada*
*Corresponding author.

Study Objective: To estimate the effect of the 2014 US FDA and Health Canada warnings on power morcellation on laparoscopic hysterectomy for uterine fibroids in Canada.
Design: Retrospective interrupted time series (ITS) analysis of Canadian Institute for Health Information health administrative data.
Setting: Canada.
Patients or Participants: 96,603 patients undergoing hysterectomy for fibroids 2006/07 -2016/17.
Interventions: Hysterectomy.
Measurements and Main Results: Over the study period, proportion of hysterectomy performed by laparoscopy compared to laparotomy for uterine fibroids increased in each province ($p<0.05$ for all). However, following the 2014 warnings on power morcellation, we found a statistically significant decrease (negative change in intercept) in the proportion of laparoscopic hysterectomies of -0.05% ($p<0.0001$) and a significant negative change in slope of -0.0293 ($p<0.0001$). Specific changes to intercept and slope within each province were variable. In British Columbia, we found a decrease in proportion of laparoscopic hysterectomies of -6.88% ($p<0.0001$), and a significant positive change in slope of 0.0393 ($p=0.0264$). In Ontario, there was an increase in proportion of laparoscopic hysterectomies of 1.13% ($p=0.0119$) and a significant negative change in slope of -0.0476 ($p<0.0001$).
In Alberta and Quebec, there was no significant immediate change in proportion of laparoscopic hysterectomies; while a negative change in slope was observed in Alberta (-0.0733; $p=0.0006$) and Quebec (-0.0276; $p=0.0254$). Similarly, in Manitoba and Saskatchewan, there was no significant immediate change in proportion of laparoscopic hysterectomies, and non-significant trends towards negative change in slope was observed.
Conclusion: The 2014 US FDA and Health Canada warnings on power morcellation resulted in an overall lower proportion of hysterectomies performed for laparoscopy for uterine fibroids in Canada. However, the specific pattern of change appears to differ by province, suggesting variation in local responses to the federal warnings.

ORAL SESSION 08 - Various
(3:15 PM — 4:15 PM), 3:42 PM

Category: Basic Science/Education

SubCategory: Laparoscopy

Effect of Video-Based Coaching on Gynecologic Resident Laparoscopic Salpingectomy: A Randomized Controlled Trial

Muir TM,[*,1] Kho KA,[1] Ramirez C,[2] Donnellan NM,[3] Pruszynski J,[1] Chao L*[1]. [1]*Obstetrics & Gynecology, UT Southwestern Medical Center, Dallas, TX;* [2]*San Antonio Military Medical Center, San Antonio, TX;* [3]*Obstetrics, Gynecology and Reproductive Sciences, UPMC Magee-Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: To assess the effect of video-based coaching (VBC) on gynecology resident performance of laparoscopic salpingectomy.
Design: Randomized controlled trial.
Setting: Large academic medical center.
Patients or Participants: From October 2021 to December 2022, 28 PGY-1 and PGY-2 residents were video recorded intraoperatively performing 3 unilateral laparoscopic salpingectomies.
Interventions: 14 residents were randomized to the control group (standard gynecology curriculum) and 14 residents to the VBC intervention group (standard curriculum plus two video coaching sessions by a fellowship-trained laparoscopist). Videos were graded by 3 blinded fellowship-trained laparoscopists. Primary outcome was comparison of modified Global Operative Assessment of Laparoscopic Skills (GOALS) and Objective Structured Assessment of Laparoscopic Salpingectomy (OSA-LS) scores. Secondary outcomes were comparison of resident self-assessed and grader GOALS and OSA-LS scores for video 3 and resident self-assessed confidence scores.
Measurements and Main Results: Baseline (video 1) GOALS and OSA-LS scores were similar between the control and VBC groups ($p=0.70$, $p=0.953$). Overall, GOALS and OSA-LS scores were significantly improved in the VBC group compared to control ($p=0.008$, $p=0.018$). In the VBC group, GOALS scores significantly improved by 3.0 points from video 1 to video 2 ($p=0.049$) and by 3.2 points from video 1 to video 3 ($p=0.024$). Intervention group OSA-LS scores also increased significantly by 6.1 points from video 1 to video 3 ($p=0.016$). In the control group, GOALS and OSA-LS score increases were not significant ($p=0.194$, $p=0.518$). There was a moderate association between resident self-assessed and grader GOALS ($r=0.62$, $p<0.001$) and OSA-LS scores ($r=0.69$, $p<0.001$) for video 3, demonstrating fair resident self-assessment of their own surgical performance. VBC did not significantly reduce operating time ($p=0.10$). Residents indicated that VBC enhanced their comfort and confidence in performing laparoscopic surgery.
Conclusion: Video-based coaching improves resident performance of laparoscopic salpingectomy and can be used as an adjunct to resident surgical training.

ORAL SESSION 08 - Various
(3:15 PM — 4:15 PM), 3:48 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Laparoscopy

Pre-Operative Tamsulosin before Minimally Invasive Hysterectomy and Time to Spontaneous Void: A Randomized Controlled Trial

McCann LD,[*,1] Gabra M,[2] Hall C,[2] Shah J,[2] Miller I,[2] Masjedi A,[2] Runke S,[2] Aguirre A*[2]. [1]*OBGYN, University of Arizona College of Medicine - Phoenix, Phoenix, AZ;* [2]*University of Arizona College of Medicine - Tucson, Tucson, AZ*
*Corresponding author.

Study Objective: The primary objective of this study is to determine the efficacy of tamsulosin in decreasing the postoperative time to void in women undergoing hysterectomy for benign conditions. The secondary objective is to determine if tamsulosin decreases the time to discharge compared to placebo.

Design: The study was a double-blind, randomized controlled trial that took place at two campuses of a tertiary care hospital between June 2021 and January 2023. Approval from the institutional review board and registration on ClinicalTrials.gov were obtained prior to enrollment.

Demographics, medical and surgical history, surgical details, blood pressure, surgery start and end times, PACU discharge times, and adverse events were recorded. Randomization was performed by the hospital pharmacy and participants received one dose of tamsulosin or placebo preoperatively. All patients underwent a voiding trial before PACU discharge.

Setting: Preoperative setting and post-anesthesia care unit

Patients or Participants: Participants undergoing minimally invasive hysterectomy were screened and excluded if they had a history of bladder cancer, plan for concurrent pelvic organ prolapse surgical repair, or medical contraindications to tamsulosin. Of 150 participants, 77 received tamsulosin and 73 received placebo.

Interventions: Study participants were randomized to receive one dose of tamsulosin 0.4mg or placebo preoperatively.

Measurements and Main Results: The group that received tamsulosin as a preoperative prophylactic dose was shown to have to a decreased, although not statistically significant, time to discharge as compared to the placebo group (2.4 hours vs. 2.6 hours, respectively, p=0.40). Time to spontaneous void was not statistically different between the tamsulosin or placebo groups (1.6 hours vs. 1.4 hours, respectively, p=0.60). The urinary retention rate was similar in both groups (n=2 in each cohort).

Conclusion: The results suggest that the use of a single preoperative dose of tamsulosin does not lead to a significant decrease in postoperative time to void or time to discharge.

ORAL SESSION 08 - Various

(3:15 PM — 4:15 PM), 3:54 PM

Category: Pelvic Pain

SubCategory: Adenomyosis

Preoperative Pelvic Pain Syndromes Are a Risk Factor for Failure in Patients Undergoing Radiofrequency Endometrial Ablation

Rakes K,[*,1] *Sosa-Stanley JN,*[2] *Casey JN*[2]. [1]*OB/GYN, Virginia Tech-Carilion Clinic, Roanoke, VA;* [2]*MIGS, Virginia Tech- Carilion Clinic, Roanoke, VA*

*Corresponding author.

Study Objective: Preoperative Pelvic Pain as a Risk Factor for Failure in Patients Undergoing Endometrial Ablation.

Design: Retrospective case-control study. Canadian Task Force classification II-2.

Setting: A single large academic center.

Patients or Participants: Current Procedural Terminology (CPT) codes (58353 & 58563) were used to identify patients who underwent global radiofrequency endometrial ablation using the *Novasure* device over a 4-year time period (2012-2016). Patients included maintained follow-up within our system for a minimum of 5 years post-procedure. Patients were excluded if they had the ablation with alternative device, endometrial intraepithelial neoplasia on initial pathology, aborted procedure, or inappropriate follow-up. 302 patients met criteria and were enrolled.

Interventions: Global Radiofrequency Endometrial Ablation (*Novasure*).

Measurements and Main Results: There was an overall 21.2% failure rate (64 failures) within the 5-year follow-up period requiring subsequent surgical or hormonal management. The mean time to failure was 27.6 months. Of these, 71.8% required additional treatment due to worsening or persistent pain (with or without bleeding).

A higher proportion of patients in the treatment failure group reported clinically significant preoperative pelvic pain (p=0.0001), demonstrating a 3.1-fold risk of failure (aOR 3.1). When examining individual pain phenotypes, there was a 2.4-fold, 12.1-fold, 2.6-fold, and 4.1-fold increased risk of failure in patients with known or clinically suspected endometriosis, adenomyosis, moderate/severe dysmenorrhea, and dyspareunia, respectively (aORs, all $p<0.05$).

Additionally, younger patients, and those with higher BMIs were more likely to fail (p=0.017 & p=0.0008).

There was significant race disparity, with Black patients being 3.1 times more likely to experience failure (p=0.0002).

The study was designed using an 80% power and conducted with a 0.05 level of significance. Bivariate analysis was performed using chi-square, Fisher's exact, and t-test where appropriate.

Conclusion: Patients with clinically significant preoperative pelvic pain have a significantly higher likelihood of endometrial ablation failure, particularly those with known or suspected adenomyosis.

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AAGL ELEVATING GYNECOLOGIC SURGERY WORLDWIDE

VIDEO SESSIONS

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 11:33 AM

Category: Laparoscopy

SubCategory: Basic Science/Education

Essentials in Minimally Invasive Gynecologic Surgery (EMIGS) Skills Exam: Tips and Tricks

Pando C, Briggs M, Beran B. Medical College of Wisconsin, Milwaukee, WI*
*Corresponding author.

Study Objective: To discuss and demonstrate techniques to complete the Essentials in Minimally Invasive Gynecologic Surgery (EMIGS) tasks efficiently.
Design: Educational video.
Setting: Academic residency program.
Patients or Participants: N/A.
Interventions: Obstetrics and Gynecology resident and attending physician demonstrate techniques on the laparoscopic trainer. For Task 1, use Maryland graspers with tips curved down and a uniform pattern for both directions. This task highlights pronation and supination of the wrists as well as operating along the pelvic side wall. Task 2, elevate the top layer of the gauze with a Maryland grasper at 7 o'clock and enter the top layer. Proceed counterclockwise towards 12 o'clock, then switch hands and cut the remaining portion of the circle in the clockwise direction. This replicates dissecting the retroperitoneum. To optimize needle loading, adjust the angle of the needle until light reflects off the midportion. When this is optimized, grasp the needle 1/3 from the hub with your dominant hand. Task 3, hold the drain down while driving the needle through both marks on the drain. Keep tension while pushing down the knot and push past the knot. Task 4, face the needle towards the ground and adjust the hub to face you prior to intracorporeal knot tying. Tie a surgeon's knot first followed by two single ties in alternating directions. Task 5, hold the drain between the mark you are targeting and the next one. Use your non-dominant hand to bring the drain towards and through your needle to ensure proper exposure. This replicates closing the vaginal cuff.
Measurements and Main Results: N/A.
Conclusion: This video demonstrates techniques that individuals can utilize to successfully complete EMIGS tasks efficiently and effectively.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 11:39 AM

Category: Laparoscopy

SubCategory: Reproductive Medicine

Laparoscopic Management of Spontaneous Heterotopic Pregnancy with Abdominal Implantation and Subsequent Full-Term Vaginal Delivery

Namazi G,[,1] Carusi D,[2] Groszmann Y[3]. [1]Minimally Invasive Gynecologic Surgery, University of California Riverside, Riverside, CA; [2]Surgical Obstetrics and Placenta Abnormalities, Brigham and Women's Hospital/Harvard Medical School, Boston, MA; [3]Diagnostic Ultrasound, Diagnostic Ultrasound Assoc/Brigham and Women's Hospital/Harvard Medical School, Boston, MA*
*Corresponding author.

Study Objective: Showcasing laparoscopic management of heterotopic pregnancy with abdominal implantation.
Design: Video case presentation.
Setting: Tertiary medical center.
Patients or Participants: 37 y.o. G1P0 at 11 week 5 days by LMP presents for routine ultrasound when concerning signs of heterotopic pregnancy was noted. She is completely asymptomatic without abdominal pain or vaginal bleeding. Her past medical history was notable for hypothyroidism in the setting of papillary thyroid cancer status post thyroidectomy, and essential hypertension. She does not have history of sexually transmitted disease, smoking, or tubal surgeries.
She does not use any medications and has no surgical history. Her Rh is positive and initial hemoglobin of 11.3g/dl. Interventional radiology team consulted and notified for back up.
Interventions: Laparoscopic unilateral sapling-oophorectomy with removal of abdominal pregnancy.
Measurements and Main Results: Pathology supported secondary abdominal pregnancy. She carried the intra-uterine pregnancy to full term and at 38w3d was induced for chronic hypertension, with an uncomplicated vaginal delivery, weight 3800g, APGARS 8&9. Ectopic placental tissue regressed postpartum.
Conclusion: Heterotopic pregnancy is a potential life threatening, difficult-to-diagnose condition which can be overlooked during initial imaging after intrauterine gestation is confirmed. Systematic approach and adnexal examination is crucial after identifying intrauterine pregnancy. In cases of desired intrauterine pregnancy, surgical management is the preferred route. Laparoscopic management has been reported safe. Minimal handling of the uterus is key during the surgery.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 11:45 AM

Category: Laparoscopy

SubCategory: Other

Surgical Management of Isolated Fallopian tube Torsion in the Pediatric Population

Gallant T,[,1] King C,[2] Newark A,[3] Clay J[1]. [1]Women's Health Institute, Cleveland Clinic Foundation, Cleveland, OH; [2]Cleveland Clinic, Cleveland, OH; [3]Women's Health Institute, Cleveland Clinic Foundation, Akron, OH*
*Corresponding author.

Study Objective: Describe a rare case of isolated fallopian tube torsion and with this explain preoperative and intraoperative considerations for laparoscopy in the pediatric patient.
Design: We describe an individual case and discuss management optimization.
Setting: Surgery took place at a large academic center in an operating room adapted for a pediatric patient. The patient was set in dorsal lithotomy using pediatric stirrups with the arms tucked at the sides.

1553-4650/$ — see front matter
https://doi.org/

Patients or Participants: This is a healthy 13-year-old who presented to the emergency room with hip pain.
Interventions: Laparoscopic lysis of adhesions and left salpingectomy were performed. We were able to optimize preoperative care of the pediatric patient by undergoing proper consent, electing for the appropriate surgical location and utilizing minimally invasive imaging. We tailored intra operative care to the pediatric patient by understanding variations in anatomy, using proper patient positioning, and avoiding traumatic vaginal preparations.
Measurements and Main Results: Isolated fallopian tube torsion was identified in a pediatric patient and treated with laparoscopic lysis of adhesions and left salpingectomy.
Conclusion: Isolated fallopian tube torsion is a rare cause of pelvic pain. Given the increased incidence in the pediatric population it should remain on the differential. We show key steps in surgical management and describe ways to optimize pediatric laparoscopy.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 11:51 AM

Category: Laparoscopy

SubCategory: Oncology

Laparoscopic Inguinal Lymph Node Dissection in Vulval Cancer

Puntambekar S,[*1] Patil M,[2] Puntambekar A,[3] Puntambekar S[1]. [1]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India; [2]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, Maharashtra, India; [3]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India*
*Corresponding author.

Study Objective: Inguinal lymph node dissection in vulval cancer.
Design: Case Report.
Setting: Patient underwent 3D Laparoscopy. Patient in lithotomy position under anaesthesia. Procedure done by Experienced & Qualified team.
Patients or Participants: 55-year-old female, postmenopausal with vulval mass with right ingunal node.
Interventions: Wide local excision of vulval mass + bilateral laparoscopic inguinal lymph node dissection.
Measurements and Main Results: In Today's era, laparoscopic inguinal node dissection can be possible replacing open technique giving better outcome.
55 yrs female, postmenopausal with vulval mass with right inguinal node. Histopathology report S/o -invasive moderately differentiated squamous cell carcinoma. She underwent wide local excision of vulval mass + bilateral laparoscopic inguinal lymph node dissection, with no complications with long term follow up.
Conclusion: Laparoscopic inguinal lymph node dissection is safe, feasible technique with minimal post-op complication & morbidity in management of vulval & vaginal cancers.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 11:57 AM

Category: Laparoscopy

SubCategory: Fibroids

Simulation of Laparoscopic Myomectomy Using a Gynesim Real Tissue Model

Hudson MD, Desai VB. Medical Affairs, CooperSurgical, Trumbull, CT*
*Corresponding author.

Study Objective: The objective is to provide a brief overview of laparoscopic myomectomy and how a Gynesim Real Tissue Model can be used for simulation training.
Design: Video presentation of high fidelity-simulation training.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Laparoscopic myomectomy is a common procedure for patients who are symptomatic. Symptoms may include menorrhagia, a feeling of bulkiness, and pelvic pain. There are different methods of performing a myomectomy, through an open laparotomy or a minimally invasive approaches that include laparoscopy or robotic surgery. This video focuses on a training modality for laparoscopic myomectomy and more specifically simulation training. The Gynesim Real Tissue Model is a high-fidelity training tool that facilitates the steep learning curve for this procedure. The Gynesim Real Tissue Model incorporates customized pathology of the female pelvis, is responsive to surgical energy, and is validated for skills assessment. The Gynesim Real Tissue Model also enables practicing steps of the procedure, ergonomics with laparoscopic instruments, intracorporeal suturing, identifying key anatomical structures, depth perception, and maneuvering with limited range of motion. This video is clinically relevant because it emphasizes the benefits of simulation training to improve laparoscopic skills to perform a laparoscopic myomectomy.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 12:03PM

Category: Laparoscopy

SubCategory: Basic Science/Education

Technical Considerations for Total Laparoscopic Hysterectomy for Large Cervical Fibroid Precluding Placement of Uterine Manipulator

Covert E,[*1] Bergin K,[2] Wilson-Leedy J[3]. [1]Obstetrics and Gynecology, Albany Medical Center, Albany, NY; [2]Reproductive Endocrinology and Infertility, Mount Sinai, New York, NY; [3]Columbia Memorial Hospital, Hudson, NY*
*Corresponding author.

Study Objective: To demonstrate techniques for total laparoscopic hysterectomy (TLH) in the setting of large cervical fibroid with distorted anatomy and inability to place a uterine manipulator.
Design: Stepwise narrated demonstration of technique when performing TLH for a patient with a large cervical fibroid.
Setting: Referral center for gynecologic surgery.
Patients or Participants: A 51-year-old G1P0 with abnormal uterine bleeding, a cervical fibroid measuring 6 cm and inability to identify the cervical os.
Interventions: Given proximity of the cervical fibroid to the ureters and distortion of adjacent anatomy, the ureters were dissected out bilaterally within the retroperitoneal space using a lateral approach and could be easily visualized throughout the remainder of the case. The uterine blood supply was controlled at its origin by ligating the anterior division of the internal iliac arteries bilaterally using vascular clips. In the absence of a uterine manipulator, traction was applied directly to the uterus and cervix to allow performance of routine steps of the surgery. A sponge stick was placed in the anterior fornix to delineate the cervicovaginal junction and initiate colpotomy with ultrasonic scalpel. Applying generous cephalad traction to the cervix and cervical fibroid with a laparoscopic tenaculum, the colpotomy was completed under direct visualization. The specimen was withdrawn through the vagina and the vaginal cuff was closed.
Measurements and Main Results: Successful uncomplicated TLH with estimated blood loss of 25 mL
Conclusion: With distortion of cervical and lower uterine segment anatomy by a large fibroid, careful dissection of the course of the ureters, control of uterine blood supply at its origin, application of traction to

the uterus using laparoscopic instruments, and delineation of the cervicovaginal junction with a vaginal instrument applied at the anterior fornix facilitate safe performance of TLH.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 12:09 PM

Category: Basic Science/Education

SubCategory: Laparoscopy

Essentials in Minimally Invasive Gynecology Pro Tips

Karlson KL,[*,1] Miles S*[2]. [1]*Gynecologic Surgery and Obstetrics, Walter Reed National Military Medical Center, Bethesda, MD;* [2]*Gynecologic Surgery and Obstetrics, Mike O'Callaghan Military Medical Center, Nellis Air Force Base, NV*
*Corresponding author.

Study Objective: Video Objective: The objective of this video is to demonstrate techniques to improve technical Essentials in Minimally Invasive Gynecologic Surgery (EMIGS) skills and familiarize gynecologic trainees on EMIGS as an alternative to FLS.
Design: N/A.
Setting: This video was created using an EMIGS set placed in a laparoscopic trainer set up according to EMIGS requirements with all five tasks completed by an OB/GYN military resident who has obtained FLS certification under the mentorship of a board-certified MIGS surgeon.
Patients or Participants: N/A.
Interventions: Technical skills tips based on efficient laparoscopic practices including principles of spatial awareness, articulation, tension, coordination, and maximization of instrument and material properties.
Measurements and Main Results: N/A.
Conclusion: EMIGS is an acceptable alternative to FLS for ABOG certification and practicing skills using laparoscopic principles will increase understanding, efficiency, and success in passing assessments.

VIDEO SESSION 01 - Laparoscopy
(11:30 AM — 12:30 PM), 12:15 PM

Category: Basic Science/Education

SubCategory: Laparoscopy

Vascular Injury during Gynecologic Surgery: A Hands-on Simulation Model

Berkowitz L,[*,1] Liao C,*[*,2] Stampler K,[1] Schieler A,[1] Defilippis D,[2] Bloom A,[3] Booher M,[1] Fisher S,[4] Naqvi A,[1] Heddens E,[1] Hoffman J*[5]. [1]*OBGYN, Albert Einstein Medical Center, Philadelphia, PA;* [2]*OBGYN, Abington Hospital - Jefferson Health, Abington, PA;* [3]*Surgery, Albert Einstein Medical Center, Philadelphia, PA;* [4]*OBGYN, Abington Hospital Jefferson, Abington, PA;* [5]*Simulation, Albert Einstein Medical Center, Philadelphia, PA*
*Corresponding author.

Study Objective: The objective of our project is to create a low fidelity, hands-on model that simulates a vascular injury during gynecologic surgery. Our goal is to teach resident physicians the steps of recognizing a vascular injury and become familiar with the steps of assessing and controlling the bleed.
Design: A low-cost model made of basic supplies including nasal cannula tubing, IV tubing, red and blue plastic wrap, syringe, and red dye liquid was used to create a pelvic model. An operating room setting using a laparoscopy set up with instruments, trocars, and other accessories was also used. Each participant was assigned a role in the simulation. Our facilitators provided support as the circulating RN and as anesthesia. Each simulation followed a flow chart that allowed for standardization of the experience and required participants to recognize and correctly respond to the bleeding. Participants also completed a pre and post-simulation knowledge test and self-assessment.
Setting: N/A
Patients or Participants: ObGyn and General Surgery resident physicians participated in the simulation as a part of their educational didactics.
Interventions: N/A
Measurements and Main Results: Only 33% of the participants have observed or been involved in a vascular injury prior to participating in our simulation. 76% of participants felt that the simulation model was effective in mimicking an emergent OR scenario. 100% of participants said the simulation will help them in an actual clinical scenario. 100% of participants felt that the debriefing process was effective.
Conclusion: Our simulation is a low cost and highly replicable model that effectively teaches recognition of vascular injury and the steps of assessing and controlling the injury.

VIDEO SESSION 02 - Robotics
(11:30 AM — 12:30 PM), 11:33 AM

Category: Hysteroscopy

SubCategory: Robotics

Hysteroscopic Multiple Myomectomy: Robotic Endoscope Updates

Harvey LF,[*,1] Hendrick RB,[2] Herrell D,[3] Couget A,[4] Hooker A,[4] Anderson TL*[5]. [1]*VUMC, Nashville, TN;* [2]*Virtuoso Surgical, Nashville, TN;* [3]*Urology, VUMC, Nashville;* [4]*Virtuoso Surgical, Nashville;* [5]*Department of Obstetrics & Gynecology, Division of Minimally Invasive Gynecologic Surgery, Vanderbilt University Medical Center, Nashville, TN*
*Corresponding author.

Study Objective: To pilot the use of a robotic endoscope to perform a hysteroscopic multiple myomectomies.
Design: Laboratory feasibility study.
Setting: Uterine tissue model.
Patients or Participants: N/A.
Interventions: Multiple myomectomies using a robotic endoscope.
Measurements and Main Results: Three fibroids were successfully excised from the model.
Conclusion: Multiple hysteroscopic myomectomy via robotic endoscope in a tissue model is feasible.
This technique allows application of surgical principles of traction and counter traction and two-handed dissection, while improving surgeon ergonomics.
This device has been piloted in tissue models for hysteroscopic polypectomy, treatment of Asherman's syndrome, and embedded IUD.
Further study of this application for gynecologic indications is warranted.

VIDEO SESSION 02 - Robotics
(11:30 AM — 12:30 PM), 11:39 AM

Category: Robotics

SubCategory: Neuropelveology

Robotic Approach to Mild Endometriosis and Vascular Entrapment of the Bilateral Sciatic Nerves

*Crispi CP,Jr.** *Souza CA, Crispi CP, Joaquim CMV, Dantas TR. Instituto Crispi, Rio de Janeiro, Brazil*
*Corresponding author.

Study Objective: To demonstrate a robotic approach to endometriosis associated with vascular entrapment of the bilateral sciatic nerves in a patient with severe neurological symptoms.

Design: Stepwise demonstration of the technique with narrated video footage.
Setting: A multidisciplinary surgical management of endometriosis-related severe persistent pain symptoms after failure of conservative treatment in a patient referred to our private institution.
Patients or Participants: 33-year-old woman, with classical endometriosis-related catamenial symptoms. In addition, she complained of acyclic and atypical symptoms, with no obligatory relationship with the menses, such as bilateral gluteal pain, pain in the posterior face of the right thigh and claudication with loss of strength in the right limb. The preoperative MRI identified mild endometriosis involving the pelvic posterior compartment and no important findings concerning the pelvic nerves.
Interventions: Nerve-sparing cytoreductive surgery was performed and after removing all the endometriotic tissue, due to the intense neurological symptoms, it was decided to explore the deep lateral compartment bilaterally. On the right, it was a great compression of the superior gluteal vein on the sciatic nerve. While on the left, not only the superior gluteal vein, but also the superior gluteal artery crossed superiorly the sciatic nerve (configuring an anatomical variation of the artery). Therefore, the vascular entrapment release was performed.
Measurements and Main Results: Patient was discharged after two days, the only neurological complaint was minimal left foot paresthesia. After 3 months of follow-up, the patient reported complete improvement of neurological symptoms and returned to physical activities that she was previously unable to practice.
Conclusion: The vascular entrapment of the sacral plexus by the branches of the internal iliac vessel is a well-known cause of chronic pelvic pain. There are few reports of robotic approach to this. This video demonstrates the feasibility of nerve decompression using a robotic approach and the importance of exploring these regions during endometriosis surgery in patients with neurological symptoms.

VIDEO SESSION 02 - Robotics

(11:30 AM — 12:30 PM), 11:45 AM

Category: Robotics

SubCategory: New Instrumentation or Technology

High Complexity Robotic-Assisted Myomectomy and Endometriosis Treatment Using Intraoperative Ultrasound

Zlotnik M,[*,1] Barison GA,[1] Zlotnik E,[1] Nazareth DC,[1] Tamura M,[2] Corinti M*[3]. [1]*Hospital Israelita Albert Einstein, São Paulo, São Paulo, Brazil;* [2]*Gynecology, Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Brazil;* [3]*Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil*
*Corresponding author.

Study Objective: Demonstrate a complex robotic-assisted laparoscopy for removal of endometriosis foci and multiple myomas using ultrasound to locate them intraoperatively.
Design: Case report illustrated with a video.
Setting: Patient is placed in the semi-gynecological position, legs 80 degrees abducted in Allen stirrups. Three robotic trocars of 8 mm each were placed in the umbilical scar and flanks bilaterally. We set an additional 5 mm trocar in the right flank, for laparoscopic assistance.
Patients or Participants: A 39-year-old woman presents with cyclical pelvic pain, dyspareunia, pain to evacuate and abnormal uterine bleeding. She is nulliparous and wants to get pregnant. MRI shows an enlarged uterus with signs of adenomyosis, thickening of the paracervical spaces and uterosacral ligaments, suggesting endometriosis and finally 4 myomas, mostly intramural. The bigger one measuring 5.9cm and one of them part submucous. It also showed a polypoid image in the endometrial cavity.
Interventions: We started with hysteroscopy to remove the endometrial polyp. Then we proceeded to the robotic-assisted laparoscopic resection of pelvic endometriosis and myomectomy using intraoperative ultrasound to find all of them. At the end, to remove the specimens we used a wound retractor in the umbilicus incision.
Measurements and Main Results: We safely and efficiently treated all the lesions to restore her fertility and control her symptoms. The patient had complete resolution of the symptoms.
Conclusion: It is important to use all the available resources to treat our patient as best as it is possible. Using the ultrasound during surgery allowed us to find the last myoma and complete the treatment, no doubt safer.

VIDEO SESSION 02 - Robotics

(11:30 AM — 12:30 PM), 11:51 AM

Category: Robotics

SubCategory: Oncology

Instillation of ICG Dye into Ureters for Intra-Operative Identification during Robotic Surgery

Ortiz B,[*,1] Paracha K,[2] Russel O*[3]. [1]*Gynecologic Oncology, Catholic Health of Long Island, Port Jefferson, NY;* [2]*General Surgery, Catholic Health of Long Island, Port Jefferson, NY;* [3]*Nursing, Catholic Health of Long Island, Port Jefferson, NY*
*Corresponding author.

Study Objective: This study sought to determine the utility and efficiency of pre-procedure cystoscopy, retrograde injection of ICG dye into ureters to facilitate intra-operative identification during robotic gynecologic pelvic and oncologic surgery.
Design: Retrospective review of 25 cases of a novel procedure utilized to facilitate ureteral identification during robotic surgery. We assessed the number of ureters identified in 25 cases and compared the overall procedure time to 25 cases of comparable difficulty done prior to introducing the technique.
Setting: Hospital Operating Room.
Patients or Participants: Patients undergoing gynecologic procedures for malignancy, suspected malignancy, or complex benign conditions such as endometriosis, pelvic adhesions, uterine fibroids.
Interventions: Intra-operative cystoscopy was performed prior to robotic surgery. Ureters were serially cannulated to 10 cm with a 5 Fr Whistle Tip Catheter. Retrograde injection of ICG-dye, 2.5 mg/dL was injected into each ureter over 60 seconds to facilitate intra-operative identification of the ureter. At robotic surgery, Firefly Technique (TM) was used to identify fluorescent ureters during the surgical procedure.
Measurements and Main Results: 25 patients underwent cystoscopy prior to planned robotic surgery. 48/50 ureters were cannulated successfully. One patient had an obstructing ureteral calculus and was not injected on that side. Resistance to cannulation was encountered in a second patient, so the procedure was aborted on that side. 100% of injected ureters were identified at surgery using Firefly Technique (TM). When compared to 25 cases matched for level of difficulty, surgical time after introduction of this new technique was reduced by up to 12 minutes.
Conclusion: Pre-operative injection of ureters with ICG is a reliable, reproducible technique that facilitates intra-operative identification of ureters during complex gynecologic procedures, improving visualization, potentially reducing risk of ureteral injury. Further study is warranted to evaluate cost savings from decreased utilization and application of this technique in other surgical specialties.

VIDEO SESSION 02 - Robotics

(11:30 AM — 12:30 PM), 11:57 AM

Category: Robotics

SubCategory: Other

Expanding the Scope: The Use of Indocyanine Green in Minimally Invasive Gynecology Surgery

Ramirez Luna N,[*,1] Norton TJ,[2] Mourad J[3]. [1]Department of Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ; [2]Obstetrics and Gynecology, University of Arizona College of Medicine, Phoenix, AZ; [3]Gynecology, Banner University Medical Center - Phoenix, Phoenix, AZ*
*Corresponding author.

Study Objective: We demonstrate 4 cases that incorporate the use of Indocyanine Green (ICG) for easy detection of anatomy in benign minimally invasive gynecology surgery.
Design: Case Series in which Indocyanine Green (ICG) was used for minimally invasive surgery.
Setting: Main OR with the use of Robotic Assisted Laparoscopy Surgery.
Patients or Participants: A total of 4 patient surgical videos were used.
Interventions: Indocyanine Green (ICG) was administered to the intrauterine cavity through a chromotubation technique for myomectomy, chromotubation, and uterine niche identification. Indocyanine Green (ICG) was injected directly into the tissue in the ureters and abdominal wall endometrioma.
Measurements and Main Results: The use of Indocyanine Green (ICG) provided easier identification of anatomy which provided a better efficiency in surgery.
Conclusion: Indocyanine Green (ICG) can be a great tool to consider for some benign gynecology minimally invasive cases. To our knowledge, this is the first surgical video that incorporates the use of Indocyanine Green (ICG) for identification of an abdominal wall endometrioma.

VIDEO SESSION 02 - Robotics

(11:30 AM — 12:30 PM), 12:03 PM

Category: Robotics

SubCategory: Other

Management of Caesarean Scar Ectopic Pregnancy Via Robotic Caesarean Scar Defect Repair − a Video Presentation

Rook C, Lam A. Centre for Advanced Reproductive Endosurgery (CARE), Sydney, NSW, Australia*
*Corresponding author.

Study Objective: To demonstrate the application of robot-assisted surgery in the management of caesarean scar ectopic pregnancy.
Design: N/A.
Setting: Caesarean scar ectopic affects ~1:2000 pregnancies. Limited evidence exists to guide management, however guidelines favour a surgical approach. We demonstrate a case managed via four-port robotic approach, with a laparoscopic assistant port.
Patients or Participants: A 40yo G6P1 with a history of four early miscarriages and one term elective caesarean section was referred for management of confirmed caesarean scar ectopic pregnancy at 10 weeks of amenorrhea. Pelvic ultrasound revealed a gestational sac (MSD 19mm) within the caesarean scar niche, containing an 11mm fetal pole with no heartbeat, and with 3mm of overlying myometrium and an empty endometrial cavity. The patient had a long history of severe dysmenorrhea and cyclical bladder and bowel symptoms suggestive of endometriosis.
Interventions: The patient was consented for a robot-assisted excision of caesarean scar ectopic, caesarean scar defect repair, excision of endometriosis and hysteroscopy.
Measurements and Main Results: Widespread superficial endometriosis was diagnosed and excised intra-operatively. The lower segment was infiltrated with dilute vasopressin. The bladder was reflected and the defect exposed, with expulsion of the products of conception upon incision. The caesarean niche cavity was evacuated and a two-layer closure performed using synthetic, barbed, absorbable sutures to repair the large defect. Histopathology confirmed products of conception without dysmorphic features, and endometriosis in all excised specimens. Progress ultrasound at four months post-repair demonstrate a well-healed uterine scar with a small narrow defect. The patient reported resolution of menstrual symptoms.
Conclusion: This video demonstrates an effective surgical approach to management of caesarean scar ectopic pregnancy at early gestation, with concurrent repair of caesarean scar defect. Further research is required to study the effect of caesarean scar defect repair on future fertility and obstetric outcomes, including risk of recurrence, uterine rupture and morbidly adherent placenta.

VIDEO SESSION 02 - Robotics

(11:30 AM — 12:30 PM), 12:09 PM

Category: Robotics

SubCategory: Other

Robotic Assisted Gravid Hysterectomy for Management of Second Trimester Cesarean Scar Pregnancy

Lelea L,[*,1] Lombardi T,[1] Janco JM[2]. [1]OBGYN, Scripps Clinic, San Diego, CA; [2]Gynecology Oncology, Scripps Health, San Diego, CA*
*Corresponding author.

Study Objective: To show a robotic approach to gravid hysterectomy in second trimester cesarean scar ectopic pregnancy.
Design: Surgical video.
Setting: In the operating room the patient was placed in dorsal lithotomy position with both arms tucked. A 12 mm accessory port was placed at the left upper quadrant with four 8 mm ports placed under direct visualization.
Patients or Participants: Single patient.
Interventions: 40y/o G6P3023 at 11 weeks 4 days with history of three prior low-transverse cesarean sections presented for routine prenatal care. She underwent nuchal translucency ultrasound at 12 weeks 6 days with maternal fetal medicine (MFM), which showed suspicion of cesarean scar ectopic pregnancy with possible placenta percreta versus increta. She then underwent magnetic resonance imaging (MRI) which confirmed cesarean scar ectopic without evidence of placenta percreta. She was extensively counseled by MFM regarding expectant management versus termination of pregnancy with a gravid hysterectomy. The patient opted for termination with gravid hysterectomy. She was admitted inpatient at 14 weeks 3 days for fetal potassium chloride injection (KCl) and uterine artery embolization (UAE) prior to her scheduled procedure to prevent hemorrhage during surgery. The patient underwent robotic assisted gravid hysterectomy with use of intrauterine vasopressin to reduce risk of hemorrhage. The specimen was removed using contained manual specimen extraction.
Measurements and Main Results: Robotic assisted gravid hysterectomy was successfully completed without Intraoperative or postoperative complications. Surgical approach and technique are discussed in the surgical video. The patient had an uncomplicated postoperative recovery.
Conclusion: Robotic assisted gravid hysterectomy can be performed safely and successfully in second trimester cesarean scar ectopic pregnancies. Interventions both preoperatively and intraoperatively should be considered to reduce the risk of hemorrhage during surgery. Preoperative interventions can include fetal KCl injection as well as UAE. Intraoperatively vasopressin can be injected intrauterine to reduce the risk of hemorrhage.

VIDEO SESSION 02 - Robotics

(11:30 AM — 12:30 PM), 12:15 PM

Category: Robotics

SubCategory: Other

Robotic Hysterectomy in Cesarean Scar Ectopic with Placenta Accreta

Varma S,[1] Dad N,[2] Elfeky A,[3] To J,[3] Rivera N[4]. [1]MIGS, Maimonides Medical Centre, Brooklyn, NY; [2]Minimally invasive Gynecology Department, Maimonides Medical Centre, Brooklyn, NY; [3]Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY; [4]Obsterics and Gynecology, Maimonides Medical Centre, Brooklyn, NY*
*Corresponding author.

Study Objective: The video will illustrate hysterectomy as a treatment for second trimester cesarean scar pregnancy with placenta accrete spectrum.
Design: Patient was recruited based on her diagnosis and followed up for 8 weeks.
Setting: Patient was placed in lithotomy position with pelvic left side robot docking. Total of 5 incisions were made with assistant port in the umbilicus and two right arm setup was used.
Patients or Participants: one patient was enrolled once she was diagnosed with cesarean scar pregnancy at 14w3d with MRI diagnosing placenta accrete. She did not desire future fertility.
Interventions: Robotic total hysterectomy with bilateral salpingectomy with fetus insets was performed.
Measurements and Main Results: Pathology consistent with placenta accreta/increta invading lower myometrium segment. She did well at 2 and 6 weeks follow up.
Conclusion: Robotic hysterectomy in second-trimester cesarean scar can be safely performed by taking uterine vessels high and close to the uterus while visualizing the course of the ureter. Retrograde bladder filling aids with bladder dissection.

VIDEO SESSION 03 - Endometriosis

(2:00 PM — 3:00 PM), 2:03 PM

Category: Endometriosis

SubCategory: Laparoscopy

Complex Bladder Endometriosis with Ureteral Obstruction: Tenets of Surgical Management

Lee EM,[1] Lee T[2]. [1]Obstetrics, Gynecology, and Reproductive Sciences, UPMC-Magee Womens Hospital, Pittsburgh, PA; [2]Obstetrics, Gynecology, and Reproductive Sciences, UPMC Magee-Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: To review a case presentation of a patient with a large endometriotic nodule invading the bladder and left ureter requiring surgical management.
Design: Narrated video reviewing the surgical steps necessary to excise a large endometriotic nodule affecting both the bladder and ureter. This video highlights techniques and relevant anatomy involved in removing a segment of bladder and ureter, as well as the steps of ureteroneocystostomy.
Setting: Tertiary academic hospital.
Patients or Participants: 30-year-old G1P0010 who initially presented to the emergency department with left lower quadrant pain and was found to have left hydronephrosis and an MRI showing a large nodule invading the bladder.
Interventions: The patient underwent excision of endometriosis with removal of the affected portion of bladder and ureter. The bladder was then repaired, and the ureter reimplanted into the bladder.
Measurements and Main Results: The procedure was completed without complication. The pathology confirmed endometriosis.
Conclusion: In this video, we review the surgical management of a complicated case of deep infiltrating endometriosis affecting both the bladder and ureter. We highlight key principles to successful excision including awareness of key anatomic structures, strategies to decrease tension between the bladder and ureter, and the steps to complete bladder repair with ureteral reimplantation laparoscopically.

VIDEO SESSION 03 - Endometriosis

(2:00 PM — 3:00 PM), 2:09 PM

Category: Endometriosis

SubCategory: New Instrumentation or Technology

From Imaging to Visualization: Seeing the Future of Endometriosis Care

Warshafsky C,[1] Flaxman TE,[2] Duigenan S,[3] Singh SS[1]. [1]Obstetrics & Gynecology, University of Ottawa, Ottawa, ON, Canada; [2]Ottawa Hospital Research Institute, Ottawa, ON, Canada; [3]Radiology, University of Ottawa, Ottawa, ON, Canada*
*Corresponding author.

Study Objective: To describe how the knowledge from standard imaging practices can be translated into advanced three-dimensional visualization techniques and utilized in the surgical planning and management of endometriosis.
Design: Case studies.
Setting: Tertiary care academic centre.
Patients or Participants: Two cases of patients with endometriosis are described.
Interventions: Transvaginal ultrasound, magnetic resonance imaging, three-dimensional printing, and three-dimensional virtual reality modeling were utilized during patient workup and preparation. Surgical management for endometriosis was performed.
Measurements and Main Results: Three-dimensional printing and virtual reality modeling contributed to improved patient understanding and experience. These modalities helped medical learners better understand standard imaging techniques and its translation to pelvic anatomy. Last, these novel techniques helped surgeons better comprehend the relationship between the pelvic structures, allowing for enhanced surgical planning and intraoperative decision making.
Conclusion: Visualization techniques including three-dimensional printing and virtual reality modeling are a novel adjunct to standard imaging modalities. These techniques are beneficial in terms of patient understanding, teaching, surgical planning, and intraoperative management. Further study is being performed to quantify these effects.

VIDEO SESSION 03 - Endometriosis

(2:00 PM — 3:00 PM), 2:15 PM

Category: Endometriosis

SubCategory: Laparoscopy

Clinical Features of and Minimally Invasive Surgery for Bladder Endometriosis: A Series of 24 Cases

Sakate S, Ochi Y, Andou M. Kurashiki Medical Center, Kurashiki, Japan*
*Corresponding author.

Study Objective: To present and discuss clinical features and minimally invasive surgery for bladder endometriosis (BE).
Design: Retrospective cohort study.
Setting: Gynecology and Obstetrics department of a general hospital.
Patients or Participants: All patients who underwent excision of BE by combined laparoscopic and cystoscopic surgery (CLCS).
Interventions: In the 10 years from January 2012, 24 patients underwent CLCS for BE.

Measurements and Main Results: A total of 24 patients (median age 38.0) presented with BE. All cases underwent MRI and cystoscopy, preoperatively. All BE lesions were located at the posterior wall of the bladder, 15 cases were at the median of the bladder, 7 cases at the left side and 3 cases at the right side. The median length of the BE legions measured by MRI was 3.1cm. The orientation between the margin of the nodule and ureteral orifice was identified for setting of the precise dissection line through the cooperation of laparoscopy and cystoscopy. The nodule was resected using a monopolar hook. To maintain tension on the bladder wall during resection, the bladder mucosa was not cut in the first step of the circumferential incision in the detrusor muscle around the nodule. The bladder mucosa was cut and the nodule was removed in the second step. The defect of the bladder was reapproximated in a two-layer and water-tight closure was performed using a continuous 3-0 absorbable suture. Other intraperitoneal regions of endometriosis were removed laparoscopically in cases where this was found, while 8 cases had endometriosis in the bladder alone. There was no case of serious complications and all the symptoms of bladder pain were resolved.
Conclusion: Minimally invasive surgery for BE should address over resection of the bladder and complete removal of lesions. CLCS is safe and feasible for cases of BE.

VIDEO SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:21 PM

Category: Endometriosis

SubCategory: Robotics

Double Discoid Excision with Connell Closure & ICG Dye Assessment of Perfusion

Nguyen AD, Galaviz VD, Sticco PL, Downing KT. OBGYN, Good Samaritan University Hospital, West Islip, NY*
*Corresponding author.

Study Objective: To demonstrate surgical technique of two discoid resections in close proximity, the Connell suture closure, and use of ICG to assess perfusion of the omental flap and bowel.
Design: Video presentation of surgical technique.
Setting: This surgery was performed in a community hospital. The patient was placed in Trendelenburg, dorsal lithotomy position and the robot was docked from the patient's left side.
Patients or Participants: 38yo with deep-infiltrative endometriosis involving the posterior uterus and rectosigmoid, seen on MRI.
Interventions: The patient underwent both wide-lumen full-thickness and partial-thickness discoid resections in close proximity. In addition, she also underwent a total robotic hysterectomy, bilateral salpingectomy, excision of endometriosis, appendectomy, cystoscopy. This required extensive adhesiolysis, bowel mobilization, and dissection of the retrorectal space. Full-thickness and partial-thickness resections and Connell suture closure are demonstrated along with creation of an omental flap. Flexible sigmoidoscopy is performed to investigate possible bowel endometriotic lesions and assess bowel repairs. ICG dye is used to assess perfusion of the bowel and omental flap.
Measurements and Main Results: The patient did well and was discharged on post-op day 1. At her post-op visit, she had complete resolutions of her symptoms.
Conclusion: Discoid resections can be a safe alternative to low anterior resection with improved functional outcomes, decreased risk of postoperative complications, and equal symptom control in select cases. Adequate dissection and evaluation must be performed to determine the feasibility of a discoid resection. Connell closure is an effective technique for closing wide-lumen full-thickness resections and prevent leaking. ICG dye can be used to assess adequate perfusion of the omental flap and bowel.

VIDEO SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:27 PM

Category: Endometriosis

SubCategory: Laparoscopy

Transvaginal Natural Orifice Specimen Extraction (NOSE): 10-Step Approach for Laparoscopic Excision of Deep Rectosigmoid Endometriosis

Mangeshikar A,[1] Youssef Y,[2] Sheth H,[3] Mangeshikar P,[1] Moawad G[4]. [1]Department of Obstetrics and Gynecology, Saifee Hospital, Mumbai, India; [2]Obstetrics and Gynecology, Hurley Medical Center/ Michigan State University, Flint, MI; [3]Department of Minimally Invasive Surgical Sciences, Saifee Hospital, Mumbai, India; [4]Department of Obstetrics and Gynecology, George Washington University, Washington, DC*
*Corresponding author.

Study Objective: A surgical tutorial presenting a 10-step systematic approach for transvaginal natural orifice specimen extraction (NOSE) approach in cases of deep endometriosis of the rectosigmoid.
Design: A step-by-step surgical video.
Setting: Tertiary referral endometriosis center.
Patients or Participants: One patient.
Interventions: An MRI revealed a rectosigmoid nodule measuring 6 × 3.5 cm approximately 12cm from the anal verge. Conventional laparoscopy was performed and the rectosigmoid was dissected along the posterior, lateral, and anterior borders. Linear staplers are used to transect the diseased bowel segment. After performing hysterectomy, adequate bowel mobilization is ensured to allow pulling the colon vaginally to introduce the anvil. An end-to-end anastomosis (EEA) circular stapler used to perform a side to end anastomosis and a water leak test is performed to confirm the integrity of anastomosis. The postoperative period was uneventful, and the patient was discharged on post operative day five.
Measurements and Main Results: Uncomplicated postoperative recovery.
Conclusion: In patients requiring hysterectomy, segmental resection through a transvaginal (NOSE) approach is safe and feasible. In this tutorial we describe a reproducible 10-step approach that can be used by surgeons to perform this technique.

VIDEO SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:33 PM

Category: Endometriosis

SubCategory: Laparoscopy

Approach to Excision of Superficial Endometriosis Using Avascular Spaces

Briggs M, Beran B. Medical College of Wisconsin, Milwaukee, WI*
*Corresponding author.

Study Objective: This video demonstrates surgical approaches to the excision of superficial endometriosis utilizing the avascular spaces of the pelvis.
Design: Case report.
Setting: Academic hospital.
Patients or Participants: One patient with superficial endometriosis in the bilateral pelvic side walls and posterior cul-de-sac.
Interventions: Excision of endometriosis was completed using specific techniques to ensure complete resection of endometriosis while maintaining important surrounding anatomical structures. Techniques included 1) identifying the endometriosis lesions and surrounding anatomy, 2) planning a surgical approach, 3) incising the peritoneum in appropriate locations, 4) utilizing avascular spaces (pararectal, paravesical, and rectovaginal) to dissect the area of disease from the underlying tissue and anatomical structures.

Measurements and Main Results: Laparoscopic excision of endometriosis was completed without unintended injury to surrounding structures.
Conclusion: This video demonstrates surgical techniques including four key steps that can be utilized during excision of superficial endometriosis.

VIDEO SESSION 03 - Endometriosis
(2:00 PM — 3:00 PM), 2:39 PM

Category: Endometriosis

SubCategory: Fibroids

Complex Case of Bilateral Endometriomas and Uterine Fibroids in a Patient with Advanced Endometriosis

Alzamora MC,[*1] *Casas Diaz O,*[2] *Robinson JK*[3]. [1]*Obstetrics and Gynecology, MedStar Washington Hospital Center, Washington, DC;* [2]*Obstetrics and Gynecology, MedStar Washington Hospital Center, Washington, DC;* [3]*MIGS, MedStar Washington Hospital Center, Washington, DC*
*Corresponding author.

Study Objective: to demonstrate a step-wise approach for a complex case of bilateral endometrioma removal, endometriosis excision and uterine myomectomy in a patient with stage 4 endometriosis, to review methods for minimizing blood loss during laparoscopic myomectomy and to review different surgical tips and tricks for approaching similar complex cases.
Design: Video.
Setting: Hospital Operating Room.
Patients or Participants: 26yo G0 with pelvic pain and abnormal uterine bleeding who was found to have an enlarged fibroid uterus and bilateral endometriomas.
Interventions: Laparoscopic excision of bilateral ovarian endometriomas, myomectomy and endometriosis excision was performed.
Measurements and Main Results: Endometrioma excision was performed first, using different surgical techniques to minimize compromise of ovarian cortex and performing a purse-string suture for hemostasis and to restore ovarian anatomy. Pexy of the ovaries was performed to optimize visualization of the pelvis. Cytotec and laparoscopic bulldog clamps were placed to minimize blood loss during myomectomy. Endometriosis excision was achieved after lysis of adhesions and identification of pelvic anatomy.
Conclusion: When faced with a complex case, a sequential approach optimizes excision of all pelvic disease. Beginning the case with endometrioma excision and pexy of the ovaries allows for better visualization of the pelvis. The use of different techniques like preoperative cytotec administration, vascular clamps and vasopressin can help minimize blood loss.

VIDEO SESSION 04 - Laparoscopy
(2:00 PM — 3:00 PM), 2:03 PM

Category: Laparoscopy

SubCategory: Oncology

Approach to Total Laparoscopic Hysterectomy and Longitudinal Vaginal Septum Resection in a Uterus Bicornuate, Bicollis

Crihfield EG, Alviar D. Obstetrics & Gynecology, Zucker School of Medicine at Hofstra/Northwell, Bay Shore, NY*
*Corresponding author.

Study Objective: To review the literature regarding uterine anomalies, their associated anomalies and classifications, and surgical techniques used in hysterectomy involving uterine anomalies, and to present a case of a uterus bicornuate, bicollis, with longitudinal vaginal septum, demonstrating surgical technique involved in performing a total laparoscopic hysterectomy and excision of the vaginal septum.
Design: Case report with surgical videos.
Setting: Tertiary care hospital.
Patients or Participants: One patient.
Interventions: Patient was a 58 y/o postmenopausal G3P3 with history of lynch syndrome, uterus bicornuate, bicollis, and longitudinal vaginal septum who presented with postmenopausal bleeding. History was also significant for 3 cesarean deliveries. Exam revealed a longitudinal vaginal septum with two cervices and blood at the external os of the right cervix. Hysteroscopy, D&C was performed and revealed two separate uterine cavities. Endometrial sampling pathology was benign. TLH-BSO was recommended for malignancy risk reduction given her Lynch syndrome. Hysterectomy and longitudinal vaginal septum excision was accomplished via dissection of pelvic side walls to map out ureters and uterine arteries given potential for anatomic variations, securing uterine arteries at their origin, retrograde filling the bladder to better visualize its borders, using a sponge stick to outline vaginal fornixes given inability to place a manipulator, and lastly, identification of the vaginal septum during colpotomy, beginning the transection laparoscopically, and completing it vaginally.
Measurements and Main Results: TLH-BSO and excision of longitudinal vaginal septum was completed without complication and patient recovered well with normal vaginal cuff and normal single vagina. Surgical techniques are reviewed in the surgical video.
Conclusion: Uterine anomalies result in anatomic variations, posing surgical challenges, but TLH is still feasible with familiarity of pelvic spaces, mapping side wall anatomy, outlining of all vaginal fornixes for colpotomy, and ligation of vaginal septum both laparoscopically and vaginally.

VIDEO SESSION 04 - Laparoscopy
(2:00 PM — 3:00 PM), 2:09 PM

Category: Laparoscopy

SubCategory: Oncology

Laparoscopic Assisted Pregnancy Termination at 14 Weeks in Patient with Obstructing Cervical Cancer

Zeccola A,[1,*] *Kao M,*[2] *Thomas K,*[2] *Uhm S,*[2] *Chen B,*[2] *Guido R*[3]. [1]*Minimally Invasive Gynecologic Surgery, UPMC Magee-Womens Hospital, Pittsburgh, PA;* [2]*Complex Family Planning, UPMC Magee Womens Hospital, Pittsburgh, PA;* [3]*Obstetrics, Gynecology and Reproductive Sciences, UPMC Magee Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: To review multidisciplinary preoperative considerations and demonstrate a novel operative technique in the case of a laparoscopic assisted suction curettage for pregnancy termination in a patient 14 weeks pregnant with an obstructing cervical cancer.
Design: Surgical video – case report.
Setting: N/A.
Patients or Participants: A unique case of laparoscopic assisted pregnancy termination.
Interventions: Thorough preoperative planning and subsequent laparoscopic assisted suction curettage for pregnancy termination in a patient with stage IIIC1 cervical cancer.
Measurements and Main Results: We present our approach to laparoscopic assisted suction curettage for pregnancy termination in order to expedite cancer treatment in a patient with a newly diagnosed stage IIIC1 cervical cancer. Her friable obstructing cervical mass precluded the usual approach of cervical dilation and subsequent uterine evacuation or medical termination of pregnancy. We review our multidisciplinary case management, preoperative considerations, and our surgical approach to this unique case. Performing the procedure laparoscopically – through a smaller hysterotomy and via a minimally invasive approach – resulted in an expedited treatment of her cancer by several weeks, and she has had a promising treatment response to date.
Conclusion: In conclusion, we presented a complex case of a woman with a new obstructing cervical cancer diagnosed in early pregnancy.

Multidisciplinary team management and creative problem solving allowed us to perform a laparoscopic, ultrasound guided uterine evacuation to terminate the pregnancy allowing for expedited cancer treatment.

VIDEO SESSION 04 - Laparoscopy

(2:00 PM — 3:00 PM), 2:15 PM

Category: Laparoscopy

SubCategory: Reproductive Medicine

Interstitial Ectopic Pregnancy: Laparoscopic Cornuostomy

Elsherbiny M,[1,] Ma K,[2] Lim ET[1]. [1]Manchester Foundation Trust, Manchester, United Kingdom; [2]Gynaecology, Manchester Foundation Trust, Manchester, United Kingdom*
*Corresponding author.

Study Objective: To demonstrate and discuss the technique of cornuostomy for surgical management of interstitial ectopic pregnancy.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Tertiary referral centre in Manchester, United Kingdom.
Patients or Participants: Patient undergoing laparoscopic cornuostomy for interstitial ectopic pregnancy.
Interventions: Interstitial ectopic pregnancies are rare but are associated with a higher mortality rate compared to other ectopic pregnancies. It occurs when the fertilised embryo implants in the interstitial portion of the fallopian tube traversing the vascularised myometrium. A 22-year-old Gravida 4 woman presented at 7 weeks gestation with right iliac fossa pain. Initial serum HCG was 18136 iu/l. Transvaginal ultrasound scan showed an empty endometrial cavity and an echogenic 'donut' shaped mass within the right interstitial space, within the uterine serosa but outside the endometrial cavity. At laparoscopy the diagnosis of a right interstitial ectopic pregnancy was confirmed. Vasopressin 20IU diluted in 80ml of normal saline was injected around the base of the ectopic pregnancy. Monopolar diathermy was used to incise the overlying serosa followed by hydro-dissection to separate the ectopic gestational sac from the myometrial attachment. The resulting defect was inspected and closed in 2 layers.
Measurements and Main Results: Total operating time was 46 minutes, the blood loss was 100ml and the patient was discharged on day 1 post-operatively.
Conclusion: While there is no clear evidence to guide the management of all interstitial ectopic pregnancies an individualised approach taking into account the woman's previous history and future fertility plans and wishes is essential. In this case given the woman's previous contralateral salpingectomy and her wishes for a conservative approach a laparoscopic cornuostomy was likely the best option.

VIDEO SESSION 04 - Laparoscopy

(2:00 PM — 3:00 PM), 2:21 PM

Category: Laparoscopy

SubCategory: Basic Science/Education

Advanced Pelvic Anatomy and Dissection Techniques

Kwon CS,[1,] Kim J,[2] Abelson JS,[3] McClurg A,[1] Silverstein RG,[1] Abu-Alnadi N Dasouki[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Lahey Hospital & Medical Center, Burlington, MA; [3]Department of Colon & Rectal Surgery, Beth Israel Lahey Health, Burlington, MA*
*Corresponding author.

Study Objective: To review the structural anatomy and procedural pearls in four key but less utilized surgical spaces for gynecologists, including the right and left paracolic gutters, presacral space, and rectovaginal space.
Design: Video demonstration of surgical footage and original animation with narrated description.
Setting: Two tertiary care academic teaching hospitals.
Patients or Participants: Patients who underwent minimally invasive procedures for benign conditions.
Interventions: None.
Measurements and Main Results: Pelvic surgery requires a comprehensive knowledge of the pelvic anatomy to safely obtain access, maximize exposure, ensure hemostasis, and avoid injury to surrounding structures. This video reviews the structural anatomy and landmarks in four key but less utilized surgical spaces for gynecologists. Using various laparoscopic footage and original animations, learners are instructed on 1) safe entry and dissection techniques, 2) relevant safety concerns, and 3) pearls for performing procedures in these spaces.
Conclusion: Successful pelvic surgery requires an in-depth knowledge of pelvic anatomy, and thorough review and understanding via multiple modalities is essential. Learners can utilize this step-by-step tutorial to further their knowledge base when operating in these pelvic spaces. Understanding these spaces is important for safely obtaining access, maximizing exposure, and avoiding injury and complications.

VIDEO SESSION 04 - Laparoscopy

(2:00 PM — 3:00 PM), 2:27 PM

Category: Laparoscopy

SubCategory: Urogyn/Pelvic Floor Disorders

A Laparoscopic Hysterectomy without a Uterine Manipulator

Trieu E,[1,] Sridhar S,[1] Brunn E[2]. [1]Medstar Washington Hospital Center, Washington, DC; [2]Virginia Hospital Center, Arlington, VA*
*Corresponding author.

Study Objective: Demonstrate a laparoscopic hysterectomy performed without a uterine manipulator.
Design: Video.
Setting: Hospital operating room.
Patients or Participants: 67yo G4P4004 with a history of a prior Le Fort colpocleisis who presented with postmenopausal bleeding and desired definitive surgical treatment.
Interventions: The patient had a laparoscopic hysterectomy which was performed using a vaginal delineator.
Measurements and Main Results: The hysterectomy was successfully performed. The colpotomy was made at the cervicovaginal junction by using the vaginal delineator.
Conclusion: Laparoscopic hysterectomies can be safely performed in patients without a uterine manipulator.

VIDEO SESSION 04 - Laparoscopy

(2:00 PM — 3:00 PM), 2:33 PM

Category: Laparoscopy

SubCategory: Reproductive Medicine

Cesarean Scar Ectopic Pregnancy Resection

Hernandez Cardona MI,[1,] Correa Restrepo S,[2] Cardona J[2]. [1]Gynecology, Clínica del Prado, Medellin, Colombia; [2]Gynecology, Clínica del Prado, Medellín, Colombia*
*Corresponding author.

Study Objective: To show the surgical technique of a laparoscopic resection of an ectopic pregnancy of cesarean section scar.
Design: We present a clinical case, ultrasound from the ectopic pregnancy and the control.
Setting: Clínica del Prado.
Patients or Participants: One 36, G2C1 patient.
Interventions: Ectopic resection by laparoscopy.
Measurements and Main Results: We show the technique with blood control.
Conclusion: The cesarean scar ectopic pregnancy could be safely resected by laparoscopy. Temporary ligation of uterine artery helps reducing the bleeding.

VIDEO SESSION 04 - Laparoscopy
(2:00 PM — 3:00 PM), 2:39 PM

Category: Laparoscopy

SubCategory: Other

Cesarean Scar Pregnancy: Concurrent Laparoscopy with Dilation and Curettage

Leaf MC, Wang KC, Frost A, Wu H. Gynecology and Obstetrics, Division of Minimally Invasive Gynecologic Surgery, Johns Hopkins Hospital, Baltimore, MD*
*Corresponding author.

Study Objective: The objective of this video is to review diagnosis and management of cesarean scar ectopic pregnancy (CSP) and demonstrate a technique for safe fertility-preserving management.
Design: Not applicable.
Setting: Patient was placed in lithotomy position.
Patients or Participants: This is the case of a 37-year-old woman at 8 weeks and 3 days initially diagnosed with an early pregnancy loss and given misoprostol. After heavy vaginal bleeding and persistently elevated beta- human chorionic gonadotropin (HCG), an MRI was performed showing a 5.3 centimeter heterogenous intramuscular mass in the anterior lower uterine segment, concerning for cesarean section scar pregnancy.
Interventions: This video demonstrates fertility-preserving surgical management of CSP with concurrent laparoscopy and dilation and curettage (D&C) when the overlying myometrium is very thin. First diagnostic laparoscopy was performed, and a bladder flap created in order to identify the CSP, improve visualization due to the extent of adhesions, and avoid possible bladder injury during suction D&C. Suction D&C was then performed under direct visualization. This ensured that no uterine perforation would occur and proper cannula placement for optimal removal of products.
Measurements and Main Results: Not applicable.
Conclusion: In conclusion, concomitant laparoscopy at the time of suction D&C for CSP is feasible and should be considered when the myometrium is very thin. This ensures proper cannula placement in order to remove all products of conception, while minimizing the risks of uterine perforation and hemorrhage.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:03 PM

Category: Neuropelveology

SubCategory: Robotics

Neuropelveology - Sciatic Nerve Decompression

Sarofim M. Gynaecology, Sydney Womens Endosurgery Centre, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: Pelvic pain is a common presentation for gynaecologists, however an important condition that is not well documented when discussing pelvic pain is caused by dilated and aberrant branches of the internal iliac vessels. This vascular dilation causes pressure and entrapment on the sacral plexus nerves including the sciatic nerve. Patients will present with sciatic back and lower limb neuralgia, and/or refractory urinary/anorectal dysfunction. We will present a video of a 26-year-old woman who suffered from debilitating right sided lower limb and pelvic pain, as well as bowel dysfunction.
Design: This is a video case report presentation with labelled anatomy. Our patient presented to us after many unremarkable ultrasounds, CTs, a colonoscopy and MRIs before eventually presenting for review at our unit. Her symptoms began post-partum; a pregnancy that was complicated by severe pelvic girdle pain requiring a wheelchair and a subsequent retained placenta. Post-partum she had severe right-sided hip and posterior thigh pain (S1,S2,S3), posterior/lateral calf pain (L4,L5,S1) and heel pain (S1, S2). At its worst she was bed-bound. She mobilised with difficulty with a walking aid and was taking regular opioids.
Setting: N/A.
Patients or Participants: N/A.
Interventions: The patient underwent robotic decompression of her sciatic nerve plexus secondary to vascular entrapment.
Measurements and Main Results: Intra-operatively findings there were multiple aberrant vessels compressing the lumbo-sacral trunk, sciatic nerve and peudendal nerve. The patient immediately reported her pain had resolved in recovery and was mobilising without aids on day 1 post-operatively. She is no longer on any opioids for pain relief and is completely pain-free.
Conclusion: This case highlights a less common cause of pelvic pain. Vascular entrapment of the sacral plexus should be considered when a patient presents with sciatic/bowel/bladder symptoms without any detectable pathology/precipitating factors. Finally, although effective, it does require experience with laparoscopy/robotic techniques and pelvic nerve anatomy and specialist referral is recommended.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:09 PM

Category: Oncology

SubCategory: Laparoscopy

ICG Fluorescence Technique for Detection of Sentinel Lymph Nodes in Laparoscopic Endometrial Cancer Staging

AlAshqar A, Mutlu L, McNamara B, Harold J, Clark M, Huang G, Azodi M, Schwartz PE, Santin A, Ratner E, Altwerger G, Andikyan V. Obstetrics, Gynecology, and Reproductive Sciences, Yale School of Medicine, New Haven, CT*
*Corresponding author.

Study Objective: To show a video recording of the use of the ICG technique for detection of sentinel lymph nodes in laparoscopic endometrial cancer staging.
Design: Video presentation.
Setting: Tertiary care hospital.
Patients or Participants: A postmenopausal female undergoing laparoscopic endometrial cancer staging.
Interventions: Use of the ICG technique for detection of sentinel lymph nodes in laparoscopic endometrial cancer staging.
Measurements and Main Results: Sentinel lymph node detection was successfully achieved during staging procedure and sentinel lymph nodes were negative for malignancy.
Conclusion: Using the ICG dye technique for detection of sentinel lymph nodes in laparoscopic endometrial cancer staging is a valuable, clinically safe, and effective tool for sentinel lymph node identification.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:15 PM

Category: Oncology

SubCategory: Robotics

Robotic Assisted Tumor Debulking of Stage IV-B Serous Endometrial Cancer

Duarte MG,[1,] Hillebrand AM,[1] Wolf J,[2] Ramirez Luna N,[3] Palileo A,[4] Alagkiozidis I[4]. [1]Department of Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY; [2]Division of Gynecologic Oncology, SUNY Downstate Medical Center, Brooklyn, NY; [3]Department of Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ; [4]Department of Gynecologic Oncology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: The purpose of this video is to demonstrate minimally invasive tumor debulking of stage IVB serous endometrial cancer via robotic assisted laparoscopy.
Design: N/A.
Setting: This surgery was performed at a tertiary academic referral center. The patient was placed in the dorsal lithotomy position. Three robotic arms and an assistant port were used.
Patients or Participants: The patient was 71 years old and postmenopausal with an endometrial biopsy demonstrating high grade serous endometrial cancer. CT chest/abdomen/pelvis was significant for a distended uterine cavity and omental caking.
Interventions: The patient underwent robotic assisted total laparoscopic hysterectomy, bilateral salpingo-oophorectomy, pelvic peritonectomy, omentectomy, and resection of bladder serosal and sigmoid tumor nodules. A dual docking technique was utilized where the robotic boom was undocked, rotated, and re-docked mid-surgery for optimized surgical exposure.
Measurements and Main Results: Optimal debulking with no gross residual disease (R0) was achieved with a total operative time of 2.5 hours, and estimated blood loss of 50cc. The patient was discharged on post-operative day 0. Final pathology showed FIGO stage IVB uterine serous carcinoma. Her post-operative course was uncomplicated and she started chemotherapy with IV carboplatin and paclitaxel 4 weeks after surgery.
Conclusion: Minimally invasive surgery is a feasible option for primary cytoreduction in select cases of advanced endometrial cancer with peritoneal metastatic disease.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:21 PM

Category: Oncology

SubCategory: Robotics

Enclosed Colpotomy Technique for Minimally Invasive Approach to Radical Hysterectomy for Cervical Cancer

Murphy C,[1,] Azodi M,[2] Kashani S[1]. [1]OBGYN, Yale New Haven Health - Bridgeport Hospital, Bridgeport, CT; [2]Obstetrics, Gynecology, and Reproductive Sciences, Yale School of Medicine, New Haven, CT*
*Corresponding author.

Study Objective: The purpose of this video is to demonstrate a vaginal purse-string suture technique to perform a closed colpotomy to prevent tumor spillage during minimally invasive radical hysterectomy performed for cervical cancer.
Design: Surgical video.
Setting: N/A.
Patients or Participants: N/A.
Interventions: This video presents a 49-year-old with invasive cervical squamous cell carcinoma who underwent robotic-assisted radical hysterectomy, bilateral salpingectomy, upper vaginectomy with parametrial resection and bilateral sentinel lymph node biopsies. The procedure was performed without a uterine manipulator, and an enclosed colpotomy was successfully performed to prevent tumor spillage.
Measurements and Main Results: The procedure was uncomplicated, and the patient was discharged home on POD#1. No tumor tissue was exposed to the pelvic cavity after closure, and the vaginal cuff healed well. Since the procedure 5 months ago, she has remained free of disease.
Conclusion: This technique to an enclosed colpotomy allows for a minimally invasive approach to cervical cancer treatment and is both effective and feasible at preventing tumor spillage.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:27 PM

Category: Pelvic Pain

SubCategory: Endometriosis

Endometriosis of the Ileocecal Valve: Tips for Surgical Approach

Cuesta L,[1,] Sanchez M,[2] Vergnaud JP,[1] De los Rios JF[1]. [1]Unidad de Cirugía Endoscópica Ginecológica, Clinica del Prado, Medellin, Colombia; [2]Unidad de Laparoscopia Ginecológica Avanzada y Dolor Pélvico Crónico-ALGIA, Pereira, Colombia*
*Corresponding author.

Study Objective: To demonstrate a minimally invasive approach to perform ileocolectomy as a treatment for deep infiltrating endometriosis in the cecum and base of the appendix with side-to-side anastomosis in collaboration with a multidisciplinary team. To describe tips for the surgical approach.
Design: Clinical case video presentation.
Setting: Clínica del Prado.
Patients or Participants: One 35 y-o G0.
Interventions: Laparoscopic ablation of pelvic peritoneal endometriosis and Ileocolectomy for resection bowel endometriosis of the cecum and the base of the appendix with side-to-side anastomosis.
Measurements and Main Results: Tips for intestinal resection and anastomosis side-to-side technique with endoscopic linear stapler.
Conclusion: Pain is often overlooked by both physicians and women. In this case, despite the long history of chronic pelvic pain, it was the evaluation of chronic anemia and gastrointestinal bleeding that led to the diagnosis of deep infiltrating endometriosis. The ilocecal valve and appendix are uncommon locations of deep infiltrating endometriosis and account for 4% of the cases of bowel endometriosis.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:33 PM

Category: Pelvic Pain

SubCategory: Endometriosis

A Picture's Worth a Thousand Cuts: Uncovering Hidden Surprises during GYN Surgeries

Namazi G,[1,] Chauhan N,[2] Nahas S,[1] Stuparich M,[1] Behbehani S[3]. [1]Minimally Invasive Gynecologic Surgery, University of California Riverside, Riverside, CA; [2]University of California Riverside, Riverside; [3]Reproductive Endocrinology and Infertility-Minimally Invasive Gynecologic Surgery, Coastal Fertility Medical Center/University of California Riverside School of Medicine, Riverside, CA*
*Corresponding author.

Study Objective: Video presentation discussing detailed ultrasound imaging in evaluating pelvic pain. This video is designed to emphasize on importance of pre-operative imaging in cases of suspected endometriosis to avoid incomplete or suboptimal surgeries.
Design: Educational video presentation complemented with case series.
Setting: Tertiary academic center.
Patients or Participants: We showcase 5 cases of pelvic pain, pre-operative ultrasound findings, and intra-op findings.
Interventions: Pre-operative pelvic ultrasound followed by minimally invasive surgery. We discuss 4 steps for endometriosis/pelvic pain specific pelvic ultrasound including evaluation of uterus and adnexa, evaluation of trans-vaginal sonographic 'soft markers' for endometriosis, assessment of anterior and posterior compartments using real-time 'sliding sign', and assessment for deep endometriotic nodules in anterior and posterior compartments.
Measurements and Main Results: In this video we focus on steps to ultrasound imaging for pelvic pain and show intra-operative correlation with pre op ultrasound findings in patients with pelvic pain suspicious for endometriosis.
Conclusion: Ultrasound is a powerful and dynamic tool for evaluating pelvic pain with high sensitivity and specificity and accuracy of diagnosing deep endometriosis. Expert and detailed ultrasound helps visualize anatomical areas which are not visible surgically therefore allows for complete surgeries. Detailed ultrasound evaluation not only helps with the diagnosis, but also to counsel the patients properly, consent appropriately, and plan for interdisciplinary consults.

VIDEO SESSION 05 - Oncology / Pelvic Pain
(2:00 PM — 3:00 PM), 2:39 PM

Category: Pelvic Pain

SubCategory: Endometriosis

Trachelectomy with Excision of Endometriosis for Chronic Pelvic Pain

Downing P,[1,] Post S,[2] Santayana C,[1] Misal M[3,*]. [1]Female Pelvic Medicine and Reconstructive Surgery, The Ohio State University Wexner Medical Center, Columbus, OH; [2]Obstetrics and Gynecology, The Ohio State University Wexner Medical Center, Columbus, OH; [3]Minimally Invasive Gynecologic Surgery and Pelvic Pain, Obstetrics and Gynecology, The Ohio State University Wexner Medical Center, Columbus, OH*
*Corresponding authors.

Study Objective: To review the definition, history, and indications for trachelectomy; discuss trachelectomy in context of chronic pelvic pain; and demonstrate robotic trachelectomy surgical technique in video format for educational purposes.
Design: N/A.
Setting: Outpatient surgery center in tertiary care hospital. Patient placed in dorsal lithotomy and trendelenburg position.
Patients or Participants: Patient underwent a robotic trachelectomy for chronic pelvic pain.
Interventions: N/A.
Measurements and Main Results: Postoperative course was uncomplicated. Patient had significant improvement in pelvic pain and returned to all activities of daily living without requiring pain medications.
Conclusion: The use of robotic minimally invasive surgery for post-supracervical hysterectomy trachelectomy helps to safely identify distorted anatomic landmarks and proper tissues planes in the setting of refractory endometriosis. This minimally invasive approach to trachelectomy allows for decreased risk of morbidity and can improve persistent pelvic pain in setting of endometriosis.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:03 PM

Category: New Instrumentation or Technology

SubCategory: Fibroids

Clinical Use of Mixed Reality for Laparoscopic Myomectomy

Ochi Y, Semba S, Sawada M, Kanno K, Sakate S, Yanai S, Andou M. Kurashiki Medical Center, Kurashiki, Japan*
*Corresponding author.

Study Objective: To demonstrate the utility of mixed reality (MR) technology in laparoscopic myomectomy (LM).
Design: A narrative video.
Setting: An urban general hospital. Although LM is a widespread surgery, a high recurrence rate reported up to 51.4% at 5 years after surgery is a persistent issue.
Patients or Participants: A 42-year-old woman, gravida 0, para 0, presented with hypermenorrhea. MRI revealed three fibroids measuring up to 2.7 cm located in the anterior wall and three fibroids measuring up to 4.2cm located in the posterior wall of the uterus.
Interventions: We utilized MR technology, which is a combination of the physical and digital worlds, to prevent residual fibroids. The region-of-interest (ROI) method with Ziostation2 (Ziosoft Inc., Tokyo, Japan) enabled the delineation of fibroids, myometrium, and endometrium, and their exact locations were identified on the image. Three-dimensional hologram constructed using the HoloeyesXR system (Holoeyes Inc., Tokyo, Japan) was displayed adjacent to the surgical monitor with HoloLens2: head mount displays (Microsoft Corp., Redmond, WA, USA).
Measurements and Main Results: The use of MR lens allows the user to feel as though an MRI three-dimensional constructed image were floating in the air of the operative field, which can be zoomed in/out, and rotated intuitively. In addition to facilitating the identification of fibroid location and contributing to the prevention of fibroid remnants, it was possible to determine the incision line of the uterus and prevent damage to the endometrium when enucleating fibroids were found close to the endometrium. The technique enabled the surgeon and assistant to share the image of the three-dimensional structure of the uterus.
Conclusion: The use of MR technology in LM is beneficial for intraoperative understanding of the spatial location of uterine fibroids.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:09 PM

Category: New Instrumentation or Technology

SubCategory: Laparoscopy

Laparoscopic Management of Scar Ectopic Pregnancy with Temporary Ligation of Uterine Artery

Pandit H, Bhatt R. Pandit Hospital, Ahmednagar, India*
*Corresponding author.

Study Objective: Laparoscopic removal of a scar ectopic pregnancy with emphasis on minimal blood loss during surgery by using temporary uterine artery ligation with shoelace knot, and use of vasopressin for achieving a bloodless field.
Design: A case report.
Setting: Pandit hospital and laparoscopy centre, Ahmednagar, India.
Patients or Participants: A 22-year-old woman with a history of previous one Cesarean section, patient presented with vaginal bleeding, and

transvaginal ultrasound revealed an 11 week gestational sac implanted in the scar tissue.
Interventions: Laparoscopic excision of scar ectopic pregnancy with temporary ligation of uterine artery and vasopressin administration.
Measurements and Main Results: The patient presented with vaginal bleeding, and transvaginal ultrasound revealed an 11 week gestational sac implanted in the scar tissue. The surgery was performed with 3 ports. Intraoperatively, first step was bilateral temporary uterine artery ligation at its origin with shoelace knot; successful ligation is indicated by blanching and cessation of pulsations of uterine artery. Next, bladder adhesiolysis was done till level of UV fold. Vasopressin was injected into uterine corpus. Incision was taken over scar site and the products of conception were excised and retrieved vaginally through open scar with ovum forceps. The scar margins were freshened and scar excision was done, followed by approximation of scar by suturing with barbed suture, which gives better healing and good scar integrity. The patient had an uneventful postoperative course and was discharged home the next day. Follow-up ultrasound at 6 weeks showed no evidence of residual tissue or ectopic pregnancy. Blood loss during surgery was less than 5ml.
Conclusion: This case highlights the effectiveness of temporary uterine artery ligation with shoelace knot and use of vasopressin for minimizing blood loss during laparoscopic surgery for scar ectopic pregnancy, and emphasizes the importance of this intervention for this rare but potentially life-threatening condition.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:15 PM

Category: New Instrumentation or Technology

SubCategory: Robotics

Making Radical Surgery More Patient Friendly with a Robotic Bipolar Cutting Technique

Andou M, Sakate S, Yanai S, Kanno K, Ochi Y, Sawada M. Kurashiki Medical Center, Kurashiki, Japan*
*Corresponding author.

Study Objective: To show the efficacy of a robotic bipolar cutting technique in three radical surgery cases.
Design: Video presentation.
Setting: An urban general hospital.
Patients or Participants: Three cases will be presented. A stage 1b1 cervical cancer case, a stage 1b endometrial cancer case, and a deep endometriosis case with rectal and ureteral involvement.
Interventions: The following robotic surgery cases will be shown: nerve sparing radical trachelectomy, extraperitoneal para-aortic and pelvic lymphadenectomy, and extensive deep endometriosis surgery including hysterectomy, low anterior resection and partial ureteral resection followed by reconstruction.
Measurements and Main Results: Robotic bipolar cutting is used in the place of monopolar curved scissors as the monopolar electrode can destroy any tissue on contact. The bipolar cutting technique enables very precise dissection by the cutting action of the spark between the fine tips of the Maryland forceps, which causes pinpoint vaporization. Through this technique, we can avoid excessive thermal spread and capacitive coupling which can cause intraoperative organ injury. All cases could be operated safely and without excessive blood loss. No cases required blood transfusion. By utilizing the bipolar cutting technique, we can expect that tissue damage was kept minimal. All patients had a quick recovery.
Conclusion: Accurate and safe dissection with the aid of the robotic bipolar cutting technique is safe and feasible. It is one way to prevent the possibility of intraoperative injury and a step towards bloodless surgery.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:21 PM

Category: New Instrumentation or Technology

SubCategory: Robotics

Robotic-Assisted Trans-Broad Ligament Abdominal Cerclage in 13-Week Pregnant Patient

Guan Z,[1] Liu J,*[2] Wang Q,*[3] Thigpen B,[4] Sunkara S,[1] Guan X[4].*
[1]Minimally Invasive Gynecological Surgery, Baylor College of Medicine, Houston, TX; [2]Minimally Invasive Gynecological Surgery, Guangzhou Medical University, Guangzhou, Guangdong, China; [3]Minimally Invasive Gynecological Surgery, Xinxiang Central Hospital, Xinxiang, Henan, China; [4]Minimally Invasive Gynecology Surgery, Baylor College of Medicine, Houston, TX
*Corresponding author.

Study Objective: To demonstrate the surgical techniques for improving safety in robotic-assisted abdominal cerclage via broad ligament window dissection.
Design: Stepwise demonstration with narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: Our patient is a 32-year-old G8P2143, with a history of pregnancy loss at 19 and 23 weeks and one failed vaginal cerclage, presented to us at 13 weeks and 5 days for abdominal cerclage. We have completed a total of five successful procedures with this technique on pregnant patients ranging from 9 to 14 weeks.
Interventions: Abdominal cerclage during pregnancy can be very risky and challenging to perform yet offers an increased success rate for continuing pregnancy. Excessive bleeding and the rupture of membrane during the procedure could lead to pregnancy lost and a failed abdominal cerclage. Therefore, seeking a feasible and safer technique would be preferable for the surgeons to decrease surgical risk and complications. We have developed a trans-broad ligament technique which would allow for the bilateral uterine vessels to be clearly exposed reducing the possibility of accidental damage to a major vessel and eliminating the risk of blind needle placement piercing through the amniotic sac resulting in rupture of membrane and subsequent pregnancy lost.
Measurements and Main Results: The fetal heart rate was 126 bpm and patient was discharged home next day. A healthy baby, 6 pounds 14 ounces, was delivered by cesarean section at 36 weeks 5 days due to early contractions and pain.
Conclusion: Robotic-assisted abdominal cerclage via broad ligament window dissection offers a possibly feasible and safe technique for surgeons seeking to reduce risks although further research is needed.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:27 PM

Category: New Instrumentation or Technology

SubCategory: Robotics

Utility of Lighted Ureteral Stents in Gynecologic Surgery

Stockwell EL. Gynecologic Surgery, AdventHealth, Celebration, FL*
*Corresponding author.

Study Objective: Ureteral injury can cause significant morbidity for the patient and is a leading cause of litigation in many countries. In complicated cases where difficult pelvic periureteral dissection is expected or encountered, such as with large uterine or adnexal pathology, obliterative cul-de-sac disease (such as endometriosis), or adnexal surgery post

hysterectomy, ureteral stents may be helpful in the identification of the ureters. This is especially true in robotic surgery where surgeons rely more on visual cues and less on haptic feedback.
Design: This video demonstrates the utility of lighted ureteral stents in complex gynecologic surgery as well as addresses the controversy surrounding routine use of lighted ureteral stents.
Setting: Community hospital.
Patients or Participants: This video demonstrates two cases in which lighted ureteral stents helped with identification of the ureter. The first patient has a large bulky fibroid uterus that extends to the pelvic sidewalls bilaterally. The second patient has a completely obliterated pelvis due to severe endometriosis and adhesive disease.
Interventions: Lighted ureteral stents are placed bilaterally cystoscopically under direct visualization at the start of the procedure.
Measurements and Main Results: The use of lighted ureteral stents helps to identify the ureter for ureterolysis and re-establishing normal pelvic anatomy in complex disease states, such as with large pathology, distorted anatomy, or dense pelvic adhesions. This may help decrease the risk of ureteral injury.
Conclusion: While ureteral stents may be useful in cases where difficult pelvic periureteral dissection is expected or encountered, ultimately, meticulous surgical technique and attention to pelvic anatomy is paramount to decreasing ureteral injury.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:33 PM

Category: New Instrumentation or Technology

SubCategory: Urogyn/Pelvic Floor Disorders

A Novel Technique of Post-Operative Adjustment of Single Incision Sling

McGregor A,[*,1] *Hurtado E*[2]. [1]*Minimally Invasive Gynecologic Surgery, Cleveland Clinic Florida, Weston, FL;* [2]*Urogynecology and Reconstructive Pelvic Surgery, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate a novel technique for post-operative adjustment of a single incision adjustable sling.
Design: N/A.
Setting: Academic center operating room.
Patients or Participants: 63-year-old female with recurrent stress urinary incontinence after failed treatment with a prior mid-urethral sling.
Interventions: There is a single incision sling on the market that can be adjusted numerous times intraoperatively. Friedman et al. published a method which describes passing the tensioning suture through the vaginal incision after sling placement and using this suture to tighten the sling post-operatively. While having the ability to tighten the sling postoperatively helps ensure the sling is tight enough to prevent leakage, there is currently no mechanism to loosen the sling if it is overtightened in the office. Here, we describe a technique of adding a second suture to the single incision sling which allows for loosening the sling postoperatively as well.
Measurements and Main Results: Patient had sling tensioned in the office on postoperative day number three and had >90% improvement of her stress urinary incontinence at her 6 week follow up visit.
Conclusion: In patients with recurrent stress urinary incontinence despite prior sling placement or urinary retention with prior sling, placing a single incision sling with a modification to allow tightening and loosening postoperatively can improve patient outcomes.

VIDEO SESSION 06 - New Instrumentation or Technology
(2:00 PM — 3:00 PM), 2:39 PM

Category: New Instrumentation or Technology

SubCategory: Laparoscopy

Laparoscopic Repair of Uterine Arterio - Venous Malformation

Pandit H, *Bhatt R. Pandit Hospital, Ahmednagar, India*
*Corresponding author.

Study Objective: Management of symptomatic uterine arteriovenous malformation using hystero-laparoscopic approach by bilateral uterine artery desiccation and bipolar resectoscope excision.
Design: A case report.
Setting: Pandit hospital and laparoscopy centre, Ahmednagar, India.
Patients or Participants: A 22-year female with a history of persistent PV bleeding since 3 months. Her obstetric history was significant in that she had undergone dilatation and curettage procedures two times for intermittent vaginal bleeding in the past 3 months.
Interventions: Hystero-Laparoscopic repair of uterine arteriovenous malformation with bilateral uterine artery dessication and hysteroscopic excision of AVM with bipolar resectoscope.
Measurements and Main Results: On USG and MRI, a uterine arteriovenous malformation was diagnosed, and a surgical approach was determined as plan of treatment.
Surgical procedure: Diagnostic hysteroscopy was done, and products of conception along with AV malformations was visualized. Laparoscopy was performed, retroperitoneum was opened till the level of sacral promontory, by opening the broad ligament. Bilateral uterine artery was skeletonized till its origin from the internal iliac artery.
Bilateral coagulation of uterine artery at its origin was done. On doing intraoperative USG, there was significant reduction in pulsatility index of the AV malformation, and thus reduction in blood flow to arteriovenous malformation. Hysteroscopic resection and excision of arteriovenous malformation was done using bipolar resectoscope. On follow up USG, there was no vascularity seen in uterine cavity.
Conclusion: Hysterolaparoscopic repair of arteriovenous malformation (AVM) of the uterus is a minimally invasive surgical technique that has gained increasing attention in recent years. This procedure has shown promising results in the treatment of AVMs of the uterus, with high success rates and low complication rates. It is a safe and effective alternative to more invasive surgical techniques, such as hysterectomy, and can preserve fertility in women who wish to conceive in the future.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:18 PM

Category: Endometriosis

SubCategory: Laparoscopy

Laparoscopic Eradication of De with Segmental Bowel Resection According to the "Negrar Method" with Nerve-Sparing "Touchless" Technique

Roviglione G. Gynecology and Obstetrics, Minimally-Invasive Pelvic Surgery, International School of Surgical Anatomy, IRCCS Sacro Cuore Don Calabria Hospital Negrar di Valpolicella, Verona, VERONA, VR, Italy*
*Corresponding author.

Study Objective: To show a laparoscopic segmental rectosigmoid resection according to the nerve-sparing "touchless" technique.
Design: Surgical dissection of the retroperitoneum according to the "Negrar Method" with the nerve-sparing "touchless" technique.
Setting: IRCSS Sacro Cuore Don Calabria Hospital, patient with severe deep infiltrating endometriosis with 4cm stenotizing rectosigmoid nodule.
Patients or Participants: Surgeon: Marcello Ceccaroni, MD, PhD
Interventions: Laparoscopic Eradication of Deep Endometriosis with Segmental Rectosigmoid Resection according to the Negrar Method with Nerve-Sparing "Touchless" Technique.
Measurements and Main Results: Dissection of the retroperitoneum is carried out according to the previous published "Negrar Method", developing avascular spaces and identifying the pelvic visceral autonomic innervation. The superior hypogastric plexus, hypogastric nerves, pelvic splanchnic nerves and the inferior hypogastric plexuses, are dissected and isolated without a direct touch but by just sliding them along their enveloping double-layered visceral fascia, thus reducing surgical neural trauma and post-operative dysfunctions.
Conclusion: The Nerve-Sparing "Touchless" technique ensures preservation of the pelvic ortho- and para-sympathetic functions, reducing direct surgical impact given by compression, cutting or thermal damage.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:24 PM

Category: Endometriosis

SubCategory: Laparoscopy

"Green Flags" for Bowel Endometriosis Surgery

Mori KH, Ribeiro PAAG, Coelho IMC, Ohara F, De Nicola ALA, Ribeiro HSAA. Obstetrics and Gynecology, Irmandade da Santa Casa de Misericordia de Sao Paulo, Sao Paulo, Brazil*
*Corresponding author.

Study Objective: Challenges for surgical approach in bowel endometriosis include anatomical preservation, and the risk of anastomosis dehiscence and leakage. Indocyanine green (ICG) enables assessment of visceral perfusion, reducing surgical time and complications. The objective of this video is to demonstrate the benefits of ICG in the surgical treatment of bowel endometriosis.
Design: Sequential demonstration of a complex case of bowel endometriosis treated with laparoscopic approach using ICG as a tool for anastomosis assessment and ureter visualization with narrated video footage.
Setting: Semi-gynecological position, laparoscopic approach with 10 mm port placed on the umbilicus and 3 auxiliary ports placed following the triangulation technique.
Patients or Participants: 42-year-old woman with dysmenorrhea associated with dyschezia. A specialized transvaginal ultrasound showed a 2.5 cm retrocervical nodule extending to the vagina. Also, a 4.4 cm rectal nodule at 6 cm from the anal verge.
Interventions: For the ureter identification, 6 ml of 2.5 mg/ml ICG were injected (3 ml on each ureter) with a 5-Fr open-ended ureteral catheter after 10 cm of the ureteral catheter insertion. Intraureteral ICG was then detected using near-infrared imaging. With the ureter green enlightened, the retroperitoneum were safely opened for the okabayashi space development. The nerve-sparing technique combined with a gentle dissection allowed visualization and preservation of the hypogastric nerves. The rectovaginal space was dissected, following a total hysterectomy. A segmental resection with an end-to-end anastomosis was done following intravenous injection of 2 ml of ICG. Below the anastomosis, another endometriotic nodule was then removed using a linear stapler. After 2 minutes of the injection, anastomosis perfusion was evaluated.
Measurements and Main Results: The surgery took place without intraoperative and post-operative complications.
Conclusion: Resection of bowel endometriosis is enhanced with intraoperative ICG Fluorescence Guided Surgery to ensure perfusion of the anastomosis and ureteral identification.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:30 PM

Category: Endometriosis

SubCategory: Neuropelveology

The Imbalance of Pelvic Forces and the Pain Caused By Endometriosis: En Bloc Peritonectomy, a Solution for This

Chiminacio I, Obrzut C. Endometriose, Chiminacio Medicina da Mulher, Pato Branco, Paraná, Brazil*
*Corresponding author.

Study Objective: Demonstrate how fibrosis in the uterine parametrium by endometriosis leads to an imbalance of forces between the two sides of the pelvis causing retractions in pre-sacral fascia and somatic nerves. Also, how en bloc peritonectomy can rebalance the forces in the pelvis healing pain.
Design: Edited video with regular case of laparoscopic surgery for endometriosis excision.
Setting: Three-port laparoscopic surgery.
Patients or Participants: 23-year-old patient presenting chronic pelvic pain with radiating to left leg and dyspareunia.
Interventions: Posterior compartment en bloc peritonectomy made to relax the pre-sacral fascia above the somatic nerves on both sides of the pelvis simultaneously, recovering the forces balance around the uterus. The patient was previously submitted to physical examination with left parameter retraction and MRI showing left parametrium fibrosis and uterine deviation to the left side.
Measurements and Main Results: The video shows the releasing of entrapment and rebalancing of the forces recovering elasticity on both sides of pelvis by peritonectomy. A dissociation between the high intensity of the symptoms, the physical examination findings, the MRI and the aspects of the peritoneum lesions during laparoscopy was observed. The real infiltration of endometriosis in the collagen could be observed. The patient had complete improvement of pelvic pain symptoms in the immediate postoperative period and in the follow-up 6, 12 and 18 months.
Conclusion: Endometriosis could be considered much more than a peritoneal surface disease. The dissociation between the intensity of the symptoms, the physical examination, MRI and the peritoneal aspects during laparoscopy suggests that endometriosis is a infiltration of endometrium into collagen instead of dark spots on the peritoneum surface. The en bloc fibrosis and lesions removal demonstrates to be an effective and reproducible way for solving painful symptoms for releasing the pre-sacral fascia from the entrapment and rebalancing the forces in the pelvis.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:36 PM

Category: Endometriosis

SubCategory: Laparoscopy

Extrapelvic Endometriosis: Laparoscopic Resection of Diaphragmatic and Hepato-Renal Lesions

Janmey I,[1,] Zeccola A,[2] Lee T[3]. [1]UPMC Magee-Womens Hospital, Pittsburgh, PA; [2]Minimally Invasive Gynecologic Surgery, UPMC Magee-Womens Hospital, Pittsburgh, PA; [3]Obstetrics, Gynecology, and Reproductive Sciences, UPMC Magee-Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: We review the epidemiology and clinical evaluation of extrapelvic endometriosis, as well as demonstrate surgical techniques to facilitate laparoscopic resection of diaphragmatic and hepatorenal endometriotic implants. Extrapelvic endometriosis is estimated to affect 12% of reproductive-aged women with endometriosis. Diaphragmatic endometriosis is classified as implants on the diaphragm, lung or pleura with an estimated incidence of 1%. 50-84% of women diagnosed with diaphragmatic endometriosis have concomitant pelvic endometriosis.
Design: Surgical Video.
Setting: Tertiary academic medical center.
Patients or Participants: We present a case of a 44 y.o. who previously underwent laparoscopic hysterectomy with ovarian conservation and excision of endometriosis. She presented five years later with recurrent, cyclic right-sided rib and shoulder pain.
Interventions: Our video demonstrates a minimally invasive approach to laparoscopic resection of diaphragmatic and hepatorenal endometriotic implants.
Measurements and Main Results: Definite surgical management with a minimally invasive approach can be safely and effectively performed laparoscopically, allowing excellent operative exposure and a quicker recovery.
Conclusion: Diaphragmatic and hepatorenal endometriosis are rare but clinically significant entities. Careful attention should be given to patient positioning, port placement, and retraction to maximize visualization and safety.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:42 PM

Category: Endometriosis

SubCategory: Laparoscopy

Perioperative Considerations for the Management of Diaphragmatic Endometriosis with Possible Thoracic Involvement

Min CJ,[1,] Brandt WS,[2] Biest S,[3] Kozower B,[2] Ross W[3]. [1]Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, MO; [2]Cardiothoracic Surgery, Washington University School of Medicine, St. Louis, MO; [3]Washington University of St. Louis, St. Louis, MO*
*Corresponding author.

Study Objective: To discuss perioperative considerations and workup for the management of diaphragmatic endometriosis with possible thoracic involvement.
Design: Surgical video.
Setting: Academic tertiary care hospital. Patient positioned in dorsal lithotomy in the operating room.
Patients or Participants: 26-year-old G0 female with stage IV endometriosis involving the diaphragm and possibly the pericardium.
Interventions: Laparoscopic excision of endometriosis in the pelvis, in the upper abdomen, and on the diaphragm, and diagnostic thoracoscopy.
Measurements and Main Results: Perioperative workup was performed by Minimally Invasive Gynecologic Surgery and Thoracic Surgery. Laparoscopic excision of full thickness diaphragmatic endometriosis and diagnostic thoracoscopy were successfully completed. All diaphragmatic endometriosis was removed, and ultimately there was no evidence of thoracic endometriosis. The patient was safely discharged on the same day of surgery and reported complete resolution of her symptoms 8 weeks after surgery.
Conclusion: With appropriate perioperative and intraoperative considerations and care, cases requiring extensive resection of endometriosis and thoracic exploration can be performed safely and have excellent results for the patient.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:48 PM

Category: Endometriosis

SubCategory: Pelvic Pain

Ten-Step En Bloc Peritonectomy for Endometriosis, a Form of Treatment for Pelvic Pain

Chiminacio I, Obrzut C. Endometriose, Chiminacio Medicina da Mulher, Pato Branco, Paraná, Brazil*
*Corresponding author.

Study Objective: Didactically describe en bloc peritonectomy excision for endometriosis in 10 steps.
Design: Edited video step-by-step procedure for endometriosis excision of the posterior compartment with underlying connective tissue by en bloc technique.
Setting: Three-port laparoscopic surgery with harmonic energy device.
Patients or Participants: A regular case of AAGL grade III endometriosis in the posterior compartment with repeated hematomas in the connective tissue and fibrosis showing chronic pelvic pain due to retraction of the deep pelvic fascia and entrapment of somatic nerves.
Interventions: Laparoscopic resection of endometriosis by en bloc peritonectomy technique, demonstrated here in 10 systematized steps.
Measurements and Main Results: In this didactic step-by-step can be seen how the resection should be performed and reproduced, respecting the aspects of the retroperitoneal pelvic anatomy. This case demonstrated complete remission of pain symptoms at long term follow-up. A complete disappearance of the signs of parametrial retraction caused by endometriosis was also observed on physical examination in the long term.
Conclusion: The probable embryologic and Müllerian origin of endometriosis determines a path track and pattern of involvement of the peritoneum and deep pelvic layers or connective tissue fasciae, such as the hypogastric and presacral fasciae, which determines the entrapment of underlying somatic nerves and consequent pelvic pain. The en bloc release demonstrated in these 10 steps is applicable and reproducible based on a thorough knowledge of the pelvic anatomy. Release of the pelvic fascia is the basis for resolution of chronic endometriosis-related pelvic pain. For this reason, peritonectomy for endometriosis has a medical and surgical use that is distinct from oncologic use and can be applied to all grades of endometriosis as a stand-alone technique or as part of complex surgeries such as bowel endometriosis or endometriosis.

VIDEO SESSION 07 - Endometriosis
(3:15 PM — 4:15 PM), 3:54 PM

Category: Endometriosis

SubCategory: Laparoscopy

Excision of Large Bladder Endometrioma Near Trigone Area

Sun CH. OB/GYN, Lucina Women & Children Hospital, Kaohsiung City, Taiwan*
*Corresponding author.

Study Objective: Showing the surgical technique dealing with a rare case with large bladder endometrioma near bladder trigone area.

Design: Surgical video review.
Setting: Local hospital.
Patients or Participants: Single patient case presentation.
Interventions: Advanced laparoscopic surgery.
Measurements and Main Results: 32 y/o female, had problems of severe pelvic endometriosis (causing bilateral ovarian endometrioma, posterior deep endometriosis over bilateral uterosacral ligament and retrocervix), and a large bladder mass (bladder endometrioma) near right ureter orifice. She had no sign of obstructive uropathy (no hydroureter, no hydronephrosis). Extensive adhesiolysis and retroperitoneal space dissection were performed, so as to mobilize the entire large bladder mass before resection. During the resection of the bladder mass after cystotomy, the right ureter (including the intramural part) was always kept in sight and kept intact. After full-thickness bladder wall excision, the right ureter stent was inserted, and bladder defect was re-approximated in 2 layers, making sure the repair is watertight. The patient recovered very well after the surgery, and the ureter stent was removed 2 weeks after the surgery.
Conclusion: Laparoscopic excision for the bladder endometrioma near trigone area is feasible. As long as there is no sign of obstructive uropathy, it is possible to preserve the entire ureter (including the intramural part), without the need for ureter re-implantation.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:18 PM

Category: Fibroids

SubCategory: Hysteroscopy

Prostaglandin Injection for Myoma Eversion (PRIME): A Novel Approach to Type 2 Myomas

Yu L, Urbina P, Yang LC, Tsai S, Chaudhari A, Milad MP. Obstetrics & Gynecology, Northwestern Medicine/Northwestern University, Chicago, IL*
*Corresponding author.

Study Objective: To determine if hysteroscopic injection of prostaglandins would facilitate myoma resection.
Design: Patients were consented at their outpatient pre-operative visit. Follow-up included an ultrasound at 4 weeks post-operatively.
Setting: Patients were positioned in dorsal lithotomy and underwent monitored anesthesia care in the operating room.
Patients or Participants: This patient was identified pre-operatively to have a type 2 myoma. Patient had no contra-indications to prostaglandin administration and provided informed consent in the office.
Interventions: Dilute carboprost tromethamine (Hemabate) was injected at the base of the fibroid during hysteroscopy to stimulate uterine contractions and facilitate eversion of the myoma into the cavity. A hysteroscopic morcellator was used to resect the fibroid.
Measurements and Main Results: Pre-operative ultrasound demonstrated a $4.1 \times 4.5 \times 4.6$ cm FIGO Type 2 uterine fibroid. Following intra-operative injection of dilute Hemabate, additional myoma was everted into the cavity allowing for further tissue morcellation. A 4-week post-operative ultrasound demonstrated a thin endometrial stripe with no evidence of residual fibroid. Patient did not experience any adverse events during intra-operative administration of Hemabate and reported no complications at the time of post-operative follow-up.
Conclusion: Hysteroscopic injection of prostaglandins facilitates myoma eversion and tissue resection in appropriately selected patients. Additional potential benefits include reducing need for second procedure and reducing the risk of thermal injury to surrounding myometrium with use of electrosurgical resection. Further research is indicated to determine which patients may benefit most from this technique and to characterize any potential adverse events.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:24 PM

Category: Fibroids

SubCategory: Laparoscopy

Periurethral Leiomyoma: An Uncommon Finding

Galaviz VD, Nguyen AD, Sticco PL, Downing KT. OBGYN, Good Samaritan University Hospital, West Islip, NY*
*Corresponding author.

Study Objective: To demonstrate a laparoscopic approach to excise a periurethral mass and highlight important anatomical landmarks when dissecting into the space of Retzius.
Design: Video presentation.
Setting: Tertiary care center.
Patients or Participants: This is a case of a 51-year-old female with a prior hysterectomy who was referred for evaluation of a vaginal mass. She underwent urologic evaluation that revealed the presence of a vaginal cyst upon their exam. An MRI was obtained and demonstrated a $2.7 \times 2.7 \times 2.4$ cm periurethral mass, causing mass effect on the bladder base. The radiologic impression favored a leiomyoma. In addition, she reported symptoms of a vaginal bulge, pelvic pressure, leakage of urine with cough/laugh/sneeze and urgency. She desired surgical management.
Interventions: Following a laparoscopic sacrocolpopexy, the space of Retzius was entered, delineating the bladder with retrograde filling whilst staying within the medial umbilical ligaments. Dissection into the space of Retzius was performed, carefully dissecting the bladder off of the pubic bone and identifying important structures including the pubic symphysis, Cooper's ligaments, obturator internus, bladder neck and vital vasculature. The periurethral mass was clearly visualized, dissected from the periurethral region and an incision was made on the overlying tissue. The mass was enucleated and removed. The bladder peritoneum was reapproximated. No complications occurred. Pathology results confirmed a leiomyoma.
Measurements and Main Results: The patient's recovery was uncomplicated. She reported significant improvement in her symptoms at follow-up appointments at 3 weeks and 3 months postoperatively.
Conclusion: Periurethral masses occur in 1:1000 women. Urethral diverticula account for the majority of periurethral masses followed by vaginal cysts and leiomyomas. Patients typically present with bladder or urinary complaints due to the limited space near the urethra however, rarely can these masses be found incidentally. Due to the rare occurrence of periurethral leiomyomas, its management has not been formally determined. However, surgical excision is recommended.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:30 PM

Category: Fibroids

SubCategory: Laparoscopy

Laparoscopic Myomectomy in a Patient with MRKH

Savoni J, Sutaria T, Sprague ML. Minimally Invasive Gynecologic Surgery, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: To demonstrate a case presentation and surgical management of a ligamentous leiomyoma in a patient with Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome.
Design: Video case presentation.
Setting: Laparoscopic myomectomy was completed in dorsal lithotomy position using a 5mm umbilical port, two 5mm left lateral ports, and a 5mm right lower quadrant port.

Patients or Participants: 32-year-old G0 with MRKH syndrome who presented with a 5.4 cm solid adnexal mass. Preoperative differential diagnosis included ovarian neoplasm, uterine remnant, and ligamentous uterine leiomyoma.
Interventions: Diagnostic laparoscopy demonstrated a solid mass within the right adnexa consistent with ligamentous leiomyoma. Ureterolysis was required to safely mobilize the ligamentous leiomyoma from its retroperitoneal investments. Myomectomy was performed with conventional laparoscopic technique.
Measurements and Main Results: Excision of the ligamentous leiomyoma was successful with estimated blood loss of 75 cc and total operative time of 120 minutes. Final pathology was consistent with leiomyoma.
Conclusion: Include leiomyoma within the differential diagnosis in patients with MRKH presenting with an adnexal mass. Excision of leiomyomas in patients with MRKH is feasible using conventional laparoscopic techniques.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:36 PM

Category: Fibroids

SubCategory: Laparoscopy

Laparoscopic Cervical Myomectomy Techniques

Sullender R,[*1] Varon S,[2] Pickett C*[1]. [1]*University of California at San Diego, La Jolla, CA;* [2]*OBGYN, University of California at San Diego, La Jolla, CA*
*Corresponding author.

Study Objective: To illustrate how cervical fibroids can be safely removed with minimal blood loss using a laparoscopic approach.
Design: Stepwise demonstration of the surgical techniques with narrated video footage.
Setting: Approximately 80% of women will have fibroids by the age of 50. Cervical fibroids are less common than uterine body fibroids and may present unique challenges. Understanding methods to reduce blood loss during laparoscopic resection is essential.
Patients or Participants: 39-year-old G1P1 female with a symptomatic cervical fibroid desiring removal.
Interventions: We discuss our laparoscopic approach to a large cervical fibroid with stepwise demonstration of strategies to minimize blood loss including:
- Retroperitoneal dissection to identify uterine arteries for placement of bilateral vascular clamps
- Placement of bilateral utero-ovarian vascular clamps
- Injection of dilute vasopressin
We also discuss techniques unique to cervical myomectomies including placement of a cervical dilator to avoid suture ligating the cervix closed during the repair.
Measurements and Main Results: N/A.
Conclusion: We present an easy-to-follow video with simple techniques for minimizing blood loss during a laparoscopic cervical myomectomy.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:42 PM

Category: Fibroids

SubCategory: Laparoscopy

The Evaluation and Treatment of a Small Bowel Resection in the Setting of a Torsed Uterine Fibroid

Kopkin R,[*1] Jackson J,[1] Li L,[1] Thigpen B,[2] Sunkara S,[3] Nassif J*[1]. [1]*Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX;* [2]*Minimally Invasive Gynecology Surgery, Baylor College of Medicine, Houston, TX;* [3]*Minimally Invasive Gynecological Surgery, Baylor College of Medicine, Houston, TX*
*Corresponding author.

Study Objective: Demonstrate the preoperative evaluation and surgical management of a small bowel obstruction (SBO) caused from a necrotic, torsed fibroid.
Design: Surgical video.
Setting: Tertiary care operating room using standard equipment for laparoscopic surgery and three 5mm and one 10mm trocars, a 0-degree laparoscope, and bipolar device.
Patients or Participants: 38yo female with pelvic pain, bloating, nausea, and emesis found to have a SBO and a torsed, pedunculated fibroid.
Interventions: She failed conservative inpatient management and underwent a laparoscopic myomectomy and lysis of adhesions. Intraoperatively, numerous loops of bowel and omentum were adherent to the uterine fibroid. The adhesions were filmy and avascular and were easily taken down with blunt dissection. The thin stalk of the fibroid was torsed multiple times and the fibroid had carneous degeneration. A ligasure device was used to coagulate and ligate the stalk. The fibroid was morcellated in an endocatch bag through an extended 10mm port incision. General surgery was consulted intraoperatively to run the bowel, which was found to be intact with no serosal injuries.
Measurements and Main Results: She did well post operatively, tolerating a regular diet on post-operative day (POD) one and discharged to home POD2. Outpatient follow-up at two and six weeks postoperatively with no recurrence symptoms. Surgical pathology showed subserosal leiomyoma with extensive necrosis. She is being followed by both reproductive endocrinology and minimally invasive gynecologic surgery for future surgical management for stage IV endometriosis.
Conclusion: While uterine fibroids can be asymptomatic, patients can experience associated pelvic fullness, pressure, and/or pain. Type 7 subserosal fibroids with thin stalks are at increased risk of torsing. Resultant necrosis and inflammation can lead to adhesion formation. Bowel obstruction is rare, but must be kept on a differential in the workup of a patient with nausea and vomiting and a known pelvic mass. Surgical removal of the fibroid and enterolysis is necessary to restore bowel function.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:48 PM

Category: Fibroids

SubCategory: Laparoscopy

Laparoscopic Hysterectomy for Cervical Fibroids: A Learning Point

Gnade CM,[*1] Kasper K*[2]. [1]*OBGYN, MIGS, Indiana University, Indianapolis, IN;* [2]*OBGYN, MIGS, Indianapolis, Indianapolis, IN*
*Corresponding author.

Study Objective: To demonstrate how to surgically triage complications and perform a total laparoscopic hysterectomy for a large cervical fibroid.
Design: Stepwise surgical video.
Setting: Operating theatre.
Patients or Participants: 36-year-old G0 female with a history of aborted myomectomy and failed uterine artery embolization due to a 10 cm cervical fibroid with acute blood loss anemia requiring blood transfusions desiring definitive management with a hysterectomy.
Interventions: A total laparoscopic hysterectomy was performed highlighting the following:
-Securing blood supply early to decrease blood loss
-Adequate retroperitoneal dissection and lateralization of the ureter from the cervical fibroid
-Considering laparoscopic clips for hemostasis if near the ureter
-Utilizing sponge stick and laparoscopic tenaculum for uterine manipulation and colpotomy
-Urology consultation and ureteral stent placement without sequelae given concern for thermal spread to the ureter

Measurements and Main Results: N/A.
Conclusion: This video demonstrates techniques for management of a hysterectomy for a cervical fibroid.

VIDEO SESSION 08 - Fibroids

(3:15 PM — 4:15 PM), 3:54 PM

Category: Fibroids

SubCategory: Robotics

Robotic-Assisted Myomectomy of a Retroperitoneal Broad Ligament Fibroid in a Patient with Mayer-Rokitanksy-Kuster-Hauser Syndrome

Gould C, Chang-Patel EJ, Palacios-Helgeson LK, Pendergrass M.*
Legacy Health, Portland, OR
*Corresponding author.

Study Objective: To demonstrate a preoperative and surgical approach to a broad ligament fibroid in a patient with Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome.
Design: Case report.
Setting: Academic-affiliated community hospital.
Patients or Participants: A 47-year-old with MRKH presenting with a palpable pelvic mass and stress urinary incontinence desiring surgical management.
Interventions: Robotic-assisted myomectomy of a broad ligament fibroid in a patient with MRKH.
Measurements and Main Results: Successful minimally invasive myomectomy of a broad ligament fibroid through a robotic-assisted laparoscopic approach.
Conclusion: Patients with MRKH syndrome are still at risk of development of fibroids or leiomyomas. It is important to keep this on the differential for a patient presenting with a palpable pelvic mass. It is also critical to assess the renal system as these patients may have renal agenesis or unaffected kidneys and ureters, which are important to identify preoperatively to avoid iatrogenic injury during surgery.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment and Extraction

(3:15 PM — 4:15 PM), 3:18 PM

Category: Reproductive Medicine

SubCategory: Basic Science/Education

Müllerian Anomalies: For the MIGS Surgeon

Horton T, Palin HS, Chen A, Carrubba AR. Medical and Surgical Gynecology, Mayo Clinic Florida, Jacksonville, FL*
*Corresponding author.

Study Objective: Review the embryology of the female reproductive tract, in order to better understand Mullerian anomalies and how they can occur. This video illustrates fusion errors and reviews tips for surgical management.
Design: N/A.
Setting: N/A.
Patients or Participants: This video provides surgical examples from three patients with Mullerian anomalies.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: While uncommon, Mullerian anomalies can be encountered during gynecologic surgery. Modifications to the surgical approach may be warranted.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment & Extraction

(3:15 PM — 4:15 PM), 3:24 PM

Category: Reproductive Medicine

SubCategory: Laparoscopy

Surgical Management of a Symptomatic Müllerian Anomaly

Sutaria T, Arnolds K. Gynecology, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate the workup, anatomy, and surgical technique during resection of a non-communicating distal uterine remnant, endometriosis, and hematosalpinx in a patient with a symptomatic Müllerian anomaly.
Design: Pre-operative imaging, operative video footage and still photographs of surgical anatomy from are demonstrated. Videography and photography consent was obtained. Institutional review board approval was not required.
Setting: Per the 2021 American Society for Reproductive Medicine Müllerian Anomalies classification system, this patient had a left unicornuate uterus with a right distal uterine remnant with functional endometrium. Additionally, she had a right hematosalpinx and nodule of endometriosis on the right pelvic sidewall. This video illustrates her workup and ultimate laparoscopic, fertility-sparing surgery to treat her pelvic pain at a multispecialty academic medical center in the United States. This outpatient surgery was conducted in lithotomy position under general anesthesia.
Patients or Participants: The patient featured in this video is a twenty-four-year-old para zero with acute-on-chronic right lower quadrant pelvic pain.
Interventions: This patient underwent a laparoscopic resection of a right-sided non-communicating distal uterine remnant with functional endometrium, excision of endometriosis, and right salpingectomy.
Measurements and Main Results: The main result of this patient's intervention is fertility-sparing resection of symptomatic pelvic pathology.
Conclusion: It is important to utilize diagnostic tools to illustrate pelvic anatomy and optimize surgical planning. Pre-operative identification of associated non-gynecologic anomalies can help to decrease operative time and improve patient outcomes. Laparoscopic resection of uterine remnants is a viable fertility-preserving treatment for patients with symptomatic Müllerian anomalies.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment & Extraction

(3:15 PM — 4:15 PM), 3:30 PM

Category: Basic Science/Education

SubCategory: Robotics

Exploring the Pararectal Space Made Simple

Hui M, Leon MG. Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: To provide an educational video reviewing the anatomy of the pararectal space and demonstrating its dissection, with particular attention describing the particular pathology that can be found in the pararectal spaces.
Design: Narrated video footage.
Setting: Single, academic university hospital.
Patients or Participants: Two patients undergoing robotic-assisted total laparoscopic hysterectomy.
Interventions: Dissection of the pararectal space at the time of robotic-assisted total laparoscopic hysterectomy for benign condition.
Measurements and Main Results: N/A.

Conclusion: Knowledge of the pararectal space is critical for the advanced gynecologic surgeon. Accessing the pararectal space is dependent on the particular pathology, and knowledge of these spaces is critical when navigating complex pelvic disease.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment & Extraction

(3:15 PM — 4:15 PM), 3:36 PM

Category: Basic Science/Education

SubCategory: Other

O-RADS: A Uniform Approach to the Adnexal Mass

Palin HS,[*,1] Horton T,[1] Carrubba AR,[1] Dinh T[2]. [1]Medical and Surgical Gynecology, Mayo Clinic Florida, Jacksonville, FL; [2]Department of Medical & Surgical Gynecology, Mayo Clinic Florida, Jacksonville, FL*
*Corresponding author.

Study Objective: To describe the adnexal mass risk stratification system known as the Ovarian-Adnexal Imaging and Reporting Data Systems (O-RADS) created by the American College of Radiologists and give clinical scenarios illustrating its use for the benign gynecologist.
Design: This is an educational video that seeks to describe a classification system for the adnexal mass that assists gynecologists in counseling patients about risk of malignancy and outlines potential management options.
Setting: This video was created with ultrasound images and intraoperative photos from an academic tertiary care center. These images are utilized to exemplify the potential use of a risk stratification system for adnexal masses. Each classification tier O-RADS 0-5 is explained with a clinical corollary.
Patients or Participants: The ultrasound photos and intraoperative videos utilized were from patients who underwent adnexectomy at a tertiary care center from June 2021 to January 2023.
Interventions: These patients underwent treatment that is currently standard of care, no alternate interventions were performed in conjunction with this video.
Measurements and Main Results: These ultrasound images correspond to real patient encounters with established histopathologic diagnoses so that the learner may see the application of the O-RADS system in clinical scenarios.
Conclusion: The use of a common lexicon to describe ovarian and paraovarian lesions will assist in creating a uniform approach to the adnexal mass. Currently, vague ultrasound descriptions and varied referral patterns plague this type of pathology which would greatly benefit from a strategic approach based on risk of malignancy.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment & Extraction

(3:15 PM — 4:15 PM), 3:42 PM

Category: Tissue Containment & Extraction Technologies

SubCategory: Laparoscopy

Mastering Morcellation: Site Selection and Standardized Technique

Silverstein RG,[*,1] Kwon C,[2] McClurg A,[1] Dasouki Abu-Alnadi N[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Rutgers University, New Brunswick, NJ*
*Corresponding author.

Study Objective: To identify various morcellation sites and review techniques for optimal contained morcellation.
Design: Video demonstration.
Setting: Operating room.
Patients or Participants: N/A.
Interventions: None.
Measurements and Main Results: This video provides a standardized framework for choosing a morcellation site and reviews site-specific techniques for contained morcellation that maximize efficiency and minimize surgeon frustration.
Conclusion: Morcellation can be performed efficiently and safely from multiple sites. The decision for site is based on specimen, anatomy, and surgeon preference. With tips and practice, contained morcellation can be performed for almost any specimen.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment & Extraction

(3:15 PM — 4:15 PM), 3:48 PM

Category: Tissue Containment & Extraction Technologies

SubCategory: Laparoscopy

Simplified Laparoscopic Abdominal Morcellation ("SLAM"): A Technique to Facilitate Transvaginal Specimen Extraction

Schneyer R, Hamilton KM, Siedhoff MT. Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA*
*Corresponding author.

Study Objective: To discuss the benefits of transvaginal specimen extraction, to review the simplified laparoscopic abdominal morcellation ("SLAM") technique, and to demonstrate how "SLAM" can facilitate transvaginal extraction during laparoscopic myomectomy and laparoscopic supracervical hysterectomy.
Design: Educational video highlighting surgical techniques.
Setting: Academic medical center.
Patients or Participants: We present two patient cases in which the "SLAM" approach is used to facilitate transvaginal specimen extraction during laparoscopic gynecologic surgery.
Interventions: "SLAM" followed by transvaginal specimen extraction via a posterior colpotomy.
Measurements and Main Results: We present a stepwise approach to the "SLAM" technique: 1) Insert a scalpel through an accessory port under direct visualization, 2) use two laparoscopic tenacula or graspers with teeth to grasp the specimen and hold tension, and 3) cut the specimen into longitudinal strips, regrasping the specimen as needed to maintain tension perpendicular to the cutting direction. We then present applications of this morcellation technique in conjunction with transvaginal specimen extraction, for a 12cm degenerated fibroid after myomectomy and for an 18-week size fibroid uterus after supracervical hysterectomy. We demonstrate how the "SLAM" approach allows for morcellation of large specimens in a controlled and efficient manner without the dispersal of small tissue fragments, thereby minimizing potential seeding of the peritoneal cavity. The large size of these specimens and the available space in the pelvis would make primary vaginal morcellation difficult in these cases, so starting with "SLAM" facilitates completing the remainder of the morcellation vaginally. In these cases, we also demonstrate techniques for making the posterior colpotomy and for colpotomy closure using barbed suture.
Conclusion: We have demonstrated the use of the "SLAM" technique in laparoscopic myomectomy and laparoscopic supracervical hysterectomy prior to transvaginal extraction. This approach may increase the feasibility and improve efficiency of transvaginal extraction for very large or degenerated specimens, while preventing dispersal of tissue fragments.

VIDEO SESSION 09 - Reproductive Medicine / Tissue Containment & Extraction

(3:15 PM — 4:15 PM), 3:54 PM

Category: Tissue Containment & Extraction Technologies

SubCategory: Laparoscopy

Bilateral Ovarian Dermoid Cystectomy

Alzamora MC,[*,1] Gaddam NG,[2] Robinson JK[3]. [1]Obstetrics and Gynecology, MedStar Washington Hospital Center, Washington, DC; [2]Urogynecology, MedStar Washington Hospital Center, Washington, DC; [3]MIGS, Medstar Washington Hospital Center, Washington, DC*
*Corresponding author.

Study Objective: To illustrate different dissection techniques during a bilateral ovarian cystectomy that prevent rupture and spillage of cyst contents, minimize blood loss and preserve healthy ovarian tissue.
Design: Video.
Setting: Hospital operating room.
Patients or Participants: 31-year-old G0 presenting with worsening dysmenorrhea, found to have bilateral ovarian dermoid cysts.
Interventions: The patient had a laparoscopic excision of bilateral dermoid cysts.
Measurements and Main Results: After insertion of a containment bag to minimize spillage of cyst contents, bilateral ovarian cystectomy was performed using different dissection techniques.
Conclusion: Judicious use of vasopressin can be used for both hemostasis and hydrodissection. Adequate coordination of surgeon and assistant for traction and counter traction allows for a better visualization of the dissection plane. Spillage of contents into the peritoneal cavity can be minimized by placing the cysts in a containment bag prior to dissection. Introduction of a bag through a posterior colpotomy allows for positioning that optimizes cyst containment. Performing a purse-string suture to approximate the edges of the ovarian cortex facilitates hemostasis and restitution of ovarian anatomy.

VIDEO SESSION 10 - Robotics / Urogynecology

(3:15 PM — 4:15 PM), 3:18 PM

Category: Robotics

SubCategory: Other

Robotic Surgery: Excision of a Recurrent Pelvic Abscess and Fistulous Tract

Robbins J,[*,1] Lowe C,[2] Ocampo JE[1]. [1]OB/GYN, Kaiser Permanente, South San Francisco, South San Francisco, CA; [2]OB/GYN, Kaiser Permanente, San Francisco, San Francisco, CA*
*Corresponding author.

Study Objective: To identify anatomical landmarks in a patient with advanced adhesive disease and demonstrate the concomitant use of cystoscopy with the daVinci Robot to extract a fistula between the bladder and a recurrent pelvic abscess.
Design: Educational Video.
Setting: Academic Institution.
Patients or Participants: One patient.
Interventions: Robotic Assisted Laparoscopic Excision of Pelvic Mass and Fistula, Ureterolysis, Cystoscopy, Lysis of Adhesions.
Measurements and Main Results: Production of educational surgical video.
Conclusion: Surgical video produced to demonstrate various surgical techniques to help dissect frozen pelvis: retroperitoneal dissection, ureterolysis, entry of pararectal space and rectovaginal space. This video also outlined steps for using cystoscopy with robotic surgery to excise a fistulous tract from the bladder to a recurrent pelvic abscess.

VIDEO SESSION 10 - Robotics / Urogynecology

(3:15 PM — 4:15 PM), 3:24 PM

Category: Robotics

SubCategory: Reproductive Medicine

Robotic-Assisted Total Laparoscopic Hysterectomy for Placenta Accreta Spectrum

Emont JP, Baxter B, Arora C. Department of Obstetrics and Gynecology, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To illustrate surgical technique when performing a minimally invasive hysterectomy for an early placenta percreta with an obliterated anterior cul-de-sac.
Design: Surgical educational video.
Setting: Tertiary medical center.
Patients or Participants: 44-year-old G3P2002 at 12+1 weeks gestation (by IVF transfer) with history of an abdominal myomectomy with anterior cavity entry and one prior low-transverse cesarean section with concern for early anterior placenta percreta on MRI.
Interventions: The patient underwent robotic-assisted total laparoscopic hysterectomy and bilateral salpingectomy for definitive management of placenta percreta.
Key surgical steps include:
1. Pre-operative uterine artery embolization to decrease blood loss.
2. A robotic approach to allow for use of the 4th arm for gentle traction of the uterus without use of a uterine manipulator.
3. Seal uterine blood supply early to decrease uterine and placental perfusion prior to starting the anterior dissection.
4. Restrict placement of the uterine manipulator until critical portions of the case are complete.
5. Limit advancement of the uterine manipulator tip only to the length of the internal os so as not to disrupt the placenta percreta but still aid in anterior dissection and ligation of the uterine arteries.
6. Begin dissection of the obliterated anterior cul-de-sac posteriorly to lateralize the ureter and to identify the uterine artery. Tunneling anteriorly over the uterine artery enables access to the vessels in case of bleeding as well as safe dissection of the bladder.
Measurements and Main Results: Case completed successfully with estimated blood loss of 300cc.
Conclusion: Minimally invasive hysterectomy is both safe and feasible for first trimester placenta percreta with minimal blood loss, using the key steps of pre-operative uterine artery embolization, addressing the upper uterine blood supply prior to placement of a uterine manipulator, limiting the manipulator tip length to only the cervix, and addressing the obliterated anterior cul-de-sac with a posterior approach to lateralize the ureter and identify the uterine arteries.

VIDEO SESSION 10 - Robotics / Urogynecology
(3:15 PM — 4:15 PM), 3:30 PM

Category: Robotics

SubCategory: Urogyn/Pelvic Floor Disorders

Robotic Intrafascial Colpotomy, Edge to Edge Closure Plus Peritoneal Graft for Hysterectomy with Sacrocolpopexy to Minimise Mesh Erosion

Chou D,[1] Kalantan A,[,1] Bukhari M,[1] McSweeney A,[1] Robertson JA,[1] Listijono D,[1] Sarofim M,[1] Choi S,[1] Rosen D,[1] Cario G,[1] Moore K[2].*
[1]Gynaecology, Sydney Womens Endosurgery Centre, Sydney, NSW, Australia; [2]Pelvic floor unit, St George Hospital, Sydney, Australia
*Corresponding author.

Study Objective: Pelvic organ prolapse (POP) is a common issue in women, affecting approximately 50% of women by the age of 50 with a reported lifetime risk of surgery for as high as 19%. Due to its high success rate and durability, laparoscopic sacrocolpopexy is considered a cornerstone of management of such patients. Conventional wisdom has been that concomitant hysterectomy, at the time of apical prolapse surgery, decreases the risk of recurrence and eliminates the need for future management of uterine and cervical pathologies. However, concomitant hysterectomy at the time of laparoscopic mesh sacrocolpopexy is still a controversial matter as several studies have shown a higher risk of complications.
This innovative surgical technique aims to reduce the risk of mesh erosion at the vaginal vault. The fundamental elements of this method are the strengthening of the vaginal cuff and interposition of a barrier between the mesh and vaginal vault epithelium using a pedicled peritoneal graft harvested from the uterovesical fold.
Design: Video Presentation.
Setting: Operating theatre.
Patients or Participants: N/A.
Interventions: The proposed technique involves four unique procedural steps:
- Creation of the pedicled peritoneal graft: Two horizontal incisions are made, 3 cm apart, on the uterovesical fold peritoneum.
- Intrafascial colpotomy: Colpotomy at the level of internal os preserving the pubocervical fascia and uterosacral ligaments.
- Edge to edge closure of the cuff: Sutures are placed in an alternating fashion, taking the full thickness of the vaginal vault, followed by a superficial suture placement that brings the fascial edges together. (pubocervical fascia, rectovaginal septum and uterosacral ligaments).
- Peritoneal graft placement on the vaginal vault: The pedicled peritoneal graft is sutured to the vaginal vault with interrupted sutures to interpose between the vaginal vault and the mesh graft.

Measurements and Main Results: N/A.
Conclusion: This technique is in its early development and follow-up data will be sought to assess the long-term outcomes.

VIDEO SESSION 10 - Robotics / Urogynecology
(3:15 PM — 4:15 PM), 3:36 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

Robotic Repair of a Complex Vesico-Vaginal Fistula.

Jalloul R,[,1] Ayoub H[2]. [1]Department of Obstetrics, Gynecology and Reproductive Sciences, The University of Texas Health Science Center at Houston, Houston, TX; [2]Department of Surgery, Division of Urology, The University of Texas Health in Houston, Houston, TX*
*Corresponding author.

Study Objective: This surgical educational video will demonstrate the robotic repair of a vesicovaginal fistula.
Design: Surgical Video.
Setting: Tertiary Referral Hospital.
Patients or Participants: 47-year-old female presented to the emergency room with a history of hysterectomy for fibroids, complicated by hematuria and incontinence 7 days later. She was found to have a 7 cm bladder defect and right distal ureteral obstruction. She underwent an exploratory laparotomy with complex repair of the bladder, right uretero-neocystotomy with stent placement and omental flap. Unfortunately, 3 weeks later she presented to our office with continuous urinary loss. A CT urogram demonstrated contrast from the bladder extending to the vaginal canal consistent with a large vesicovaginal fistula.
Interventions: Cystoscopy, bilateral ureteral stents, guide placement into the fistulous tract, robotic assisted fistulous tract excision and fistula repair with J omental flap.
Measurements and Main Results: 3 months follow up with successful repair.
Conclusion: Robotic assisted surgery provided adequate visualization and exposure to perform successfully, a complex vesicovaginal fistula repair.

VIDEO SESSION 10 - Robotics / Urogynecology
(3:15 PM — 4:15 PM), 3:42 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

Technique for Complicated Bladder Dissection: *Bladder Transillumination with Firefly® Technology*

Dadrat ACE,[,1] Duarte MG,*[,2] McKay E[3]. [1]Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY; [2]Department of Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY; [3]Urogynecology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: The demonstration of an alternative technique for bladder margin visualization using Robotic FireFly® Technology.
Design: Surgical video.
Setting: This surgery is performed at a tertiary academic referral center.
Patients or Participants: 56-year-old gravida 6 para 4-0-2-4 postmenopausal woman with pelvic organ prolapse, rectocele, and stress urinary incontinence. Patient previously managed conservatively with a size 3 pessary, requesting surgical management due to worsening of her symptoms. Prior surgical history was significant for one cesarean delivery.
Interventions: The patient underwent robotic-assisted laparoscopic supracervical hysterectomy, sacrocolpopexy, posterior repair and perineoplasty. Both ureters were identified trans-peritoneally. Bilateral salpingectomy, transection of the round ligaments, uteroovarian ligament ligation and skeletonization of the uterine arteries were performed. Dense adhesions were noted between the bladder and lower uterine segment. The bladder was retrogradely filled with normal saline to improve anatomic visualization. The bladder was noted to be deviated towards the right aspect of the uterus, appearing to extend posterior to the uterine body. Dissection was carried on while the surgical assistant performed cystoscopy. While the cystoscope light was on, the Firefly mode of the robotic camera was activated allowing for transillumination of the bladder and thus improving visualization of the tissue edges.
Measurements and Main Results: The bladder was clearly visualized, dissection was carried on without surgical injuries, and the uterine body was amputated, completing the hysterectomy. The remaining portions of the surgical procedure were subsequently performed. The patient was discharged home the same day. Two months after surgery the patient was feeling well with no complaints.

Conclusion: Concurrent use of white light cystoscopy and FireFly imaging technology is an easy, safe and cost-effective method of demarcating bladder margins during difficult dissections.

VIDEO SESSION 10 - Robotics / Urogynecology
(3:15 PM — 4:15 PM), 3:48 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

Robotically Assisted Vesicovaginal Fistula Repair

Ranieri G, Mansour T, Yi J, Magtibay P. Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ*
*Corresponding author.

Study Objective: This video highlights the principles of robotic assisted repair of vesicovaginal fistula as well as pre-operative work-up and post-operative considerations.
Design: Surgical video presentation.
Setting: Academic tertiary care center.
Patients or Participants: This patient is a 55-year-old G3P3 who underwent robotic hysterectomy for definitive management of post-menopausal bleeding. Two weeks post-operatively, she presented with a delayed bladder injury and subsequent vesicovaginal fistula.
Interventions: This video demonstrates the surgical techniques used for the robotic-assisted repair of a vesicovaginal fistula. Key surgical principles include bladder mobilization, identification and resection of the fistulous borders, tension-free and multi-layer closure, watertight repair, colpotomy closure, and the consideration of omental or peritoneal flap. The video also provides an overview of pre-operative diagnosis and post-operative care.
Measurements and Main Results: Robotic repair of vesicovaginal fistula with no intra-operative or post-operative complications. CT cystogram performed 2 weeks post-operatively revealed an intact bladder with no evidence of residual or recurrent fistula.
Conclusion: Vesicovaginal fistula is a rare yet significant complication that may occur after a benign hysterectomy. Robotic assisted repair is a safe, feasible and minimally invasive approach that provides favorable patient outcomes. Knowledge of key surgical principles and post operative considerations is critical in ensuring successful surgical outcomes.

VIDEO SESSION 10 - Robotics / Urogynecology
(3:15 PM — 4:15 PM), 3:54 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

A Novel Technique for Removal of Intravesical Foreign Body

Burger M,[1] Attai S,[2] Attuwaybi I,[2] Eddib A[3]. [1]Minimally Invasive Gynecologic Surgery, Kaleida Health, Williamsville, NY; [2]University at Buffalo, Buffalo, NY; [3]Kaleida Health, Buffalo, NY*
*Corresponding author.

Study Objective: To present a stepwise method for surgical management of intravesical foreign body removal using minimally invasive technique.
Design: Surgical education video, case report.

Setting: Academic teaching institution.

Patients or Participants: 75-year-old female was being treated for recurrent urinary tract infections and refractory overactive bladder. Patient had an extensive urologic surgical history and past procedures includes retropubic suspension procedure, sacrocolpopexy, TOT sling, and interstim. She was found to have an enlarging stone attached to surgical tack on cystoscopy. X-ray showed multiple surgical tacks in the pubic bone along the site of previous retropubic suspension.

Interventions: The film presents a standardized method to perform excision of a foreign body invading the bladder from the retropubic space (such as from retropubic suspensions: Burch, sling, etc) using 6 steps:
(1) Perform cystoscopy and place stents
(2) Dissection in space of Retzius
(3) Extraperitoneal cystotomy to remove foreign body
(4) Two-layer closure of cystotomy with absorbable suture
(5) Cystoscopy to confirm closure intact and not involving or too close to ureteral orifices and distal ureter
(6) Removal of stents at end of procedure and maintain indwelling catheter for 2 weeks

Measurements and Main Results: This was an example of successful robotic-assisted removal of surgical tack invading bladder wall. Patient was discharged on POD#0 and postoperative period was uneventful. Post-operative cystogram 2 weeks later confirmed healed cystotomy prior to catheter removal.

Conclusion: Robotic assisted laparoscopic excision of a retropubic eroding foreign body into the bladder is a safe and effective minimally invasive treatment option. This approach can easily be used to remove other types of commonly encountered foreign bodies that result in stone formation such as sutures and mesh.

WEDNESDAY, NOVEMBER 8, 2023

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 11:33 AM

Category: Endometriosis

SubCategory: Robotics

Robotic Intracorporeal Single Staple Anastomosis (RiSSA) in Rectosigmoid Endometriosis

Tsepov D,[1] Youssef Y,[2] Miscovic D,[3] Moawad G[4]. [1]The Princess Grace Robotic Endometriosis Centre, HCA Healthcare, London, United Kingdom; [2]Obstetrics and Gynecology, Hurley medical center/ Michigan State University, Flint, MI; [3]The Wellington Hospital, HCA Healthcare, London, United Kingdom; [4]Department of Obstetrics and Gynecology, George Washington University, Washington, DC*
*Corresponding author.

Study Objective: To demonstrate two different robotic assisted bowel resection techniques using the natural orifice specimen extraction (NOSE) approach in cases of deep endometriosis of the rectosigmoid.
Design: Video article.
Setting: Endometriosis referral center.
Patients or Participants: Two patients.
Interventions: Our first case highlights the steps for double stapling technique (DST) with intracorporeal side-to-end anastomosis. A linear stapler is used to transect the distal and proximal ends of the bowel segment. An abdominal trocar site is extended, and the anvil is introduced. The specimen is retrieved transvaginal. An EEA stapler introduced transanal and a side to end anastomosis is performed.
The second case demonstrates a single stapling technique (SST) with a double purse string suture. A Marcelin tape is tied above the proximal margin of the bowel segment to be resected and the rectum is washed thoroughly with saline. The bowel Segment is excised with monopolar scissors. The specimen is retrieved through the rectum. A purse string suture and an endoloop tie are placed to secure the anvil and the spike of the EEA stapler. The stapler is fired, and an end-to-end anastomosis is performed.
Measurements and Main Results: Patients had an uncomplicated postoperative recovery.

Conclusion: Staple lines intersections are weak points with decreased vascularity and increased possibility of leakage. The higher number of staple lines intersections is associated with anastomotic leakage. The use of SST for rectal anastomosis may reduce anastomotic complications and can be cost effective by using fewer surgical staples; however, larger studies are needed to confirm these findings in endometriosis cases.

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 11:39 AM

Category: Endometriosis

SubCategory: Robotics

Ultrasound Integrated Robotic Identification of Sigmoid Colon Deep Endometriosis in the Absence of Posterior Cul De Sac Obliteration

Hardman DE,[*,1] Bennett R,[2] Mikhail E*[3]. [1]*Obstetrics & Gynecology, University of South Florida, Tampa, FL;* [2]*Colon and Rectal Surgery, University of South Florida, Tampa, FL;* [3]*Minimally Invasive Gynecologic Surgery, University of South Florida, Tampa, FL*
*Corresponding author.

Study Objective: Our study objectives include discussing an atypical presentation of a patient with a deep endometriosis lesion of the sigmoid colon, demonstrating the use of intraoperative ultrasound to identify deep endometriosis lesions on the rectosigmoid colon and using intraoperative ultrasound to guide surgical decision making.
Design: Intraoperative robotic integrated ultrasound during robotic excision of isolated deep infiltrating endometriosis on the sigmoid colon.
Setting: N/A.
Patients or Participants: Video Presentation of surgical management of a patient with deep endometriosis of sigmoid colon.
Interventions: The intervention performed includes identification and excision of rectosigmoid deep infiltrating endometriosis with use of robotic integrated ultrasound.
Measurements and Main Results: N/A.
Conclusion: When performing surgery for bowel endometriosis, it is important to perform a complete pre-operative evaluation to determine the extent of disease and the necessity of a multidisciplinary approach. There can be a discrepancy between clinical exam and imaging compared to the pathology present at the time of surgery. Integrated intra-operative ultrasound can provide additional information to the surgeon and can play a role in surgical decision making when the extent of bowel endometriosis is unclear.

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 11:45 AM

Category: Endometriosis

SubCategory: Robotics

Deep Infiltrating Endometriosis Involving the Bowel - A Unique Resection and Repair

Diggs A,[1] *Seaman SJ,*[*,1] *Gedeon M,*[2] *Advincula A*[1]. [1]*OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY;* [2]*Surgery, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To describe a unique surgical approach to the management of deep infiltrating endometriosis (DIE) involving the bowel with an emphasis on types of bowel resection and considerations for repair.
Design: Case report.
Setting: Tertiary medical center.
Patients or Participants: 39-year-old G0 with chronic pelvic pain in the setting of adenomyosis and endometriosis with suspected bowel DIE who was planned for surgical management with a hysterectomy and bowel resection.
Interventions: The patient underwent a robotic-assisted total laparoscopic hysterectomy, bilateral salpingectomy, extensive lysis of adhesions, a discoid resection of bowel DIE with a hand sewn end to end repair. Key surgical steps illustrated include:
- Resection of the entire endometriotic area of bowel until clear margins are confirmed as determined visually and by palpation.
- Bowel dissection and mobilization performed.
- Free both proximal and distal ends of the bowel anteriorly, posteriorly, and laterally.
- Take care to preserve vasculature and the hypogastric nerve.
- Oppose bowel ends for anastomosis with confirmation of a straight and unnarrowed bowel lumen.
- Internal (mucosal) layer closed with 3-0 vicryl Connell sutures.
- External layer closed with 3-0 v-lock barbed suture.
- Air leak test and sigmoidoscopy performed to confirm absences of bubbles, angulation or narrowing.

Measurements and Main Results: Patient discharged home on postoperative day two after return of bowel function and had an uncomplicated post-operative course. She was seen at 2, 6, and 12 weeks postoperatively and was recovering well with complete resolution of her pelvic pain symptoms.
Conclusion: Bowel DIE can be effectively managed with minimally invasive surgery. Considerations for resection include the size and depth of invasion. Considerations for repair include ensuring bowel angulation or narrowing are avoided. A tension-free hand sewn end-to-end closure is an excellent management option for large wide discoid or segmental resections.

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 11:51 AM

Category: Endometriosis

SubCategory: Laparoscopy

Clinical Correlation: Ultrasound Techniques and Characteristics of Cardinal Ligament Endometriosis with Applied Surgical Techniques

Bennett MR,[*,1] *Haworth LA,*[2] *Barger AE,*[2] *Hudgens JL*[2]. [1]*Division of Advanced Gynecologic Surgery, Eastern Virginia Medical School, Norfolk, VA;* [2]*Advanced Gynecologic Surgery Center, Eastern Virginia Medical School, Norfolk, VA*
*Corresponding author.

Study Objective: Demonstrate reproducible methods to identify cardinal ligament endometriosis via ultrasound imaging. Review ultrasound images of cardinal ligament endometriosis and review intraoperative surgical images that correlate the ultrasound findings.
Design: This video will review ultrasound images from several patients with cardinal ligament endometriosis and adjacent fibrosis. The video starts with and preoperative ultrasound assessment. The lateral compartment and cardinal ligament disease is best evaluated with the transvaginal probe in the transverse view at the level of the cervix. Intraoperative surgical video is shown to correlate with the preoperative imaging with an emphasis on the use of avascular spaces to conduct safe ureterolysis.
Setting: Ultrasound imaging is in the office setting prior to surgical excision with the patient in dorsal lithotomy positioning. Surgical techniques occur in the operating room while the patient in dorsal lithotomy positioning.
Patients or Participants: Patient presentations concerning for endometriosis who are being assessed with perioperative ultrasound.

Interventions: N/A.
Measurements and Main Results: Cardinal ligament endometriosis and secondary fibrosis can be assessed and identified preoperatively on ultrasound imaging.
Conclusion: This video reviews reproducible movements to assist in the identification of cardinal ligament endometriosis with ultrasound to improve preoperative planning. Cardinal ligament endometriosis is identified better on ultrasound than magnetic resonance imaging (MRI). The nodule is best seen in the transverse view adjacent to the cervix. The use of avascular spaces during ureterolysis assist with safe dissection of the nodule.

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 11:57 AM

Category: Endometriosis

SubCategory: Pelvic Pain

Laparoscopic Excision of Deeply Infiltrative Bladder Endometriosis Utilizing the Space of Retzius

Haworth LA, Bennett MR, Barger AE, Woo JJ, Hudgens JL. Advanced Gynecologic Surgery Center, Eastern Virginia Medical School, Norfolk, VA*
*Corresponding author.

Study Objective: To demonstrate an interesting case of laparoscopic excision of deeply infiltrative bladder endometriosis after previous supracervical hysterectomy utilizing the Space of Retzius.
Design: Single video case report of a patient known to our academic teaching institution for 1 year.
Setting: Main OR, dorsal lithotomy position.
Patients or Participants: Convenience sample of a single 45-year-old G3P2 with retained deeply infiltrative bladder endometriosis after previous supracervical hysterectomy who presented with continued pelvic pain.
Interventions: We describe our preoperative and surgical approach to laparoscopic excision of deeply infiltrative bladder endometriosis. Preoperative transabdominal US and MRI were utilized to assess the anatomical relationships between the suspected endometriotic nodule and the surrounding pelvic structures. Preoperative imaging was found to be congruent with intraoperative findings. We review suturing, traction/countertraction, palpation, and energy device techniques that facilitated the safe and effective removal of the endometriotic nodule without causing injury to the adjacent bladder.
Measurements and Main Results: Pathology findings described the specimen as a 3.7 × 3.2 × 1.5 cm endometrial implant.
Conclusion: Understanding preoperative imaging and intraoperative surgical technique are essential to safe and effective laparoscopic excision of deeply infiltrative bladder endometriosis.

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 12:03 PM

Category: Endometriosis

SubCategory: Robotics

Complex Pelvic Endometriosis with Diaphragmatic Involvement and Robotic Surgery: Strong Allies

D'Albuquerque IMSC,[1] Pita Lottenberg C,[2] Corinti M,[3] Giroud Joaquim HD,[1] Maranhão DDA,[4] Barison GAS*[1]. [1]Hospital Israelita Albert Einstein, São Paulo, Brazil; [2]Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Please Select, Brazil; [3]Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil; [4]Gynecology and Obstetrics, Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil*
*Corresponding author.

Study Objective: Demonstrate a complex robot assisted laparoscopy for removal of pelvic and diaphragmatic endometriosis and its favorable outcome.
Design: Case report and surgical video for its illustration.
Setting: Patient was positioned in semi gynecological position, legs 80 degrees abducted in Allen stirrups. Three robotic trocars of 8 mm each were placed in the umbilical scar and flanks bilaterally. We set an additional 12 mm trocar in the right flank, for laparoscopic assistance.
Patients or Participants: 26-year-old female patient with dysmenorrhea with increased intensity during the last year, deep dyspareunia, chronic constipation and pain on her left shoulder during menstruation. Magnetic resonance imaging and pelvic ultrasound showed bilateral endometriomas with "kissing ovaries" and lesions in the posterior compartment. Subdiaphragmatic nodules attached to the hepatic capsule located on segments 4,8 and 7, the largest one of 0,7 cm were also observed on MRI.
Interventions: The patient was submitted to robot assisted laparoscopy for removal of endometrial foci. Cavitary inventory showed diffuse endometriosis foci in anterior compartment and an important obliteration of posterior cul-de-sac, with bilateral endometriomas, adherences in mesorectum, rectum and posterior uterine wall, infiltrative endometriosis nodule in retrocervical and rectovaginal region, infiltrative rectal endometriotic lesion and two diaphragmatic lesions. For pelvic approach, the patient was positioned in Trendelemburg and for upper abdominal approach, in tilt position. Both surgical approaches were performed robotically and the total length of the surgery was 5 hours.
Measurements and Main Results: The patient underwent an effective and safe surgical treatment for endometriosis and had a very satisfactory postoperative outcome, without complications and with adequate pain control. Patient also showed great improvement of shoulder pain after surgery.
Conclusion: Robotic surgery technology can be a safe and effective tool for the surgical treatment of complex and challenging cases of endometriosis, including non-typical clinical presentations, in which both detailed visualization of the anatomy and adequate ergonomy are necessary.

VIDEO SESSION 11 - Endometriosis
(11:30 AM — 12:30 PM), 12:09 PM

Category: Endometriosis

SubCategory: Other

A Multidisciplinary Approach to Thoracic Endometriosis: An Opportunity for MIGS to Repair the Diaphragm

Guerra T,[1] Onyewuenyi T,[1] Carroway W,[2] Tierney C,[1] Zaritsky E,[1] Chen J[1]. [1]OBGYN, Kaiser Permanente Northern California, Oakland, CA; [2]General Surgery, Alameda Health System, Oakland, CA*
*Corresponding author.

Study Objective: The objective of this video is to review a multidisciplinary approach of surgical treatment for a case of Stage IV endometriosis with extensive thoracic involvement.
Design: Case study with follow-up.
Setting: Positioned in dorsal lithotomy for pelvic laparoscopy portion, then moved to left lateral for thoracoscopy portion.
Patients or Participants: 32yo G0 with 2+ years of refractory pelvic pain and catamenial dyspnea.
Interventions: Laparoscopic excision of endometriosis implant, thoracoscopy with excision of endometriosis implants, repair of diaphragm; OR team consisting of MIGS, thoracic surgery.

Measurements and Main Results: Follow-up visits patient reports improved chronic pain and is overall healing well.
Conclusion: Thorough history and early development of a multidisciplinary team is crucial to the optimal treatment of extensive thoracic endometriosis.

VIDEO SESSION 12 – Hysteroscopy
(11:30 AM — 12:30 PM), 11:33 AM

Category: Hysteroscopy

SubCategory: Basic Science/Education

Hysteroscopic Approach to the Stenotic Cervix for Postmenopausal Patients

Covert E,[*,1] Bergin K,[2] Wilson-Leedy J[3]. [1]Obstetrics and Gynecology, Albany Medical Center, Albany, NY; [2]Reproductive Endocrinology and Infertility, Mount Sinai, New York, NY; [3]Columbia Memorial Hospital, Hudson, NY*
*Corresponding author.

Study Objective: To illustrate a hysteroscopic approach to cervical stenosis in the post-menopausal patient when endometrial sampling is indicated.
Design: Case series presenting key techniques utilized for accessing the endometrial cavity in the setting of cervical stenosis.
Setting: Referral Center for Gynecologic Surgery.
Patients or Participants: Case 1: 60-year-old G0 with post-menopausal bleeding and 1-cm endometrial stripe who was unable to tolerate exam in the office. Case 2: 72-year-old G1P0 with post-menopausal bleeding and history of excisional procedure of the cervix. Ultrasound with two endometrial masses, measuring up to 1 cm in size and distention of the endometrial cavity by complex fluid. Cervix unable to be visualized on exam in the office.
Interventions: Case 1: Gentle blunt dissection with a fine clamp was employed to identify the external cervical os and dilate it sufficiently to permit introduction of the hysteroscope. A 3.7mm diagnostic hysteroscope was advanced and the fibrotic cervical canal was dilated using increased hysteroscopic fluid pressure of 120 mmHg under direct visualization. On reaching the endometrial cavity, the diagnostic hysteroscope was replaced with an operative hysteroscope, which was used for endometrial sampling. Case 2: Due to the narrow caliber of the introitus with inability to place a speculum, vaginoscopy was performed using an operative hysteroscope. Hysteroscopic scissors were utilized to incise the external cervical os under direct visualization during vaginoscopy. The hysteroscope was introduced into the cervical canal and fibrotic tissue was resected with scissors and a hysteroscopic morcellator, allowing dilation of the cervix to reach the endometrial cavity.
Measurements and Main Results: For both patients, the cervix was successfully dilated and endometrial sampling was performed.
Conclusion: Hysteroscopic techniques can be used to safely dilate a stenotic cervix for post-menopausal patients, permitting endometrial sampling. Direct visualization with a hysteroscopic approach reduces the risk of uterine perforation.

VIDEO SESSION 12 – Hysteroscopy
(11:30 AM — 12:30 PM), 11:39 AM

Category: Hysteroscopy

SubCategory: Laparoscopy

Surgical Treatment for Uterine Isthmoceles

Fox V,[*,1] Fajardo O,[2] Cook E,[2] Anderson TL,[2] Curlin H[2]. [1]Department of Obstetrics & Gynecology, Vanderbilt University Medical Center, Nashville, TN; [2]Department of Obstetrics & Gynecology, Division of Minimally Invasive Gynecologic Surgery, Vanderbilt University Medical Center, Nashville, TN*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate surgical approaches and techniques for uterine isthmocele management via both hysteroscopy and laparoscopy.
Design: Narrated surgical presentation.
Setting: Uterine isthmoceles are outpouchings of the myometrium that can occur after a cesarean section. They can lead to symptoms such as abnormal uterine bleeding and pelvic pain and a potential increased risk of infertility and ectopic pregnancies. Surgical treatment is dependent on characteristics of the isthmocele, patient symptoms, and treatment goals.
Patients or Participants: Video footage and operative photos were used from two patient surgeries for uterine isthmoceles with obtained consent.
Interventions: The first patient underwent hysteroscopic resection and ablation of a uterine isthmocele with a resectoscope while the second patient underwent a hysteroscopic-guided laparoscopic resection of a uterine isthmocele.
Measurements and Main Results: N/A.
Conclusion: With the increasing rate of cesarean sections and the resulting increased risk of uterine isthmoceles, it is important for gynecologic surgeons to be able to provide appropriate operative management of uterine isthmoceles when indicated.

VIDEO SESSION 12 – Hysteroscopy
(11:30 AM — 12:30 PM), 11:45 AM

Category: Hysteroscopy

SubCategory: Other

Hysteroscopic Resection of a Cesarean Scar Pregnancy

Sham C, Cohen N, Khalil S. Department of Obstetrics, Gynecology and Reproductive Science, Icahn School of Medicine at Mount Sinai, New York, NY*
*Corresponding author.

Study Objective: To (1) review the diagnosis and evaluation of cesarean scar ectopic pregnancy, (2) discuss the treatment approaches to cesarean scar pregnancy, and (3) illustrate a hysteroscopic technique for resection of cesarean scar ectopic pregnancy.
Design: Narrated surgical video demonstrating hysteroscopic resection of cesarean scar ectopic pregnancy with clear visualization of trophoblastic tissue.
Setting: Large urban academic hospital.
Patients or Participants: Case report of a patient with a cesarean scar pregnancy.
Interventions: Cesarean scar pregnancy was diagnosed on transvaginal ultrasound, with further imaging performed using MRI for surgical planning. Single dose methotrexate was administered intramuscularly, followed by uncomplicated hysteroscopic resection of the cesarean scar ectopic pregnancy. After complete hysteroscopic resection, a levonorgestrel-releasing IUD was placed under ultrasound guidance.
Measurements and Main Results: The patient was discharged on postoperative day zero in stable condition. She had follow-up after 48 hours for beta-HCG, and subsequent follow-up after 1 week for repeat beta-HCG with appropriate downtrend.
Conclusion: Hysteroscopy presents a minimally invasive modality for treatment of cesarean scar ectopic pregnancy. Current data supports lower complication rates with concomitant methotrexate administration. Given significant risk of recurrence and associated morbidity, ultrasound-guided IUD insertion at time of procedure is a safe, timely, and effective option for contraception.

VIDEO SESSION 12 – Hysteroscopy
(11:30 AM — 12:30 PM), 11:51 AM

Category: Hysteroscopy

SubCategory: Reproductive Medicine

Hysteroscopic Removal of IUDs in Pregnancy: Considerations and Tips for Success

Chen E, Ton J. Luminis Health/Anne Arundel Medical Center, Annapolis, MD*
*Corresponding author.

Study Objective: To review options for management of an IUD in pregnancy, and to demonstrate the feasibility of hysteroscopic IUD removal in the first trimester.
Design: Case Report.
Setting: A tertiary care community hospital.
Patients or Participants: A 36-year-old Gravida 4 Para 3003 who presents with viable intrauterine pregnancy following Mirena IUD insertion.
Interventions: Hysteroscopic IUD removal under anesthesia.
Measurements and Main Results: Successful IUD removal and continuation of desired pregnancy.
Conclusion: Hysteroscopic removal should be a shared decision with careful consideration of risks and provider comfort. Patient should be counseled on the risk of gestational sac rupture requiring dilation and curettage. The recommended timing for IUD removal is prior to 12 weeks. Further research should be considered comparing outcomes after ultrasound-guided versus hysteroscopic IUD removal in pregnancy as this procedure becomes increasingly common.

VIDEO SESSION 12 - Hysteroscopy
(11:30 AM — 12:30 PM), 11:57 AM

Category: Hysteroscopy

SubCategory: Reproductive Medicine

Three Techniques for Performing a Hysteroscopic Septoplasty

Silverberg OM,[,1] McGrattan M,[2] Olsthoorn AV,[1] Solnik MJ,[3] Sobel M[2].*
[1]Department of Obstetrics and Gynaecology, University of Toronto, Toronto, ON, Canada; [2]Mt. Sinai Hospital & Women's College Hospital, Toronto, ON, Canada; [3]Obstetrics and Gynecology and Medical Imaging, University of Toronto, Toronto, ON, Canada
*Corresponding author.

Study Objective: The objective of this study is to demonstrate three distinctive techniques for performing a hysteroscopic septoplasty.
Design: Three surgical cases are shown with an accompanying literature review on hysteroscopic septoplasty to inform a clinical approach to care.
Setting: Each of the surgical interventions occurred in an inpatient operating room in the elective setting.
Patients or Participants: Three patients consented for participation in the video. Each was diagnosed with a uterine septum and underwent hysteroscopic septoplasty for fertility optimization.
Interventions: Hysteroscopic cold scissors, electrocautery, and mechanical morcellation techniques are demonstrated for septoplasty. Post-operatively, intra-uterine barriers may be utilized to mitigate the risk of uterine adhesion formation, which may impact future fertility.
Measurements and Main Results: The clinical application of hysteroscopic septoplasty in gynecology surgery is reviewed in this video, as well as the benefits and limitations of its use. Uterine septa are relatively common and are reported to confer a higher incidence of subfertility, pregnancy loss, and preterm birth. Management is generally directed towards fertility optimization with hysteroscopic resection. A brief review of relevant literature is discussed, including a recent randomized controlled trial which did not demonstrate a significant difference in fertility outcomes between groups who underwent hysteroscopic septoplasty and those who did not. While more robust evidence is required, this raised questions surrounding optimal technique and patient selection for septoplasty. Three surgical techniques using cold scissors, electrocautery, and advanced morcellation are then demonstrated, with discussion included to assist in guiding surgical decision making. Post-operative complications of hysteroscopic septoplasty are also briefly reviewed, with a focus on prevention of intrauterine adhesions.
Conclusion: Hysteroscopic septoplasty may offer fertility optimization, but an individualized approach to care is recommended. This video demonstrates three distinct techniques for restoration of the uterine cavity that may be used to enhance patient-centred care.

VIDEO SESSION 12 - Hysteroscopy
(11:30 AM — 12:30 PM), 12:03 PM

Category: Hysteroscopy

SubCategory: Reproductive Medicine

In Office Operative Hysteroscopy to Treat Intrauterine Uterine Adhesions: A Longitudinal Case Report.

Aguirre A. Obstetrics and Gynecology, The University of Arizona College of Medicine - Tucson, Tucson, AZ*
*Corresponding author.

Study Objective: This is a video demonstrating successful use of in-office operative hysteroscopy to treat intrauterine adhesions.
Design: A single case of a patient with intrauterine adhesions who desired future pregnancy and in-office operative management of her secondary infertility.
Setting: Single outpatient clinic.
Patients or Participants: One.
Interventions: Hysterosalpingogram, Hysteroscopic lysis of adhesions, intrauterine device placement followed by Foley catheter balloon placement.
Measurements and Main Results: In this video presentation, I will show the entire process involving HSG's, following hysteroscopic management of intrauterine adhesions over three separate courses with eventual resolution of the intrauterine adhesions.
Conclusion: In office operative hysteroscopy is a useful tool for providing outpatient management of intrauterine adhesions. To this author's knowledge, this is the first video demonstrating a "beginning to end" case of this cause of infertility managed entirely within the clinic setting.

VIDEO SESSION 12 - Hysteroscopy
(11:30 AM — 12:30 PM), 12:09 PM

Category: Hysteroscopy

SubCategory: Reproductive Medicine

Intrauterine Adhesions: Tips and Tricks

Kaiser SB, Gould C. Legacy Health, Portland, OR*
*Corresponding author.

Study Objective: The objectives of this video are to provide a brief review of intrauterine adhesions, to offer tips for successful hysteroscopic lysis of adhesions, and to address possible methods for prevention of adhesion recurrence.
Design: This is an educational video only.
Setting: This video features clips from multiple hysteroscopic surgeries performed in the operating room with real-time ultrasound guidance.

Patients or Participants: We present the cases of three patients with Asherman syndrome undergoing hysteroscopic treatment.
Interventions: Each patient underwent hysteroscopic lysis of adhesions under real-time ultrasound guidance.
Measurements and Main Results: Successful restoration of a normal uterine contour can be achieved with safe hysteroscopic techniques to resect adhesions.
Conclusion: Asherman syndrome is a common and underreported condition contributing to infertility. Hysteroscopic lysis of adhesions is the gold standard treatment of Asherman syndrome. Techniques that can be helpful in successful treatment include utilizing real-time ultrasound guidance, avoiding blind dilation, and following the dark windows.

VIDEO SESSION 13 - Laparoscopy

(2:00 PM — 3:00 PM), 2:03 PM

Category: Laparoscopy

SubCategory: Endometriosis

A Course Book of Laparoscopic Ureteral Reconstruction for Gynecologists-from 100 Cases of Experience

Andou M, Yanai S, Kanno K, Sakate S, Sawada M, Ochi Y. Kurashiki Medical Center, Kurashiki, Japan*
*Corresponding author.

Study Objective: To describe instructionally the steps and skills required for ureteral reconstruction. Applications of the surgery will also be shown.
Design: Video presentation.
Setting: Department of Obstetrics and Gynecology at an urban general hospital.
Patients or Participants: Cases with intraoperative ureteral injury, ureteral endometriosis, and advanced or recurrent gynecologic malignancy.
Interventions: Laparoscopic ureteral reconstruction including simple ureteral reimplantation, psoas hitch and Boari Flap techniques, as well as the interposition of an ileal graft.
Measurements and Main Results: To perform intraoperative repair in situations of injury or where extensive resection is required needs advanced and specialized skills. Understanding the steps to safe and genuine repair will be explained in an instructional setting with the aim that such techniques can be implemented with dedicated training to advance the understanding and further facilitation of ureteral repair by gynecologists. This presentation will use graphic descriptions as well as surgical videos to illustrate the steps and skills involved in each repair technique. To date, 104 cases have been performed. Of those, 103 cases were successfully managed. No cases required blood transfusion or suffered ureteral stenosis. A case who underwent simultaneous rectal and ureteral anastomosis suffered from ureteral anastomotic breakdown due to infection from the site of rectal surgery.
Conclusion: Although complex, laparoscopic ureteral reconstruction is feasible and instruction on techniques can expand the applicability and expandability of minimally invasive surgery in gynecology, even to cases which require extensive resection.

VIDEO SESSION 13 - Laparoscopy

(2:00 PM — 3:00 PM), 2:09 PM

Category: Laparoscopy

SubCategory: Endometriosis

Use of Laparoscopic Side-to-Side Neoureterocystostomy for Treatment of Obstructive Ureteral Endometriosis

Mohan S, Yuen M, Gagliardi E. OBGYN, Beth Israel Deaconess Medical Center, Boston, MA*
*Corresponding author.

Study Objective: To showcase a unique approach to surgical treatment of distal ureteral endometriosis, specifically a laparoscopic side-to-side neoureterocystostomy.
Design: Retrospective case study.
Setting: An urban academic teaching hospital.
Patients or Participants: Representative single case study of a patient of a MIGS / Urology practice who underwent laparoscopic surgical treatment for symptom management of stage III endometriosis involving the left ureter.
Interventions: Complete peritonectomy, total laparoscopic hysterectomy and bilateral salpingectomy, and side-to-side neoureterocystostomy.
Measurements and Main Results: This case was selected retrospectively based on intraoperative findings of stage III endometriosis, including a complex deeply infiltrating endometriotic lesion involving the left ureter causing stricture. It showcases an alternate approach to creating a neoureterocystostomy for treatment of distal ureteral endometriosis, highlighting preservation of the distal ureter, appropriate mobilization of the bladder and ureter to ensure a tension free anastomosis, and the creation of the anastomosis. Additionally, a conventional peritonectomy was performed of bilateral pelvic sidewalls and anterior/posterior cul-de-sac; specimen were meticulously labelled based on anatomic location and sent to pathology for analysis. Biopsy results were compared with intraoperative footage to confirm sites of true endometriosis resection. Notably several areas without visible lesions returned as endometriosis on pathology.
Conclusion: Here we showcase a novel approach to laparoscopic side-to-side neoureterocystostomy as a surgical treatment option for distal ureteral endometriosis. Traditionally, distal ureteral endometriosis is treated by transecting the ureter, removing the distal/affected portion, and creating an end-neoureterocystostomy. However, the transection of the ureter may impair vascularity of the new anastomosis and contribute to recurrent strictures. Our method preserves peri-ureteral vasculature and preserves blood flow. Additionally, our method preserves the ureteral orifice, enabling continued access via the bladder for interventions including stent placement.
Our patient tolerated the procedure well and had a benign postoperative course. She continues on hormonal suppression with Aygestin PO.
Further utilization of this technique should be reported and studied for efficacy and effectiveness.

VIDEO SESSION 13 - Laparoscopy

(2:00 PM — 3:00 PM), 2:15 PM

Category: Laparoscopy

SubCategory: Basic Science/Education

Laparoscopic Vecchietti Procedure: Surgical Management of Vaginal Agenesis in a Case with Mayer-Rokitansky-Küster-Hauser Syndrome

Mansour T,[,1] Whitney M,[2] Wasson M[3]. [1]Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ; [2]School of Medicine, Mayo Clinic Alix School of Medicine, Phoenix, AZ; [3]Mayo Clinic Arizona, Phoenix, AZ*
*Corresponding author.

Study Objective: Laparoscopic dissection for creation of neovagina in MRKH.
Design: Description and demonstration of surgical technique.
Setting: Tertiary Care, academic center.
Patients or Participants: 24-year-old G0 with no prior medical or surgical history presented for suspected MRKH syndrome. Work-up and evaluation were significant for vaginal agenesis on physical exam, 46XX karyotype, normal hormonal evaluation, pelvic ultrasonography showing bilateral uterine horns and normal bilateral ovaries. The patient desired to proceed with surgical management following failed conservative management.
Interventions: This video demonstrates the surgical steps involved in the laparoscopic dissection for the creation of a neovagina using the laparoscopic Vecchietti technique. In addition to highlighting the required

surgical instruments and setup, the video illustrates the techniques necessary to safely dissect the vesicorectal space, passing the thread through the pseudohymen and retroperitoneum, and navigating difficult areas of dissection. The video also provides in-depth guidance on the use of the spring-loaded device, a critical component of the procedure.
Measurements and Main Results: Minimally invasive surgical management of vaginal agenesis with no intra-operative complications.
Conclusion: Surgical management for vaginal agenesis can be considered after failed conservative management. In a systematic review comparing surgical approaches to vaginal agenesis, no single technique was found to be superior (19). The laparoscopic Vecchietti procedure is a minimally invasive surgery which avoids the use of grafts, preserves anatomic structures along with sexual and functional success rates of 96% (1).

VIDEO SESSION 13 - Laparoscopy
(2:00 PM — 3:00 PM), 2:21 PM

Category: Laparoscopy

SubCategory: Other

Laparoscopic Vecchietti: Pearls for Success
Clay J, Gallant T, Ferrando C, King C. Cleveland Clinic, Cleveland, OH*
*Corresponding author.

Study Objective: To present an effective strategy for optimizing the care of patients with Müllerian Agenesis who desire surgical management for the creation of a neovagina with the laparoscopic Vecchietti procedure.
Design: This video provides a framework for patient evaluation and selection, surgical strategy and postoperative care regimen to provide optimal post-procedural outcomes.
Setting: The procedure occurred at a large academic institution with two OBGYN subspecialty surgeons providing perioperative care for the patient.
Patients or Participants: This is a 22-year-old patient with Müllerian Agenesis, who was unsuccessful with conservative strategies for vaginal lengthening and sought care for neovagina creation.
Interventions: The patient underwent preoperative pelvic floor physical therapy and vaginal dilation both of which were ineffective in producing adequate vaginal lengthening. We then performed a laparoscopic Vecchietti procedure.
Measurements and Main Results: The patient was managed by a multidisciplinary team using our established care regimen with follow up demonstrating a sustained positive treatment outcome.
Conclusion: Utilizing a methodical, patient-focused approach and an experienced multidisciplinary team can optimize immediate- and long-term surgical outcomes for patients with Müllerian anomalies.

VIDEO SESSION 13 - Laparoscopy
(2:00 PM — 3:00 PM), 2:27 PM

Category: Laparoscopy

SubCategory: Pelvic Pain

Laparoscopic Excision of an Accessory Cavitated Uterine Mass (ACUM) in an Adolescent Patient
Kciuk O, Cizek S. Obstetrics & Gynecology, Stanford University, Palo Alto, CA*
*Corresponding author.

Study Objective: To demonstrate diagnosis, resection, surgical considerations and pathology in the case of an adolescent with accessory cavitated uterine mass (ACUM).
Design: Case report.
Setting: Tertiary referral center.
Patients or Participants: We present the case of a 16-year-old female who was referred to pediatric and adolescent gynecology for chronic pelvic pain and dysmenorrhea, worsening since menarche at age 11. Menstrual suppression was unsuccessful in treating her pain. Magnetic resonance imaging showed a uterus with normal bilateral cornua. In the right lateral aspect of the uterine body, there was a 2.6×2.3cm cystic structure containing hemorrhagic material. A diagnosis of ACUM was favored over other Mullerian anomalies, given the normal uterine cavity and bilateral cornua. With a past medical history that included glaucoma, a surgical plan for laparoscopic resection was made in collaboration with anesthesiology and ophthalmology.
Interventions: Hysteroscopy confirmed a normal uterine cavity. On laparoscopy, a right uterine mass was seen abutting the round ligament, separate to the right uterine cornua and fallopian tube. This video demonstrates surgical resection of the ACUM, myometrial and broad ligament defect repair, chromopertubation to confirm tubal patency, as well as visual and pathologic diagnosis of concomitant adolescent endometriosis. A discussion of ACUM histopathology is also presented.
Measurements and Main Results: A minimally-invasive, fertility-sparing surgical approach resulted in successful resection of ACUM in this adolescent patient.
Conclusion: ACUM is a rare uterine anomaly with a likely congenital etiology. It is characterized on imaging by an anterolateral uterine mass containing blood products. On pathology, the mass is lined with endometrium, and is distinct from cavitary adenomyosis. Surgical considerations for the adolescent patient include intraoperative evaluation for endometriosis, due to its association with obstructive uterine anomalies. ACUM should be on the differential diagnosis for the adolescent patient with pelvic pain.

VIDEO SESSION 13 - Laparoscopy
(2:00 PM — 3:00 PM), 2:33 PM

Category: Laparoscopy

SubCategory: New Instrumentation or Technology

Laparoscopic Ureterolysis Using Articulating Instrumentation
Lee E,[1] Mian S,[1] Klebanoff J[2]. [1]Obstetrics and Gynecology, Mainline Health- Lankenau Medical Center, Wynnewood, PA; [2]Obstetrics and Gynecology, Mainline Health, Philadelphia, PA*
*Corresponding author.

Study Objective: The purpose of this video is to illustrate the use of articulating laparoscopic instruments during a complex ureterolysis in a laparoscopic surgery.
Design: An educational video demonstrating the use of articulating laparoscopic instruments serving as an adjunct to conventional laparoscopic tools.
Setting: Community hospital with standard laparoscopic set-up with surgeon and first surgical assistant. Video towers placed at each side by the patient's thigh for optimal visualization. Patient placed in dorsal lithotomy in slight trendelenburg.
Patients or Participants: A case of a 36-year-old patient with deeply infiltrating endometriosis involving the left adnexa and left ureter.
Interventions: This video demonstrates the use of an articulating laparoscopic Maryland Bipolar instrument during a ureterolysis complicated by deeply infiltrating endometriosis. The video shows the ability of these articulating instruments to move in angles that a conventional laparoscopic tool cannot to help facilitate a complex dissection.
Measurements and Main Results: N/A.
Conclusion: Articulating laparoscopic instruments can act as a bridge between conventional laparoscopy and robotic-assisted surgery. These instruments mimic the ergonomics, dexterity, and control of a robotic arm while reducing cost associated with a robotic console and the need for additional training. Furthermore, these articulating laparoscopic

instruments provide access to surgeons who did not receive robotic training but would like to benefit from the advantages of robotic surgery. Ureterolysis may be a critical step in complex gynecologic surgery. It is crucial to identify the ureter to decrease risk of injury. This process is often completed bluntly or sharply and may require a variety of different instruments. In this video, the surgeon uses the articulating laparoscopic tool to dissect the densely adherent fibrotic tissue off the ureter. The articulating instrument allows similar wrist rotation that the robotic console provides. The ergonomics allow the surgeon to maneuver around crucial structures during their dissection, likely leading to improved surgical technique and optimal outcomes for the patients.

VIDEO SESSION 13 - Laparoscopy

(2:00 PM — 3:00 PM), 2:39 PM

Category: Laparoscopy

SubCategory: Oncology

Achieving Safe Haemostasis in Gynaecology

Puntambekar S,[*,1] Puntambekar A,[2] Patil M,[3] Puntambekar S,[1] Inampudi S[2]. [1]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India; [2]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India; [3]Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, Maharashtra, India*
*Corresponding author.

Study Objective: Achieving safe haemostasis in oncology.
Design: Prospective study.
Setting: Patient underwent 3D Laparoscopy. Patient in lithotomy position under anaesthesia. Procedure done by Experienced & Qualified team.
Patients or Participants: All gynaecology oncology patients underwent laparoscopic surgery.
Interventions: Achieving haemostasis by various methods like endo-suturing, clipping, using bipolar, or by mop of arterial or venous bleed.
Measurements and Main Results: various patients who underwent laparoscopic oncological surgery, intraoperative vascular injury identified & managed by various methods.
Pt 1- uterine artery ligation.
Pt 2-IN ca cervix patient underwent laparoscopic radical hysterectomy, post chemo-radiation external iliac vessel injury occurred during lymph node dissection haemostasis achieved by suturing.
Pt 3- in ovarian cancer surgery during lymph node dissection ode adherent to external iliac artery, clipping was done.
Pt 4 -Internal illac vein injury - bleeding control by mop pressure & figure of 8 suturing.
Pt 5 – During para-aortic dissection in ca ovary patient, renal vein injury controlled by suturing & heparine.
Median follow up of all patients 8 month.
Conclusion: Achieving hemostasis in laparoscopic oncology surgery is always dependent on understanding vascular anatomy, concept of predictive anatomy and immediate identification and treatment.

VIDEO SESSION 14 - Fibroids / Hysteroscopy

(2:00 PM — 3:00 PM), 2:03 PM

Category: Fibroids

SubCategory: Robotics

Anterior Approach to Large Pathology

Seaman SJ,[1,] Allen MN,[1,*] Arora C[2]. [1]OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY; [2]Department of Obstetrics and Gynecology, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To demonstrate key strategies to a minimally invasive hysterectomy for large pathology, including anterior approach to the uterine vessels and staged colpotomy.
Design: Case report.
Setting: Tertiary medical center.
Patients or Participants: 42-year-old G1P0010 with symptomatic uterine fibroids, AUB-L, and pelvic pain with imaging demonstrating a 19 cm multi-fibroid uterus with a dominant 12 cm posterior intramural fibroid desiring definitive surgical management with hysterectomy.
Interventions: The patient underwent a successful robotic-assisted total laparoscopic hysterectomy and bilateral salpingectomy. Key surgical steps illustrated include:

- 30˚ camera at the umbilicus.
- Retract uterus into the pelvis for access to the upper pedicles.
- Open the anterior broad ligament.
- Cephalad pressure on the uterine manipulator for development of the bladder flap.
- Identification of the ureter.
- Posterior broad ligament dissection from anterior approach.
- Skeletonization of uterine vessels.
- Uterine artery ligation from anterior approach.
- Staged colpotomy.
- Partial transection of the cervix to the cervical canal.
- Reinsert the manipulator and antevert the cervix safely off posterior structures.
- Amputation of the uterine corpus.
- Subsequent colpotomy along cup.
- Vaginal cuff closure in usual fashion.
- Specimen bagging and morcellation.

Measurements and Main Results: Patient was discharged home on the day of surgery with an uncomplicated post-operative course.
Conclusion: Large uterine pathology poses challenges for a minimally invasive surgical approach. Unique strategies to address these challenges include utilization of a 30˚-degree scope, anterior approach to uterine vessels, and staged colpotomy.

VIDEO SESSION 14 - Fibroids / Hysteroscopy

(2:00 PM — 3:00 PM), 2:09 PM

Category: Fibroids

SubCategory: Robotics

Robotic Myomectomy for Pararectal Myoma Arising from the Uterosacral Ligament

Rivera NE,[1,] Dad N,[2] Alagkiozidis I[3]. [1]OBGYN, Maimonides Medical Center, Brooklyn, NY; [2]Minimally Invasive Gynecologic Surgery, Maimonides Medical Center, Brooklyn, NY; [3]Department of Gynecologic Oncology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: The purpose of the video is to show the safest practice for dissecting a pararectal fibroid with robotic assistance.
Design: N/A.
Setting: Academic-affiliated community hospital.
Patients or Participants: One patient, 33yo G0.
Interventions: The patient underwent robotic assisted myomectomy of a pararectal myoma arising from the uterosacral ligament due to chronic pelvic discomfort and infertility.
Measurements and Main Results: The pararectal fibroid was successfully dissected out and removed without any complications. There was minimal blood loss, and the patient was discharged on the same day. She had an uncomplicated postoperative course.

Conclusion: Robotic assisted myomectomy is a great option for pararectal myomas. It is important to identify anatomical structures, ie. the ureter and uterine vessels, as a fibroid may cause a mass effect on nearby structures leading to displacement. Carefully identifying these structures and dissecting them out will allow for safe removal of the fibroid without any damage to normal anatomy. The patient has the benefit of being able to be discharged home on the same day, with minimal blood loss, less pain, and faster recovery.

VIDEO SESSION 14 - Fibroids / Hysteroscopy
(2:00 PM — 3:00 PM), 2:15 PM

Category: Fibroids

SubCategory: Robotics

Lessons from a Robotically Assisted Pararectal Parasitic Myoma Excision

Cheng CW,[1,] ElSahwi K[2]. [1]Gynecology, Hackensack Meridian Health Jersey Shore University Medical Center, Neptune, NJ; [2]Gynecology Oncology, Hackensack Meridian Health Jersey Shore University Medical Center, Neptune, NJ*
*Corresponding author.

Study Objective: The objective of our video is to present a case of persistent pelvic pain due to pararectal parasitic myoma, review our surgical approach and share tips from our successful excision.
Design: N/A.
Setting: Patient underwent a robotically assisted total laparoscopic pararectal mass excision with hysterectomy and bilateral salpingectomy.
Patients or Participants: N/A.
Interventions: A V-care manipulator was used for uterine manipulation. Abdominal entry through palmer's point with veress needle. Four robotic port sites were utilized alongside two assistant ports. A robotic tenaculum was used for traction on the suspected pararectal myoma. Total laparoscopic hysterectomy was performed via lateral to medial approach with careful retroperitoneal dissection and complete ureterolysis.
Measurements and Main Results: N/A.
Conclusion: This surgical video summarizes the surgical techniques used in this successful pararectal parasitic myoma excision.

VIDEO SESSION 14 - Fibroids / Hysteroscopy
(2:00 PM — 3:00 PM), 2:21 PM

Category: Fibroids

SubCategory: Tissue Containment & Extraction Technologies

Unmasking the Masquerade: Laparoscopic Removal of a Cotyledonoid Dissecting Leiomyoma Misdiagnosed as an Ovarian Tumor

Rao T. Obstetrics and Gynaecology, Liverpool Hospital, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: The following report describes a unique case of a cotyledonoid dissecting leiomyoma presenting as an ovarian tumor in a 59-year-old female with post-menopausal bleeding and a right adnexal mass.
Design: A video demonstration of surgical removal of CDL laparoscopically.
Setting: The surgery was carried out in the minimally invasive unit of a tertiary level hospital.
Patients or Participants: The surgical video depicts the case of a 59-year-old female who presented with a history of post-menopausal bleeding and was diagnosed preoperatively with a right adnexal mass with a solid component. During the surgery, a cotyledonoid dissecting leiomyoma was unexpectedly encountered.
Interventions: The intervention involved a diagnostic laparoscopy and resection of the pelvic mass.
Measurements and Main Results: During the surgical procedure, there was an intraoperative surprise of a retroperitoneal mass, which was explored and removed. This surgical video is among the first to feature a laparoscopic surgery video of the rare fibroid variation known as cotyledonoid dissecting leiomyoma. The mass was found to be attached to the uterus laterally, anteriorly extending up to the paravesical space, laterally to the external iliac vessels, and posteriorly in the pararectal space. The consistency of the mass was almost jelly-like, similar to removing a placenta, hence careful dissection was required.
The final histopathology revealed a cotyledonoid dissecting leiomyoma, a rare variant of leiomyoma.
Conclusion: Cotyledonoid dissecting leiomyoma, also known as Sternberg tumor, is a rare variant of leiomyoma that can be easily mistaken for a malignant neoplasm, posing a diagnostic challenge for clinicians. Although the tumor can extend to neighboring organs, it typically does not invade them. Therefore, it is essential to differentiate this variant from other leiomyoma variants to avoid over-treatment and misdiagnosis. This case emphasizes the importance of considering uncommon differential diagnoses for ovarian tumors. Further research may be necessary to gain a better understanding of the full spectrum of this pathological variant.

VIDEO SESSION 14 - Fibroids / Hysteroscopy
(2:00 PM — 3:00 PM), 2:27 PM

Category: Hysteroscopy

SubCategory: Fibroids

Hysteroscopic Polyp Excision Using Concomitant Transcervical Ureteral Stone Basket

Stauble SM,[1,] Ramirez C,[2] Fielden AD[3,*]. [1]OBGYN, Brooke Army Medical Center, San Antonio, TX; [2]San Antonio Military Medical Center, San Antonio, TX; [3]Minimally Invasive Gynecologic Surgery, Brooke Army Medical Center, San Antonio, TX*
*Corresponding author.

Study Objective: To demonstrate the indications for use of a basket retrieval device during office hysteroscopy and to discuss advantages over traditional operative hysteroscopic instruments and techniques. To provide tips for utilizing a dual instrument transcervical approach with a two-handed technique in the setting of operative hysteroscopy.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Hysteroscopy has widespread clinical applications in both premenopausal and postmenopausal patients; particularly in the setting of abnormal uterine bleeding and infertility. It is considered the gold standard for evaluation of intracavitary pathology and often provides effective surgical management. Historically, operative hysteroscopy remained restricted to the use of a one-handed instrument technique with only linear movements due to the coupling of the operative channel to the hysteroscope. Hysteroscopic specimen removal can be difficult to troubleshoot due to the limitations of this one-handed technique. This frequently results in inadequate specimen retrieval with multiple passes or blind grasping techniques that increase risk of adhesions and uterine perforation. This case report highlights a novel, dual instrument, transcervical approach using a ureteral stone basket during office hysteroscopy, thus enabling a two-handed technique for hysteroscopic polyp excision.
Patients or Participants: N/A.

Interventions: Office hysteroscopic polyp excision with concomitant transcervical ureteral stone basket retrieval device.
Measurements and Main Results: N/A.
Conclusion: Historically, operative hysteroscopy has been restricted to linear movements with only one instrument at a time. We safely demonstrate a dual instrument technique via simultaneous use of the hysteroscopic graspers and a basket retrieval device.

VIDEO SESSION 14 - Fibroids / Hysteroscopy
(2:00 PM — 3:00 PM), 2:33 PM

Category: Hysteroscopy

SubCategory: Fibroids

Technique of Transcervical Morcellation of a Large Type Zero Leiomyoma

McGregor A, Arnolds K. Minimally Invasive Gynecologic Surgery, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: Demonstrate technique for transcervical morcellation of a hysteroscopically detached leiomyoma.
Design: N/A.
Setting: Academic hospital operating room.
Patients or Participants: The patient is a 38-year-old with abnormal uterine bleeding and a 6-centimeter type zero lower uterine segment leiomyoma. She did not attain adequate bleeding relief with medical management of her leiomyoma and desired fertility sparing definitive management.
Interventions: The patient underwent a hysteroscopic resection of her 6cm type zero leiomyoma. The leiomyoma was too large to pass through the cervix intact, so transcervical morcellation was performed using traction counter-traction and a scalpel.
Measurements and Main Results: Leiomyoma was removed through the cervix without further dilation or damage to the cervix.
Conclusion: The patient had an uncomplicated recovery and was very satisfied with the resolution of her symptoms.

VIDEO SESSION 14 - Fibroids / Hysteroscopy
(2:00 PM — 3:00 PM), 2:39 PM

Category: Hysteroscopy

SubCategory: Basic Science/Education

Enhancing Training in Office Hysteroscopy: A Preliminary Needs Assessment and Simulation Model Designed for the Flexible Hysteroscope

Reina E,[1,] Cockrum R,[2] Senapati S[2]. [1]OB/GYN, NorthShore University HealthSystem/ University of Chicago, Chicago, IL; [2]OB/GYN, NorthShore University HealthSystem, Evanston, IL*
*Corresponding author.

Study Objective: To understand post-graduate training experience in office hysteroscopy and to design a low fidelity simulation model from recycled operating room materials to allow for low stakes practice with a 3.5 to 5.0 mm flexible hysteroscope prior to entering the office setting.
Design: Needs assessment and surgical simulation pilot.
Setting: Surgical simulation lab.
Patients or Participants: 17 of 29 PGY 1-4 OB/GYN residents, evenly distributed by first half and second half of post-graduate training, completed a needs assessment to inform design of the simulation exercise.
Interventions: A reusable uterine model for use with a flexible hysteroscope was created using recycled operating room materials: a bulb suction, surgical glove, red rubber catheter, smoke evacuation tubing from an electrosurgical pencil or PTFE vascular graft, and an egg crate.
Measurements and Main Results: 82% of respondents had never observed an office hysteroscopy, and none of the respondents had experience using a 3.5 mm flexible hysteroscope. 65% were very comfortable and the remaining 35% comfortable, using a 5 mm rigid hysteroscope in the operating room. Cited barriers to office hysteroscopy in future practice were lack of experience with a flexible hysteroscope (94%), lack of experience with office hysteroscopy (71%), lack of experience in office procedures (59%), concern for patient discomfort greater than endometrial biopsy (53%) or greater than IUD insertion (29%), possible need for serial cervical dilation (18%), and possible need for additional procedures to remove intrauterine pathology (24%). 71% of respondents would recommend office hysteroscopy to a family member.
Conclusion: OB/GYN residents at our institution cite lack of training with a flexible hysteroscope, limited exposure to office hysteroscopy, and concerns for patient discomfort as barriers to future practice. Further validity testing is necessary to understand whether this proposed low-fidelity simulation model may help bridge these training gaps.

VIDEO SESSION 15 - Robotics
(2:00 PM — 3:00 PM), 2:03 PM

Category: Robotics

SubCategory: Endometriosis

New Role of Indocyanine Green (ICG) in Benign Gynecology Surgery

Rius M,[1] Moawad G[2]. [1]Gynecology Department, ICGON, Hospital Clinic, Barcelona, Spain; [2]Department of Obstetrics and Gynecology, George Washington University, Washington, DC*
*Corresponding author.

Study Objective: To show the use of indocyanine green (ICG) in benign gynecologic surgery and to demonstrate its application and potential benefits in different benign conditions.
Design: Surgical video with different clips demonstrating different applications of ICG in benign gynecological procedures.
Setting: Since its approval back in 1956, ICG has been used in different surgical settings. ICG is a tricarboyanine dye that fluoresces in the near-infrared spectrum and allows light excitation of structures up to several millimeters' depth with high contrast. Its ability to bind to plasma proteins has been used to visualize in real time the perfusion of tissues. There have already been studies demonstrating its use in evaluating the perfusion of tissues in intestinal anastomosis after bowel resection in endometriosis patients as well as in evaluating ureteral vascularization after ureterolysis in these patients. However, limited data regarding other benign gynecological procedures is limited to case reports.
Patients or Participants: Patients with surgical application of ICG.
Interventions: In the following video clips we want to show the use of ICG in the following situations:
- Assessing bladder wall integrity after complex adhesiolysis at the vesicouterine space due to endometriosis.
- Assessing bowel wall integrity after shaving endometriotic nodules.

- Assessing uterine cavity integrity after adenomiomectomy.
- Assessing tubal permeability.

Measurements and Main Results: Four video clips will show the usefulness of ICG in the procedures described previously.
Conclusion: ICG use in benign gynecological procedures was limited to endometriosis surgery, but in the last years, new data shows promising indications of ICG in this field to offer our patients safer and more precise procedures.

VIDEO SESSION 15 - Robotics

(2:00 PM — 3:00 PM), 2:09 PM

Category: Robotics

SubCategory: Fibroids

Robotic Hysterectomy for Posterior Cervical Fibroid: Tips and Tricks

Rivera Ortiz G, Mourad J. Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ*
*Corresponding author.

Study Objective: The objectives of this video are to demonstrate safe and efficient techniques for approaching a large cervical fibroid through robotic surgery.
Design: Video presentation.
Setting: The patient was in the operating room in lithotomy position throughout the surgery.
Patients or Participants: One patient was included in this video presentation. A 43-year-old female undergoing definitive treatment for cervical fibroid.
Interventions: Robotic Assisted Total Laparoscopic Hysterectomy, Bilateral Salpingectomy, Retroperitoneal dissection, Cystoscopy.
Measurements and Main Results: The procedure was completed uneventfully without complications. The patient was discharged home on the same day. Postoperative period without complications and reported improvement of symptoms.
Conclusion: There are several surgical techniques available for the safe completion of a hysterectomy for large cervical leiomyomas. Some of the techniques include the use of a 30-degree endoscope for improved visualization throughout the procedure. In the setting of distortion of cervical anatomy, a sponge stick, a Briesky retractor or a flexible rod can be used for uterine manipulation and as a colpotomy cup. Retroperitoneal dissection with ureterolysis is essential to avoid inadvertent injuries. Finally, complete visualization of the leiomyoma is not required if the structures and pedicles to be transected are completely visualized during procedure.

VIDEO SESSION 15 - Robotics

(2:00 PM — 3:00 PM), 2:15 PM

Category: Robotics

SubCategory: Fibroids

Indocyanine Green for Detection of Cavity Integrity during Myomectomy

Warren L, Saba C,* Swainston D. Sunrise Health GME Consortium, Las Vegas, NV*
*Corresponding author.

Study Objective: To introduce the use of Indocyanine Green (ICG) dye during robotic myomectomies to aid in capsule dissection and for evaluating and maintaining cavity integrity.
Design: The included cases are two patients who underwent robotic myomectomy for FIGO 2-5 fibroids.
Setting: Patients were placed in Trendelenburg position with three robotic ports, one within umbilicus, and other two in right and left lower quadrants.
Patients or Participants: Two patients are included to demonstrate robotic myomectomy with ICG, both of which had large FIGO 2-5 fibroids and desired surgical management.
Interventions: Robotic assisted myomectomy with use of ICG.
Measurements and Main Results: After robotic set-up was completed, surrounding tissue to fibroid was injected with diluted Vasopressin to aid in hemostasis. The uterine serosa was then incised, and fibroid dissected from uterine wall. After initial dissection was begun, the ICG dye was then instilled. First, a diluted mixture was created using 1cc ICG dye in 500cc normal saline. Approximately 30-50cc of this diluted ICG was then injected via a chromopertubation line on the uterine manipulator. The robotic platform was then switched to fluorescent mode. The ICG dye is absorbed heavily by endometrium, with little to no absorption within the fibroid. ICG dye can be visualized as a bright green color while in fluorescent mode. With both surgery cases, the bright green color is used to help differentiate endometrium from fibroid capsule. In the second case, the uterine cavity is entered, which is immediately visualized by the dye leaking through the small punctate hole. Once the fibroid is removed, the defect is then closed in several layers.
Conclusion: In conclusion, ICG can be a beneficial tool for gynecologic surgeons to aid in fibroid dissection. It can assist in avoidance of entry into the endometrial cavity, and also allow immediate recognition of when or where the cavity was entered.

VIDEO SESSION 15 - Robotics

(2:00 PM — 3:00 PM), 2:21 PM

Category: Robotics

SubCategory: Laparoscopy

Navigating the Difficult BSO, Safe Isolation of the IP Ligament

Ashley MC,[1] Baker T,[1] Ramirez C[2]. [1]University of New Mexico, Albuquerque, NM; [2]San Antonio Military Medical Center, San Antonio, TX*
*Corresponding author.

Study Objective: To illustrate key steps for navigating a difficult bilateral salpingo-oophorectomy (BSO) with focus on safe isolation of the infundibulopelvic ligaments.
Design: Stepwise demonstration of the techniques with narrated video footage.
Setting: The case depicted is that of a BSO for bilateral endometriomas in a patient with prior hysterectomy using robotic surgery. However, the key steps and techniques highlighted can be used for other cases with complex gynecologic surgery involving endometriosis, significant adhesive disease, other large adnexal masses, and using traditional laparoscopic tools.
Patients or Participants: 43-year-old female with worsening pelvic pain noted to have bilateral adnexal masses consistent with endometriomas. On exam she is felt to have a 15 cm mass fixed to the vaginal cuff. She had hysterectomy roughly 5 years prior.
Interventions: This video demonstrates the key steps of safe isolation of the IP ligaments in the setting of a complex BSO. The case illustrates the robotic approach in a post-hysterectomy patient with large, retroperitonealized bilateral endometriomas and complete obliteration of the posterior and anterior cul-de-sacs, leading to inability to recognize the basic architecture of the pelvis. Techniques are demonstrated to help optimize operating in the pelvis when there is limited space and altered anatomy, taking care to recognize and avoid vital structures. Specifically, identification of the external iliac vessels and the ureter in the retroperitoneum is prioritized. Space is maximized with “push and spread” and “bridging” surgical techniques and minimal diathermy utilization is key for safety. And finally, infundibulopelvic ligaments may require meticulous dissection to be fully skeletonized prior to transection.
Measurements and Main Results: The patient did well postoperatively with no complications and resolution of her pain.

Conclusion: Many challenges arise when tackling a difficult bilateral salpingo-oophorectomy. With an initial focus on isolation of the infundibulopelvic ligaments through recognition of critical structures and several minimally invasive surgical techniques dissection can be safely accomplished.

VIDEO SESSION 15 - Robotics

(2:00 PM — 3:00 PM), 2:27 PM

Category: Robotics

SubCategory: Laparoscopy

Addressing an Obliterated Cul-De-Sac: A Robotic Posterior Approach

Bruce A, Gnade C, Oshinowo A. Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis, IN*
*Corresponding author.

Study Objective: To demonstrate a posterior approach to hysterectomy for patients with an obliterated anterior cul-de-sac using the robotic platform.
Design: Surgical Video
Setting: Operating Room
Patients or Participants: Given the rise in cesarean delivery rates in the US, there has been an increase in adhesive disease in the anterior cul-de-sac. Obliteration of the anterior cul-de-sac increases the risk of bladder injury and blood loss during hysterectomy. In this video, two premenopausal patients with significant adhesive disease in the anterior cul-de-sac secondary to multiple cesarean sections were selected to perform a posterior approach to securing blood supply during their hysterectomies. Both desired surgical management for dysmenorrhea and fibroids, this second having a large fibroid uterus.
Interventions: A robotic-assisted total laparoscopic hysterectomy was performed highlighting the following techniques:
- Utilizing the posterior approach to decrease blood loss during bladder flap development and adhesiolysis.
- Developing the endopelvic fascia to more easily detect the plane for bladder flap development.
- Backfilling the bladder to help delineate borders.
- Utilizing robotic platform with the fourth arm to decompress large uterine pedicles and protect the bladder during desiccation of the uterine pedicle as well as offering unique camera angles.

Measurements and Main Results: N/A.
Conclusion: This video demonstrates a posterior approach to securing uterine blood supply on the robotic platform to successfully perform a hysterectomy on two patients with an obliterated anterior cul-de-sac.

VIDEO SESSION 15 - Robotics

(2:00 PM — 3:00 PM), 2:33 PM

Category: Robotics

SubCategory: Laparoscopy

Vertical Vaginal Cuff Closure: Posterior to Anterior Technique

Mak F,[1] Mourad J[2]. [1]Department of Obstetrics and Gynecology, University of New Mexico, Albuquerque, NM; [2]Division of Minimally Invasive Gynecologic Surgery, Banner University Medical Center, University of Arizona COM, Phoenix, AZ*
*Corresponding author.

Study Objective: To review the steps and theoretical benefits of vertical vaginal cuff closure during a (robot-assisted) laparoscopic hysterectomy.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Vaginal cuff closure after colpotomy during laparoscopic hysterectomy has been performed in multiple ways. Vertical closure of the vaginal cuff may be associated with several benefits, which are currently being studied in a prospective trial and are discussed in the video.
Patients or Participants: Vertical vaginal cuff closure in two patients undergoing robot-assisted total laparoscopic hysterectomy is demonstrated.
Interventions: This video demonstrates the posterior-to-anterior and anterior-to-posterior vertical vaginal cuff closure technique. It demonstrates how to plicate the uterosacral ligaments in the anchoring stitch, followed by completion of the closure with attention paid to anatomical landmarks, judicious use of cautery, and appropriate handling of barbed suture.
Measurements and Main Results: Both patients did well postoperatively.
Conclusion: This video demonstrates the steps to completing a posterior-to-anterior vertical vaginal cuff closure, which may have multiple benefits that are currently being studied. The video demonstrates a robot-assisted laparoscopic closure, but this technique is easily reproducible with traditional laparoscopy as well.

VIDEO SESSION 15 - Robotics

(2:00 PM — 3:00 PM), 2:39 PM

Category: Robotics

SubCategory: Laparoscopy

Repair of a Vaginal Cuff Dehiscence after Robotic Hysterectomy

McKee D,[1] Sanches Bassaco B,[2] Yi J[3]. [1]Arizona Gynecology Consultants, Phoenix, AZ; [2]Obstetrics and Gynecology, St. Joseph's Hospital and Medical Center, Phoenix, AZ; [3]Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ*
*Corresponding author.

Study Objective: To demonstrate the surgical steps for a vaginal approach to repair of a vaginal cuff dehiscence.
Design: Video demonstration of the procedure with narrated discussion.
Setting: Tertiary academic teaching hospital.
Patients or Participants: N/A.
Interventions: This video demonstrates techniques for performing a vaginal repair of a vaginal cuff dehiscence in a 45-year-old patient who underwent robotic hysterectomy 1 year prior.
Measurements and Main Results: N/A.
Conclusion: Vaginal cuff dehiscence is a rare but known complication of total hysterectomy, and all gynecologic surgeons should be comfortable with the diagnosis and surgical management of this condition.

VIDEO SESSION 16 - Natural Orifice Surgery

(2:00 PM — 3:00 PM), 2:03 PM

Category: Natural Orifice Surgery

SubCategory: Natural Orifice Surgery

Vaginal Approach to C-Section Scar Pregnancies: A Ten-Step Technique

Ampuero R,[1] Sanchez GR,[2] Heredia F,[3] Almaraz HM,[1] Lecoña JT,[1] Heredia F, III[4]. [1]Departamento de Obstetricia y Ginecología, Hospital Materno Fetal - Caja Nacional de Salud, La Paz, Bolivia (Plurinational State of); [2]Departamento de Obstetricia y Ginecología, Hospital del Norte, La Paz, Bolivia (Plurinational State of); [3]Departamento de Obstetricia y Ginecología, Universidad de Concepción, Concepción, Chile; [4]Departamento de Obstetricia y Ginecología, Universidad San Sebastián, Concepción, Chile*
*Corresponding author.

Study Objective: To describe a 10-step technique we have used to treat this clinical condition.
Design: A teaching video with a step-by-step description of the surgical technique.
Setting: A tertiary medical facility in a low resource country.
Patients or Participants: Six consecutive patients we have treated with this technique with successful outcome.
Interventions: A ten-step surgical procedure. 1.- Lithotomy Position: Under spinal anesthesia patient is placed in lithotomy position, 2.- Cervical exposure and traction: Cervix is exposed and Jacobs forceps are placed to provide adequate traction, 3.- Cervical Infiltration with Vasoconstrictor solution: Cervical mucosa and stroma is injected with a vasoconstrictor solution, 4.- Anterior mucosal incision (3 to 9 of the clock) and dissection of vesicovaginal space: A 3 cm incision is performed anteriorly developing the vesicocervical space, 5.- Cervical vascular elements are identified and ligated with resorbable 2.0 suture, 6.- A transverse incision is made on the most prominent area of the mass and the gestational sac and trophoblast are evacuated, 7.- A uterine cavity curettage is then performed to complement the prior step, 8.- Correction of the uterine defect is done with polyglactin 1 interrupted suture, 9.- Bladder indemnity is checked Cystoscopically,10.- And finally vaginal mucosa closure is done with a 2.0 poliglactin running suture.
Measurements and Main Results: Operating time usually ranged from 20-25 minutes and all patients were discharged on POD 1.
Conclusion: Surgical options provide both complete removal of the entire scar and content and reparation of the uterine defect thus reducing the potential for a repeated C-scar pregnancy. In a low resource or somehow financially-challenged hospitals a vaginal approach in first trimester Cscar pregnancies is a safe, simple and fully reproductible technique, which only requires widely available reusable surgical instruments.

VIDEO SESSION 16 - Natural Orifice Surgery
(2:00 PM — 3:00 PM), 2:09 PM

Category: Natural Orifice Surgery

SubCategory: New Instrumentation or Technology

Indocyanine Green-Assisted Retrograde Ureterolysis in Robotic vNOTES with Stage IV Endo and Obliterated Cul-Del-Sac

Guan X,[*,1] *Guan Z,*[*,2] *Zhang C,*[*,3] *Sunkara S,*[2] *Thigpen B*[1]. [1]*Minimally Invasive Gynecology Surgery, Baylor College of Medicine, Houston, TX;* [2]*Minimally Invasive Gynecological Surgery, Baylor College of Medicine, Houston, TX;* [3]*Department of Gynecology, Huai'an Maternal and Child Health Hospital, Huai'an, Jiangsu, China*
*Corresponding author.

Study Objective: To explore the use of Indocyanine Green (ICG) in highlighting ureteral anatomical landmarks for the successful and safe execution of robotic-assisted transvaginal NOTES hysterectomy with resection of deeply infiltrated endometriosis.
Design: Stepwise demonstration with narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: Our patient is a 38-year-old G4P1031 with a symptomatic enlarged uterus secondary to adenomyosis and uterine fibroids, dense adhesions between the posterior uterus, and left uterosacral ligament.
Interventions: Stage IV endometriosis with obliterated cul-de-sac is a challenging procedure in the surgical management of endometriosis. Ureterolysis is the key step to performing this surgery successfully and safely, however, the routine dissection of ureters from the sacral promontory level to the uterine artery is challenging in obliterated cul-del-sacs with pelvic side wall adhesions with the proximal ureter at greatest risk. We utilized ICG green to help identify the ureter at the beginning of the case leading to reducing the risk of surgical complication, in which the concept of ureterolysis from the level of the uterine artery to the bifurcation of common iliac vessels in vNOTES surgery will be referred to as "vNOTES retrograde ureterolysis."
Measurements and Main Results: The patient was discharged in one day with reports of minimal pain.
Conclusion: Robotic-assisted NOTES hysterectomy with deeply infiltrated endometriosis resection is feasible and safe with ICG green-assisted ureteral labeling in a case of obliterated cul-del-sac. The unique green color labeling of ureters offers a prominent landmark in assisting the ureteral dissection while avoiding ureteral and bowel injury resulting in the possibility of utilizing vNOTES surgery in challenging cases.

VIDEO SESSION 16 - Natural Orifice Surgery
(2:00 PM — 3:00 PM), 2:15 PM

Category: Natural Orifice Surgery

SubCategory: Robotics

Tips and Tricks for Robotic vNOTES Hysterectomy in a 16-Week Sized Uterus with Morbidly Obese BMI of 70

Liu J,[*,1] *Guan Z,*[*,2] *Wang Q,*[*,3] *Sunkara S,*[2] *Thigpen B,*[4] *Guan X*[4].
[1]*Minimally Invasive Gynecological Surgery, Guangzhou Medical University, Guangzhou, Guangdong, China;* [2]*Minimally Invasive Gynecological Surgery, Baylor College of Medicine, Houston, TX;* [3]*Minimally Invasive Gynecological Surgery, Xinxiang Central Hospital, Xinxiang, Henan, China;* [4]*Minimally Invasive Gynecology Surgery, Baylor College of Medicine, Houston, TX*
*Corresponding author.

Study Objective: To demonstrate the surgical techniques for robotic vNOTES hysterectomy with bilateral salpingo-oophorectomy (BSO) in a WHO Class 3 obesity patient (BMI =70) as well as large fibroid uterus (16 week sized).
Design: Stepwise demonstration with narrated video footage.
Setting: An academic tertiary care hospital.
Patients or Participants: Our patient is a 50-year-old G0 with a postmenopausal vaginal bleeding with an enlarged uterus; her endometrial biopsy showed complex endometrial hyperplasia with atypia.
Interventions: The surgical exposure for extremely obese patients with a concomitantly large uterus can be very challenging transabdominally due to the patient being unable to tolerate the Trendelenburg position and abdominal gas pressure. Therefore, transvaginal NOTES can be an alternative option for these types of challenging patients. However, although there are clear benefits of vNOTES surgery in the obese patients, we still need to be thoughtful and deliberate in handling this kind of surgery. Several key successful factors that aid in the completion of the surgery include:
1. Appropriate patient positioning (Trenguard Position) as tolerated.
2. Initial vaginal section of hysterectomy.
3. Successful Port Placement.
4. Trendelenburg as far as tolerated.
5. Harnessing the robotic camera for anterior colpotomy.
6. Utilizing alternative surgical exposure techniques: Airseal for maintaining gas pressure for optimizing exposure, lap pad for the thermal isolation, maintaining the uterus for the safe exposure during BSO.
7. After identification of the bilateral ureters, the broad, round, and uterine ovarian ligament were transected with vessel sealer (less thermal spread) and the cystectomy was completed.
8. Bilateral salpingo-oophorectomy was completed.
9. In-bag uterine tissue extraction.
10. Vaginal cuff closure with v-LOC suture.
Measurements and Main Results: The patient was discharged same day with minimal post-operative pain. Estimated blood loss was 25ml.
Conclusion: Robotic-assisted NOTES hysterectomy with BSO is feasible and safe in extremely obese patients with large uterus. The combination of

all these strategies could aid in the feasibility and safety for patients with these challenging pathology and morbidity.

VIDEO SESSION 16 - Natural Orifice Surgery
(2:00 PM — 3:00 PM), 2:21 PM

Category: Natural Orifice Surgery

SubCategory: Single-Port

Transvaginal Natural Orifice Transluminal Endoscopic Myomectomy for Cervical Fibroid

Zhang C,[*,1] Li Q,[2] Liu Y[2]. [1]Department of Gynecology, Huai'an Maternal and Child Health Hospital, Huai'an, Jiangsu, China; [2]Gynecology, Huai'an Maternity and Children Hospital, Huai'an, China*
*Corresponding author.

Study Objective: To demonstrate stepwise transvaginal natural orifice transluminal endoscopic (vNOTES)cervical myomectomy.
Design: Stepwise demonstration of the technique with narrated video clips.
Setting: Uterine fibroid is the most common benign tumors of reproductive organs in women of reproductive age, cervical fibroids a special type of that, accounting for about 0.6% of uterine fibroid. Surgery is the primary treatment method for cervical fibroids, the approach depends on the location and size of the cervical fibroid. However, cervical fibroid has increased the difficulty of operation, such as poor surgical field, long operation time, difficulty in suture repair, and high blood loss.
Patients or Participants: A 26-year-old woman, nullipara, married one year ago and preparing for pregnancy. The cervical fibroid was found four years ago without surgical management. She developed bulging anal sensation one month ago. Gynecological examination demonstrated a narrow and long vagina which could barely accommodate two fingers. It was difficult to fully expose the cervix, with a myomatous protuberance about 5 cm in diameter in the posterior lip of the cervix toward the vagina with MRI confirmation.
Interventions: Transvaginal natural orifice transluminal endoscopic cervical myomectomy is recommended.
1. Insert the PORT in the vagina and fill it with CO2 to form a cavity and fully expose the visual field.
2. Inject diluted Vasopressin into fibroid to reduce bleeding through puncture needle.
3. Open the capsule of fibroid with Ultrasonic scalpel and completely separate and remove the fibroid with the assistance of grasping forcep.
4. The fibroid incisional pedicle was closed by suture and waterbag oppressing with good hemostasis.
Measurements and Main Results: The patient was discharged on the 1st postoperative day without vaginal bleeding. The pathology showed leiomyoma. There was no sense of anal bulge during postoperative follow-up.
Conclusion: Transvaginal natural orifice transluminal endoscopic cervical myomectomy is a feasible and safe operation with benefits of clear exposure, no abdominal scar, less pain, and easy specimen removal.

VIDEO SESSION 16 - Natural Orifice Surgery
(2:00 PM — 3:00 PM), 2:27 PM

Category: Natural Orifice Surgery

SubCategory: Single-Port

Retroperitoneal Myolipoma Excision Via vNOTES

Arruga Novoa y Novoa V, Chamseddine P, Shalabi F, Vilkins A, Abood J. Obstetrics and Gynecology, Henry Ford Health, Detroit, MI*
*Corresponding author.

Study Objective: To illustrate the excision of a retroperitoneal myolipoma via VNOTES (vaginal natural orifice transluminal endoscopic surgery).
Design: Stepwise demonstration of surgical technique with narrated video footage.
Setting: Myolipoma is a rare benign soft tissue tumor composed of smooth muscle cells and adipocytes. It can occur in different locations including the retroperitoneal space, abdominal cavity, pericardium and spinal cord. Retroperitoneal myolipoma can be misdiagnosed radiologically as ovarian teratoma due to the adipose tissue component and location in the pelvis. Techniques used until now by gynecologic surgeons for retroperitoneal mass resection were either classic laparoscopy or laparotomy. This video highlights the vaginal approach.
Patients or Participants: 65-year-old female who presented with right flank pain. Pelvic ultrasound and MRI revealed a $7 \times 6 \times 4$ cm pelvic mass concerning for right ovarian dermoid.
Interventions: VNOTES approach for resection of retroperitoneal mass with concomitant bilateral salpingoophorectomy.
Measurements and Main Results: The key surgical steps are as follows:
- Review of pelvic anatomy from VNOTES perspective.
- Identification of retroperitoneal mass.
- Techniques to increase surgical exposure from vaginal approach.
- Dissection of retroperitoneal space with care to avoid the ureter.
- Resection of myolipoma.

Conclusion: This video demonstrates that with appropriate identification of key anatomical landmarks and surgical technique, vNOTES is a feasible procedure for retroperitoneal mass excision.

VIDEO SESSION 16 - Natural Orifice Surgery
(2:00 PM — 3:00 PM), 2:33 PM

Category: Natural Orifice Surgery

SubCategory: Urogyn/Pelvic Floor Disorders

Vaginal Natural Orifice Transluminal Endoscopic Surgery (vNOTES) for Uterosacral Ligament Suspension: Tips and Tricks

Ramanathan A,[*,1] Lewis D,[1] Fashakin S,[2] Iglesia C[1]. [1]Obstetrics and Gynecology, MedStar Georgetown University/ Washington Hospital Center, Washington, DC; [2]Georgetown University, Washington, DC*
*Corresponding author.

Study Objective: While performance of uterosacral ligament suspension (USLS) vaginally or laparoscopically is the norm in the United States, vaginal natural orifice transluminal endoscopic surgery (vNOTES) introduces a novel opportunity to optimize this surgical procedure. We present an educational paradigm for successful utilization of vNOTES for USLS.
Design: An educational video was designed in which we demonstrate a step-by-step guide on performance of USLS with a vNOTES approach, with tips and tricks highlighted to help gynecologic surgeons avoid common technical hurdles.
Setting: Operating room in an academic medical center.
Patients or Participants: Gynecological patients suffering from pelvic organ prolapse.
Interventions: A systematic surgical approach for successful performance of USLS utilizing vNOTES.
Measurements and Main Results: We present an educational video to provide gynecologic surgeons a resource on how to perform USLS utilizing vNOTES. The following tips and tricks are highlighted: 1) utilization of an 8mm central port for passage of sutures and needles, 2) set-up of an organizational system for USLS sutures, 3) use of the contralateral needle driver to provide countertraction on the uterosacral ligament.
Conclusion: Use of vNOTES for performance of USLS has many benefits including improved visualization of the ureter, enhanced surgical ergonomics, and higher USLS suture placement for improved apical support. Employment of the steps demonstrated in this video can help gynecologic surgeons avoid common operative pitfalls.

VIDEO SESSION 16 - Natural Orifice Surgery
(2:00 PM — 3:00 PM), 2:39 PM

Category: Single-Port

SubCategory: New Instrumentation or Technology

Transumbilical Laparoscopic Single Site Extraperitoneal Approach Technique for Para-Aortic Lymphadenectomy

Wang Q,[*,1] *Guo X,*[*,1] *Han R,*[*,2] *Chen B,*[1] *Li L,*[1] *Jia P,*[1] *Liu J,*[3] *Guan Z*[4].
[1]*Xinxiang Central Hospital, Xinxiang, Henan, China;* [2]*The Fourth Clinical College of Xinxiang Medical University, Xinxiang, Henan, China;* [3]*The Third Affiliated Hospital of Guangzhou Medical University, Guangzhou, China;* [4]*Minimally Invasive Gynecological Surgery, Baylor College of Medicine, Houston, TX*
*Corresponding author.

Study Objective: To explore transumbilical single port laparoscopic (TU-LESS) extraperitoneal approach for para-aortic lymphadenectomy.
Design: The step-wise video demonstrates the novel technique of extraperitoneal para-aorta lymphadenectomy.
Setting: An academic tertiary care hospital.
Patients or Participants: A 52-year-old with a two-year postmenopausal patient, G3P2, had abnormal vaginal bleeding with a diagnosis of endometrial cancer for seven days. Preoperative diagnosis: Endometrial gland cancer (G2) stage IA. We have successfully performed five similar surgeries using this new technique.
Interventions: In patients with endometrial and advanced cervical cancer, it is necessary to determine whether there is cancer metastasis in the para-aortic lymph nodes. Thus, it is recommended to expand the scope of radiotherapy for patients with positive para-aortic lymph nodes to increase the survival rate. However, the techniques available for detecting non-invasive sentinel lymph node positivity in clinical practice have not been widely developed, and most surgeons rely on surgical staging for accurate evaluation. Moreover, laparotomy surgery has significant trauma and many complications, and the extraperitoneal approach previously explored by surgeons did not achieve the goal of simultaneously cleaning abdominal aortic lymph nodes and pelvic lymph nodes. Therefore, using a single-site laparoscopy, we design a feasible and new minimally invasive surgical method to address this critical issue.
Measurements and Main Results: The patient was discharged home on the third day after surgery. Surgical pathology: Endometrial adenocarcinoma, G2, infiltrating less than 1/2 of the uterine wall, lymph nodes: left pelvic cavity (0/9), right pelvic cavity (0/6), left iliac total (0/1), right iliac total (0/4), left paraaortic (0/3), right paraaortic (0/5), presacral (0/5). The patient recovered well in her six months follow-up.
Conclusion: The TU-LESS extraperitoneal approach with essential novel techniques, ensuring the successful retroperitoneum entering and satisfied abdominal aortic lymph node resection, is feasible.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders
(3:15 PM — 4:15 PM), 3:18 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

Robotic-Assisted Sacrocolpopexy with Autologous Rectus Fascia (SCARF) Graft: A Mesh-Free Approach

Chan FK,[*,1] *Johansson CY*[2]. [1]*Gynaecology and Gynaecological Oncology, Macquarie University Hospital, Sydney, NSW, Australia;* [2]*Minimally Invasive Gynaecology Unit, Liverpool Hospital, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: To describe the surgical technique and outcomes of robotic-assisted sacrocolpopexy utilising autologous rectus fascia graft (SCARF).
Design: Video case report.
Setting: Da Vinci Xi Robot with lateral docking, 5 degrees left lateral tilt for rectus graft harvesting and 25 degrees Trendelenberg for sacrocolpopexy.
Patients or Participants: 75-year-old woman with Stage IV vault prolapse.
Interventions: Robotic-assisted SCARF.
Measurements and Main Results: A trapezoid-shaped right rectus donor site is marked on the abdominal skin. A 30-degree laparoscope and three arms of the Da Vinci Xi robot are used for graft harvesting with ports positioned left lateral. Graft borders are demonstrated using a hypodermic needle introduced through the abdominal wall; 2cm medial to linea alba, inferiorly to arcuate line, and laterally to transversus abdominis. Meticulous dissection of posterior rectus fascia of underlying muscle involves care not to injure epigastric vessels and intercostal nerves. The graft is kept intracorporeal. The robotic boom is then rotated 90 degrees and 2 extra ports inserted to utilise the fourth arm of the robot and for assistant use. Standard robotic sacrocolpopexy is performed. The wide end of the rectus fascia graft is cut in midline to create two arms. Each arm is sutured to anterior and posterior vagina respectively, and the remaining narrow end of the graft is sutured to the anterior longitudinal ligament at the sacral promontory using interrupted monofilament non-absorbable sutures. The peritoneum is closed with 2.0 absorbable barbed suture. Total operating time was 89 minutes with graft harvesting time of 12 minutes. Minimal blood loss and no surgical complications were noted. The urinary catheter was removed, and patient discharged within 24 hours. Significant improvements in prolapse symptoms as well as bladder and bowel function were noted at follow-up to 18 months.
Conclusion: Robotic SCARF is an effective procedure for treatment of vaginal vault prolapse and avoids mesh-related complications.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders
(3:15 PM — 4:15 PM), 3:24 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Basic Science/Education

Transverse Anterior Colporrhaphy in Combination with a Percutaneous Hysteropexy for the Treatment of Anterior Apical Defect

Tymon J[*]. *OB/GYN, St Luke's University Health Network, Allentown, PA*
*Corresponding author.

Study Objective: To demonstrate an anatomical based surgical technique to address the root cause of the vast majority of large cystoceles, i.e., apical detachment and vaginal wall lengthening. To review the underlying anatomical basis of a transverse defect repair established by dynamic MRI studies.
Design: Video highlighting a new surgical technique with correlation to pelvic anatomy and pathophysiology of pelvic organ prolapse.
Setting: Patient is supine in dorsal lithotomy position with the bed at maximum height and in Trendelenberg.
Patients or Participants: Patient was selected based on pre-operative POPQ score.
Interventions: Transverse Anterior Colporrhaphy at the time of Percutaneous Hysteropexy for Apical Repair.
Measurements and Main Results: Improved restoration of normal anatomy and decreased recurrence of bulge symptoms.
Conclusion: This is an easy addition to apical repair that can have tremendous short and long term results and improve patient satisfaction.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders

(3:15 PM — 4:15 PM), 3:30 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Fibroids

Urologic Complication after Uterine Artery Embolization: A Case of Fibroid Fistulization

Yu L,[*1] Lee Z,[2] Brown O,[3] Tsai S,[1] Milad MP,[1] Chaudhari A,[1] Urbina P,[1] Yang LC[1]. [1]Obstetrics & Gynecology, Northwestern Medicine/Northwestern University, Chicago, IL; [2]Urology, Northwestern Medicine/Northwestern University, Chicago, IL; [3]Division of Female Pelvic Medicine and Reconstructive Surgery, Northwestern Medicine, Chicago, IL*
*Corresponding author.

Study Objective: To describe the clinical presentation and management of a rare complication after uterine artery embolization (UAE).
Design: This study is a case report of a patient who provided consent to the use of surgical footage.
Setting: The patient underwent surgical management at an academic, tertiary care center utilizing a multi-disciplinary approach including Minimally Invasive Gynecologic Surgery (MIGS), Female Pelvic Medicine and Reconstructive Surgery (FPMRS), and Reconstructive Urologic Surgery.
Patients or Participants: Patient was referred for specialty care evaluation of suspected complication after UAE.
Interventions: Patient underwent total laparoscopic hysterectomy, bilateral salpingo-oophorectomy with robot-assisted partial cystectomy and reconstruction approximately 6 months following UAE.
Measurements and Main Results: Prior to definitive surgical management, patient had CT cystogram and MRI of the abdomen and pelvis that demonstrated a treated fibroid that had fistulized to the bladder dome. This was confirmed on cystoscopy evaluation. Patient was discharged on post-operative day 1 with an indwelling Foley catheter. A CT cystogram performed 4 weeks post-operatively demonstrated no evidence of bladder leak and Foley catheter was discontinued. At 8 weeks, patient had no further pelvic pain with plan for follow-up with her primary OB-GYN.
Conclusion: Urologic complications after UAE are uncommon but can present with pelvic pain, hematuria, and recurrent bladder stones. Post-procedure CT and MR imaging can be useful in evaluation, however clinicians should have a low threshold to use cystoscopy to directly visualize any potential abnormalities identified on imaging. A multi-disciplinary approach plays an important role in optimizing patient care and outcomes. Furthermore, a minimally invasive approach is not contra-indicated and should be employed whenever possible to facilitate patient recovery.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders

(3:15 PM — 4:15 PM), 3:36 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Laparoscopy

Endoscopic Management of Mersilene Tape Cerclage Bladder Perforation

Edell HC,[*1] Kung R,[2] Herschorn SC,[3] Lee P[1]. [1]Urogynecology, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [2]Urogynecology, Minimally Invasive Surgery, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [3]Urology, Sunnybrook Health Sciences Centre, Toronto, ON, Canada*
*Corresponding author.

Study Objective: This educational video presents the surgical management of a rare case of mersilene tape cerclage bladder perforation.
Design: N/A.
Setting: Tertiary Care Hospital.
Patients or Participants: N/A.
Interventions: Endoscopic (laparoscopic and cystoscopic) excision of mersilene tape cerclage from the bladder.
Measurements and Main Results: Cerclage bladder perforation may be successfully managed by minimally invasive surgical techniques.
Conclusion: In women presenting with lower urinary tract symptoms who have previously had a cervical cerclage, consider bladder perforation as a possible cause.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders

(3:15 PM — 4:15 PM), 3:42 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: New Instrumentation or Technology

Novel Technique for Colpocleisis: The Use of Tangential Hydro-Surgical Debridement.

Jalloul R,[*1] Ayoub H,[2] El Shatanoufy S[3]. [1]Department of Obstetrics, Gynecology and Reproductive Sciences, The University of Texas Health Science Center at Houston, Houston, TX; [2]Department of Surgery, division of Urology, The University of Texas Health in Houston, Houston, TX; [3]Department of Obstetrics, Gynecology and Reproductive Sciences, The University of Texas Health in Houston, Houston, TX*
*Corresponding author.

Study Objective: To demonstrate the use of a novel surgical technique to remove the vaginal epithelium for colpocleisis and to make even the most challenging colpocelisis easier to perform, uncomplicated and successful.
Design: New technique - Surgical Video.
Setting: Treatment of complete Procidentia.
Patients or Participants: We present the case of a 77 YO female with severe co-morbidities and poor functional status, who presented to our clinic with recurrent vaginal vault prolapse 7 years following Total vaginal hysterectomy and prolapse repair.
Interventions: We propose the use of the tangential hydro-surgical debridement to safely and rapidly perform the removal of the vaginal epithelium while controlling the depth of resection and reducing blood loss. In this device, a high velocity stream of sterile fluid jets across the operating window, and into an evacuation sheath. *Through the Venturi principle, the jet creates a suction force that draws tissues into the path of the fluid where they are ablated and the debris is simultaneously aspirated to waste.*
Measurements and Main Results: The entire vaginal epithelium is removed from the prolapsed vaginal tube using tangential hydro-surgical debridement within 10 minutes.
Conclusion: Tangential hydro-surgical device may be used to remove the vaginal epithelium to shorten the duration of the surgery and could potentially reduce the risk of blood loss, bladder or rectal injury that can be associated with surgical dissection.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders

(3:15 PM — 4:15 PM), 3:48 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Pelvic Pain

Case Presentation and Surgical Approach: Robot Assisted Mesh Excision

Kolesnikova K, Shakiba K. Women's Pelvic Surgery of NJ, Hackensack, NJ*
*Corresponding author.

Study Objective: The objective of this video abstract was to demonstrate the step-by-step surgical technique of robot-assisted excision of transvaginal mesh in a case study of a patient with vaginal mesh erosion and complications.
Design: This was a single case study with step-by-step surgical technique. Data available 1 month following surgery was included.
Setting: During the procedure, the patient was positioned in lithotomy position and 4 robotic ports were used - umbilical, right and left upper quadrant, and left lower quadrant. The robotic system was docked in the usual right-sided fashion.
Patients or Participants: The patient in this case study was a 50-year-old female who presented with transvaginal mesh complications, including vaginal discharge, bleeding, and pelvic pain.
Interventions: The intervention was robot-assisted excision of the transvaginal mesh.
Measurements and Main Results: The video abstract demonstrated the step-by-step surgical technique of robot-assisted excision of the transvaginal mesh. The results showed that the transvaginal mesh was fully resected with minimal estimated blood loss (EBL) and no intra-operative complications. Following the procedure, the patient recovered well and reported resolution of pelvic and hip pain.
Conclusion: This video abstract demonstrates the successful use of robot-assisted surgery for the excision of transvaginal mesh in a case study with excellent patient outcomes. The presented surgical technique may have significant clinical applications for the management of transvaginal mesh complications. Further studies are needed to confirm these findings and investigate the long-term outcomes.

VIDEO SESSION 17 - Urogynecology / Pelvic Floor Disorders

(3:15 PM — 4:15 PM), 3:54 PM

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

Hypogastric Nerve Dissection to Aid in Identification of the Sacral Promontory at the Time of Sacral Colpopexy

Burger K, Myers E. Female Pelvic Medicine and Reconstructive Surgery, Atrium Health Wake Forest University School of Medicine, Charlotte, NC*
*Corresponding author.

Study Objective: We describe the surgical technique for dissection of the right hypogastric nerve to aid in identification of the sacral promontory at the time of sacral colpopexy.
Design: This is a series of surgical videos showing a safe step-by-step demonstration of a reproducible dissection of the presacral space.
Setting: While this technique can be adopted in all sacral colpopexy approaches, we show examples of robotic surgery. In the operating room, a patient cart and robotic console were utilized with standard robotic port placement. The patient was positioned in dorsal lithotomy.
Patients or Participants: In this IRB-exempt study, three de-identified videos were included in this video compilation. One video was chosen as it demonstrated well the surgical technique for a basic dissection of the right hypogastric nerve to aid in identification of the promontory. The subsequent two examples were chosen as they demonstrated more challenging cases of promontory identification in which the right hypogastric nerve dissection was particularly useful.
Interventions: The right hypogastric nerve is identified, gently elevated, and dissected so that it is spared and serves as a guide for dissection of the presacral space.
Measurements and Main Results: In these video examples, right hypogastric nerve dissection is illustrated as a novel approach for safe entry into the presacral space using the nerve as a roadmap to the sacral promontory.
Conclusion: The right hypogastric nerve can be a useful anatomic structure for dissection of the presacral space and identification of the sacral promontory. In cases that are particularly challenging, dissection of the hypogastric nerve may spare the nerve from injury and allow for safer navigation through an otherwise perilous space.

VIDEO SESSION 18 - Laparoscopy

(3:15 PM — 4:15 PM), 3:18 PM

Category: Laparoscopy

SubCategory: Obese Patients

Positioning of Obese Patients during Gynecologic Laparoscopic Surgery

Sullender R,[1] McClurg A,[2] Schiff L[2]. [1]University of California at San Diego, La Jolla, CA; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC*
*Corresponding author.

Study Objective: The objective was to demonstrate proper positioning of obese patients during laparoscopic gynecologic surgery.
Design: Video demonstration of peri-operative footage with narrated description.
Setting: Tertiary care academic teaching hospital.
Patients or Participants: Obese patients who underwent minimally invasive surgery for benign conditions.
Interventions: None.
Measurements and Main Results: 42% of women in the United States were obese in 2018. Gynecologic surgery requires proper positioning to minimize avoidable complications. Obese patients face unique challenges in the operating room including difficulty with positioning due to their weight and habitus. In this video, we review common neuropathies that obese patients are at a higher risk for. We discuss techniques for proper positioning generally as well as key steps for management of the upper and lower extremities. We also demonstrate management of a large pannus during laparoscopy.
Conclusion: Successful pelvic surgery requires adequate knowledge of anatomy, particularly related to the upper and lower extremity nerves, to minimize complications related to positioning. Recognizing strategies to properly positioning obese patients is essential.

VIDEO SESSION 18 - Laparoscopy

(3:15 PM — 4:15 PM), 3:24 PM

Category: Laparoscopy

SubCategory: New Instrumentation or Technology

Laparoscopic Resection of a Rare Intramural Ectopic Pregnancy

Flatow V, Zakashansky K. Department of Obstetrics, Gynecology and Reproductive Science, The Icahn School of Medicine at Mount Sinai, New York, NY*
*Corresponding author.

Study Objective: To demonstrate the successful laparoscopic treatment of an intramural ectopic pregnancy.
Design: Surgical video.
Setting: Tertiary care academic medical center in the United States.
Patients or Participants: One patient with an intramural ectopic pregnancy.
Interventions: N/A.
Measurements and Main Results: Intramural ectopic pregnancies occur in the wall of the uterus surrounded by myometrium. They account for less

than 1% of ectopic pregnancies. A 2013 review found only 53 reported cases of intramural ectopic pregnancy. A 2020 review found only 17 reported cases of minimally invasive treatment for intramural ectopic pregnancy; laparoscopic treatment was most common (n=11), followed by laparoscopy combined with hysteroscopy (n=6), and hysteroscopy alone (n=1). To our knowledge, there have been no published video footage of a successful laparoscopic treatment of an intramural ectopic pregnancy.
A 29-year-old P1 11w5d by LMP was referred to our hospital for possible cornual ectopic. She was originally misdiagnosed with a missed abortion at an outside hospital and underwent an office manual vacuum aspiration. 32 days after her procedure her bHCG hormone increased; a trans-vaginal ultrasound showed a cystic mass in the myometrium. An MRI from our institution demonstrated a cystic mass in the anterior uterine wall separate from the uterine cavity and cornua. A hysterosocpy was performed with no products of conception noted in the endometrial cavity. The intramural ectopic was excised laparoscopically with an estimated blood loss of 50 mL. On post-operative day 1 the bHCG dropped and it subsequently spontaneously resolved to zero. Pathology from the excised specimen was consistent with an intramural ectopic pregnancy.
Conclusion: This is the only known video demonstrating laparoscopic treatment of an intramural ectopic pregnancy. Laparoscopic excision is a potentially safe option for treatment of intramural ectopic pregnancy as an alternative to laparotomy. Further research is needed to determine the optimal treatment strategy, however intramural ectopic pregnancies are difficult to study given their rarity.

VIDEO SESSION 18 - Laparoscopy
(3:15 PM — 4:15 PM), 3:30 PM

Category: Laparoscopy

SubCategory: New Instrumentation or Technology

The Lightning Bolt: A Simplified Laparoscopic Closure Technique after Ovarian Cystectomy

Norton TJ,[*,1] Mahnert N,[2] Mourad J*[3]. [1]*Obstetrics and Gynecology, University of Arizona College of Medicine, Phoenix, AZ;* [2]*Obstetrics and Gynecology, University of Arizona College of Medicine Phoenix, Phoenix, AZ;* [3]*Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ*
*Corresponding author.

Study Objective: To review options for achieving hemostasis after laparoscopic ovarian cystectomy, demonstrate the limitations of several methods of laparoscopic suturing, and introduce a novel laparoscopic suturing technique after cystectomy that facilitates closure.
Design: Demonstration of a new technique.
Setting: Tertiary academic hospital.
Patients or Participants: N/A.
Interventions: Laparoscopic suture closure of the ovarian stroma after cystectomy.
Measurements and Main Results: This video discusses various methods of achieving hemostasis of the ovarian stroma following ovarian cystectomy including the use of energy, hemostatic agents and suture closure. Various limitations of these methods are reviewed, including the potential decreased ovarian reserve with energy usage and the cost of some hemostatic agents. Suture reapproximation of the ovary is presented as a favorable option given the low cost and preservation of ovarian function. The pros and cons of multiple laparoscopic suturing techniques in the setting are discussed, and a modified suturing technique is presented to facilitate reapproximation of the ovary.
Conclusion: Compared to other strategies for ensuring hemostasis after ovarian cystectomy, suturing may be less detrimental to ovarian reserve. Needle driving and knot tying may limit efficient laparoscopic suturing in learners, but the use of this lightning bolt technique may facilitate closure by combining the forehand needle driving of a running stitch with the single knot of a purse string.

VIDEO SESSION 18 - Laparoscopy
(3:15 PM — 4:15 PM), 3:36 PM

Category: Laparoscopy

SubCategory: Pelvic Pain

Laparoscopic Essure® Removal with Cornual Wedge Resection

Dai JS,[*,1] Falk LE,*[*,1] Roche MR*[2]. [1]*OBGYN, Rush University Medical Center, Chicago, IL;* [2]*Rush University Medical Center, Chicago, IL*
*Corresponding author.

Study Objective: Demonstrate the laparoscopic approach to Essure® removal via bilateral salpingectomy and cornual wedge resection.
Design: Stepwise demonstration of surgical technique with narrated video footage.
Setting: Laparoscopic procedure with three ports (GelPOINT Mini Advanced Access Platform at umbilicus, two 5 mm ports in the right and left lower quadrants) and ultrasonic energy.
Patients or Participants: A 42-year-old G4P1122 with a history of hysteroscopic sterilization with Essure® placement in 2009 who presented with chronic pelvic pain. Patient desired removal of her Essure devices with concurrent bilateral salpingectomy. Imaging suggested correct placement of the devices.
Interventions: Laparoscopic removal of Essure® devices: 1) salpingectomy; 2) cornual wedge resection with ultrasound energy; 3) incisional closure with 0 V-loc suture; 4) removal of specimens through GelPOINT.
Measurements and Main Results: Successful laparoscopic removal of intact Essure® devices.
Conclusion: Although Essure® devices are an effective form of permanent contraception, a subset of patients experience chronic pelvic pain. Laparoscopic salpingectomy with cornual wedge resection is an effective approach to removal.

VIDEO SESSION 18 - Laparoscopy
(3:15 PM — 4:15 PM), 3:42 PM

Category: Laparoscopy

SubCategory: Basic Science/Education

Operating Room Crisis Simulation - Major Vascular Injury

Goodwin D, Carey E. University of North Carolina at Chapel Hill, Chapel Hill, NC*
*Corresponding author.

Study Objective: The objectives of this video are to convey the value of simulation training for management of OR emergencies, review the logistics and necessary participants in an OR simulation, and explain the importance of debriefing and providing useful feedback after simulation training.
Design: Team simulation training.
Setting: Operating room.
Patients or Participants: Surgical teams and ancillary staff members including anesthesia, nursing, GYN surgeons, blood bank, and laboratory staff.
Interventions: An OR simulation was conducted at a university-affiliated, community-based hospital. During this training, a major vascular injury was simulated.
Measurements and Main Results: N/A.

Conclusion: Simulation is an effective training tool used to prepare surgical teams for operating room emergencies. It can mitigate experiential discrepancies in high-turnover institutions and decrease morbidity and mortality for patients. Effective simulation exercises combined with structured debriefing and feedback can improve team efficiency, communication, and learning.

VIDEO SESSION 18 - Laparoscopy

(3:15 PM — 4:15 PM), 3:48 PM

Category: Laparoscopy

SubCategory: Hysteroscopy

Laparoscopic Salpingostomy and Tubal Cannulation for Proximal Tubal Occlusion and Infertility

Sridhar S,[*,1] Thompson R,[2] Morozov V[2]. [1]Medstar Washington Hospital Center, Washington, DC; [2]MIGS, Medstar Washington Hospital Center, Washington, DC*
*Corresponding author.

Study Objective: To present a case and surgical video of laparoscopic surgical management of proximal tubal occlusion in a patient with suspected tubal factor infertility.
Design: Surgical video.
Setting: Tertiary care hospital.
Patients or Participants: 34-year-old G0 referred due to hysterosalpingography (HSG) revealing bilateral chronic occlusion of fallopian tubes at midsegment.
Interventions: The patient was looking for a recommendation to unblock her fallopian tubes in order to preserve fertility and attempt to conceive naturally. She was asymptomatic without any significant medical or surgical history. In the setting of bilateral tubal occlusion and tubal factor infertility, a robotic assisted - laparoscopic bilateral salpingostomy, hysterosalpingoscopy, and tubal cannulation was performed.
Measurements and Main Results: During hysteroscopy, a neonatal feeding tube was used for the cannulation initially, but it did not pass into the tubal ostia due to narrowing through the isthmic portion, confirming proximal tubal occlusion rather than the midsegment obstruction that was seen on HSG. The isthmic portion of the left fallopian tube, distal to the occlusion, was incised and a neonatal feeding tube was threaded through the fallopian tube lumen into the uterine cavity. Laparoscopic salpingostomy and tubal cannulation was completed successfully. There were no operative or postoperative complications and the patient recovered well without issues. Surgical techniques are reviewed in the surgical video.
Conclusion: This is a unique case on proximal tubal occlusion and surgical management with laparoscopic tubal cannulation. Laparoscopic tubal cannulation is a safe and effective minimally invasive technique to manage proximal tubal occlusion. Further studies are needed to evaluate optimal surgical technique and follow-up in these patients.

VIDEO SESSION 18 - Laparoscopy

(3:15 PM — 4:15 PM), 3:54 PM

Category: Laparoscopy

SubCategory: Other

Laparoscopic Hysterectomy for Uterus Didelphys: Surgical Challenges

Mak F,[*,1] Lee T[2]. [1]Department of Obstetrics and Gynecology, University of New Mexico, Albuquerque, NM; [2]Obstetrics, Gynecology, and Reproductive Sciences, UPMC Magee-Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: To review critical steps during total laparoscopic hysterectomy in patients with a uterus didelphys, focusing on tips for safely performing ureterolysis, isolation of uterine blood supply, colpotomy, vaginal septum resection or incorporation in the vaginal cuff closure.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Surgery is the definitive therapeutic option for symptomatic congenital uterine anomalies, including uterus didelphys. Distortion of anatomy may be present due to the broad, doubled cervices, and due to adhesive disease in the setting of prior surgeries and endometriosis, which is frequently encountered in these patients. This can make a minimally invasive approach prohibitive to many providers. There may be alterations in ureter course, variations in uterine vasculature, inability to use a uterine manipulator or colpotomy cup, and a vaginal septum that may need to be resected.
Patients or Participants: The cases of two patients with uterus didelphys undergoing total laparoscopic hysterectomy, are described. In case one, the vaginal septum is incorporated in the vaginal cuff closure. In case two, the vaginal septum is resected. In case one, endometriosis is present. In case two, anterior adhesive disease due to a prior cesarean section is present.
Interventions: This video demonstrates how to navigate the main challenges afforded by a uterus didelphys when performing laparoscopic hysterectomy. It will include how to perform ureterolysis, isolate the uterine vessel, navigate distorted anatomy, and use a Breisky retractor for uterine manipulation and colpotomy. Finally, it will review tips for resecting a vaginal septum or incorporating it in the vaginal cuff closure.
Measurements and Main Results: Both patients did well postoperatively with resolution of their symptoms.
Conclusion: Surgery is the definitive therapeutic option for symptomatic uterus didelphys. A minimally invasive approach has proven benefits over open surgery but poses challenges due to distortion of normal anatomy. Total laparoscopic hysterectomy can safely be performed by a skilled minimally invasive surgeon.

VIDEO SESSION 19 - Endometriosis

(3:15 PM — 4:15 PM), 3:18 PM

Category: Endometriosis

SubCategory: Laparoscopy

Complex Ureterolysis and Surgical Management of Ureteral Endometriosis

Lee EM,[*,1] Maheshwari E,[2] Mansuria S[3]. [1]Obstetrics, Gynecology, and Reproductive Sciences, UPMC-Magee Womens Hospital, Pittsburgh, PA; [2]Radiology, University of Pittsburgh, Pittsburgh, PA; [3]Obstetrics, Gynecology, and Reproductive Sciences, University of Pittsburgh, Pittsburgh, PA*
*Corresponding author.

Study Objective: To demonstrate the surgical technique involved in managing ureteral endometriosis.
Design: Narrated video reviewing the surgical strategies to address ureteral endometriosis and highlighting techniques and relevant anatomy in complex ureterolysis for extrinsic ureteral endometriosis.
Setting: Tertiary academic hospital.
Patients or Participants: 36-year-old G2P2 presenting with dysmenorrhea, dyspareunia, and dychezia found on imaging to have deep infiltrating endometriosis including an endometrial implant in the left ureter with severe upstream left hydroureter and hydronephrosis compromising kidney function.
Interventions: The patient underwent a total laparoscopic hysterectomy, bilateral salpingo-oophorectomy with excision of deeply infiltrating endometriosis. During surgery, the ureteral endometriosis was found to be

extrinsic in nature and was carefully dissected with successful preservation of the ureter.
Measurements and Main Results: The procedure was completed without complication. The pathology confirmed endometriosis. The patient was discharged home with a double J ureteral stent in place with plan for removal in 4-6 weeks per urology.
Conclusion: In this video, we review the surgical management of ureteral endometriosis. Ureteral endometriosis is rare, and given the lack of urinary tract symptoms, patients may present with asymptomatic hydroureter and hydronephrosis. The approach to surgical management of ureteral endometriosis depends on the location of the endometriosis implant and whether it is intrinsic or extrinsic.

VIDEO SESSION 19 - Endometriosis
(3:15 PM — 4:15 PM), 3:24 PM

Category: Endometriosis

SubCategory: Endometriosis

The "Triangle Sign": A Novel Dynamic Ultrasound Technique for Identifying an Obliterated Cul-De-Sac in Patients with a Retroverted Uterus

Mick I,[*,1] Marien M,[2] Tigdi J,[3] Zeni G,[2] Scattolon S,[2] Leonardi M[2].*
[1]Minimal invasive Gynecology, McMaster University, Hamilton, ON, Canada; [2]Gynecology, McMaster University, Hamilton, ON, Canada; [3]Obstetrics & Gynecology, McMaster University, Hamilton, ON, Canada
*Corresponding author.

Study Objective: A novel dynamic transvaginal ultrasound technique, implementing the new terminology, "Triangle Sign", for the identifying cul-de-sac obliteration.
Design: Case series.
Setting: McMaster University Endometriosis and Chronic Pain clinic.
Patients or Participants: Women with endometriosis and chronic pelvic pain.
Interventions: Pelvic ultrasound and laparoscopic surgery.
Measurements and Main Results: N/A.
Conclusion: By evaluating the separation between the uterus and posterior structures and identifying the presence of fluid within the cul-de-sac, the "Triangle Sign" technique could improve the accuracy of diagnosis and guide surgical management.

VIDEO SESSION 19 - Endometriosis
(3:15 PM — 4:15 PM), 3:30 PM

Category: Endometriosis

SubCategory: Basic Science/Education

A Step-By-Step Approach to Uterosacral Ligaments Evaluation on Transvaginal Ultrasound

Marien M, Zeni G, Mick I, Tigdi J, Scattolon S, Leonardi M. Gynecology, McMaster University, Hamilton, ON, Canada*
*Corresponding author.

Study Objective: The objective was to describe a stepwise approach for uterosacral ligaments assessment on transvaginal ultrasound.
Design: Images and cineclips used in the video were taken from the patients seen in our endometriosis clinic and were all captured by our minimally advanced gynecology team.
Setting: Our endometriosis clinic.
Patients or Participants: Patients from which cineclips and images were taken are all patients we saw in our endometriosis clinic and scanned ourselves.
Interventions: Transvaginal ultrasound for mapping of endometriosis disease.
Measurements and Main Results: N/A.
Conclusion: Transvaginal ultrasound is a very valuable tool in mapping endometriosis disease, both in the objectives of obtaining a diagnosis for the patient and to plan for surgery.

VIDEO SESSION 19 - Endometriosis
(3:15 PM — 4:15 PM), 3:36 PM

Category: Endometriosis

SubCategory: Laparoscopy

Combined Thoracic and Gynecologic Surgical Management of Pleural, Pericardial, Diaphragmatic, Liver, and Pelvic Endometriosis

Danesh G,[*,1] Benseler A,[1] Sarna N,[2] Ahmadi N,[3] Kroft J[4]. [1]University of Toronto, Toronto, ON, Canada; [2]Sunnybrook Health Sciences Centre, Toronto, ON, Canada; [3]Michael Garron Hospital, Toronto, ON, Canada; [4]Obstetrics & Gynaecology, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: This video demonstrates a combined thoracic and gynecologic surgical approach for the management of pleural, pericardial, diaphragmatic, liver, and pelvic endometriosis.
Design: A right video-assisted thoracoscopic surgery for management of recurrent hemothoraces, followed by abdominopelvic excision of endometriosis was planned. The patient was then assessed 6 months post-operatively.
Setting: The patient was placed in the left lateral decubitus position for the right video-assisted thoracoscopic surgery portion of the procedure. She was then placed in the dorsal lithotomy position for the abdominopelvic segment.
Patients or Participants: The patient underwent surgical management of endometriosis due to her history of catamenial hemothoraces requiring multiple chest tubes and thoracentesis procedures, pelvic pain, and desire for fertility.
Interventions: The patient underwent a right bronchoscopy, right lower lobe wedge resection of the lung, excision of pericardial endometriosis, intercostal nerve block, mechanical pleurodesis, chest tube insertion, laser vaporization of liver endometriosis, excision of pelvic endometriosis, and bilateral ureterolysis with a multi-disciplinary team involving thoracic surgery and gynecology. Intra-operative consultations with a hepato-pancreato-biliary surgeon and general surgeon were also completed.
Measurements and Main Results: The patient remained well post-operatively and was discharged home after the removal of her chest tube. At her 6-month post-operative visit, she was not experiencing any chest or pelvic symptoms.
Conclusion: The surgical management of endometriosis may require a multidisciplinary approach for complete resection.

VIDEO SESSION 19 - Endometriosis
(3:15 PM — 4:15 PM), 3:42 PM

Category: Endometriosis

SubCategory: Robotics

Follow the Yellow Brick Road... an Unusual Case of an "Angulated" Bowel

Peters N,[*,1] Phan-Thien KC,[2] Conrad DH,[3] Zuschmann A,[1] Harris A[4].*
[1]SMIGS The Sutherland Hospital, Sydney, NSW, Australia; [2]St George Hospital, Sydney, NSW, Australia; [3]Gynaecology, SMIGS The Sutherland Hospital, Sydney, NSW, Australia; [4]Sydney Minimally Invasive Gynaecological Surgery (SMIGS) -The Sutherland Hospital, Sydney, NSW, Australia
*Corresponding author.

Study Objective: N/A.
Design: N/A.
Setting: N/A.
Patients or Participants: 36-year-old patient with 2 previous endometriosis surgeries presenting with ongoing dysmenorrhoea, dyspareunia and altered bowel function undergoing planned robotic gynaecologic and colorectal surgery.
Interventions: Robotic assisted adhesiolysis of fixed severe bowel angulations and rectal shaving demonstrating relevant anatomy and surgical learning points.
Measurements and Main Results: The patient made an uncomplicated recovery.
Conclusion: Adhesiolysis was used to successfully facilitate rectal shaving and avoid unnecessary segmental resection and associated adverse effects.

VIDEO SESSION 19 - Endometriosis
(3:15 PM — 4:15 PM), 3:48 PM

Category: Endometriosis

SubCategory: Laparoscopy

Laparoscopic Excision of Obturator Internus Endometriosis Implant

Chatroux LR, Einarsson JI. Obstetrics and Gynecology Division of Minimally Invasive Gynecologic Surgery, Brigham and Women's Hospital, Boston, MA*
*Corresponding author.

Study Objective: To show how obturator internus endometriosis can safely be managed with laparoscopic resection.
Design: Stepwise demonstration of the technique with narrated video footage.
Setting: Endometriosis is a common disease that can affect the pelvic organs as well as distal structures. It can rarely be found invading into the muscles surrounding the pelvis.
Patients or Participants: We present the case of a 46-year-old with a known history of endometriosis who had left hip pain and was found to have a nodule on the left obturator internus muscle on MRI concerning for an endometriosis implant. This space is not commonly entered during gynecologic surgery but with thorough anatomical knowledge and careful surgical technique the endometriosis implant can be safely removed laparoscopically.
Interventions: Laparoscopic resection of left obturator internus endometriosis implant with the following key steps:
1. Left ureterolysis is performed.
2. The external iliac artery is followed to the psoas muscle and then the obturator muscle.
3. The obturator nerve is identified and then dissected to the level of the obturator foramen.
4. The left uterine artery is dissected at its origin and ligated. The obturator artery is identified and spared.
5. The bladder is backfilled to confirm the nodule does not invade into the bladder wall.
6. The obturator internus nodule is fully isolated and excised.
Measurements and Main Results: Pathology confirmed endometriosis in all excised nodules and the patient had significant symptomatic improvement at 4 weeks postop.
Conclusion: Endometriosis lesions in the obturator internus muscle can cause significant symptoms and surgical resection with laparoscopy is safe with thorough anatomical knowledge and careful surgical technique.

VIDEO SESSION 19 - Endometriosis
(3:15 PM — 4:15 PM), 3:54 PM

Category: Endometriosis

SubCategory: Laparoscopy

The Perfect Storm: A Case of Giant Fibroid, Adenomyosis, Ovarian Endometrioma and Deep Infiltrating Bowel Endometriosis

Sanchez M,[1] Cuesta L,[2] Serrano C,[3] Piedrahíta-Gutiérrez DL,[4] López Isanoa JD,[5] Ramírez Palacio J,[6] Villegas-Echeverri J,[7] López Jaramillo JD[8]. [1]Unidad de Laparoscopia Ginecológica Avanzada y Dolor Pélvico Crónico-ALGIA, Pereira, Colombia; [2]Unidad de cirugía endoscópica ginecológica, Clinica del Prado, Medellin, Colombia; [3]Endoscopia ginecológica, Hospital Dr. Manuel GEA González, Ciudad de México, EM, Mexico; [4]Unidad de Laparoscopia Ginecológica Avanzada y Dolor Pélvico Crónico- ALGIA, Pereira, Colombia; [5]Unidad de Laparoscopia Ginecológica Avanzada y Dolor Pélvico Crónico-ALGIA, Pereira, Risaralda, Colombia; [6]Cirugía general, Clínica Comfamiliar, Pereira, Risaralda, Colombia; [7]Unidad de Laparoscopia Ginecológica Avanzada y Dolor Pélvico - ALGIA, Pereira, Risaralda, Colombia; [8]Unidad de Laparoscopia Ginecológica Avanzada y Dolor Pélvico Crónico-ALGIA, Pereira, Risaralda, Colombia*
*Corresponding author.

Study Objective: To describe different surgical techniques employed to overcome one challenging case. To review the anatomic landmarks to consider when facing a distorted pelvic anatomy. To encourage surgeons to address challenging cases through a minimally invasive approach.
Design: Clinical case- Video presentation.
Setting: Algia, Unidad de Laparoscopia avanzada y Dolor Pélvico Crónico.
Patients or Participants: 52 y/o nulliparous perimenopausal patient with a long term severe chronic pelvic pain, dysmenorrhea, dyschezia and compressive bladder symptoms.
Interventions: Total laparoscopic hysterectomy, bilateral salpingo-oophorectomy, resection of deep infiltrating endometriosis of the posterior compartment, and discoid bowel resection.
Measurements and Main Results: To demonstrate the surgical approach for a complex surgical minimally invasive case.
Conclusion: This case represents a combination of different benign gynecologycal pathologies that can be dealt together with a minimally invasive approach. Extensive knowledge of the pelvic anatomy along with a formal surgical training are essential to address challenging surgical cases that often require alternative dissecting strategies.
There are several minimally invasive strategies available, that can be combined to face highly complex surgical cases in order to offer women with benign gynecological pathology better cosmetic results and clinical outcomes.
Surgeons should not be overwhelmed by cases that seem difficult when there is adequate preparation and teamwork.

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AAGL ELEVATING GYNECOLOGIC SURGERY WORLDWIDE

Virtual Poster Presentations

Category: Basic Science/Education

SubCategory: Research

9410 Analysis of MIGS Exposure in OBGYN Residency

Malkami C,[*,1] *Rogers A,*[1] *Sohal N,*[1] *Lanzer J*[2]. [1]*Medical College of Georgia at Augusta University, Augusta, GA;* [2]*Department of Obstetrics and Gynecology, Medical College of Georgia at Augusta University, Augusta, GA*
*Corresponding author.

Study Objective: This study aimed to investigate the association between exposure to Minimally Invasive Gynecologic Surgery (MIGS) during residency and characteristics of Obstetrics and Gynecology residency programs.
Design: Data from 298 Obstetrics and Gynecology residency programs were collected from the Fellowship and Residency Electronic Interactive Database Access System (FREIDA). Data on the earliest possible MIGS rotation was obtained from each program's website. "Early" MIGS exposure was defined as first exposure during PGY-1 or 2. Military residencies and residencies without a schedule on their website were excluded. The data was analyzed to identify any associations between program characteristics and MIGS exposure.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: Out of 256 programs analyzed, 15.23% were affiliated with a MIGS fellowship, and 19.53% had a designated MIGS rotation. Of these programs, 6% offered MIGS as early as PGY-1, 26% offered it for the first time PGY-2, 38% PGY-3, and 15% did not offer it until PGY-4. There was a marginally significant association between affiliation with a MIGS fellowship and having a MIGS rotation (p-value= 0.0545). No significant association was found between program setting (University-based vs. Community-based, university-affiliated) or fellowship affiliation and earliest MIGS exposure. However, smaller program size (measured by number of interns per class) was associated with more early MIGS exposure (5.25 vs. 6.24, p-value=0.0447).
Conclusion: This study provides valuable insights into the state of MIGS exposure during Obstetrics and Gynecology residency and highlights the potential impact of program characteristics on exposure to the field. However, these findings do not necessarily encompass the totality of MIGS exposure during training at these programs. Other factors not accounted for in this study, such as individual program leadership, resident interest, and available resources, may also influence exposure to MIGS. We hope these findings can guide students applying to Obstetrics and Gynecology residency programs and offer helpful insights to program directors.

Category: Research

SubCategory: Reproductive Medicine

9430 The Impact of Anxiety and Depression on Regret after Hysterectomy

Arruga Novoa y Novoa V,[*,1] *Sitarik A,*[2] *Su WT,*[2] *Bossick A,*[2] *Wegienka G,*[2] *Chamseddine P,*[1] *Vilkins A,*[1] *Abood J*[1]. [1]*Obstetrics and Gynecology, Henry Ford Health, Detroit, MI;* [2]*Department of Public Health Sciences, Henry Ford Health, Detroit, MI*
*Corresponding author.

Study Objective: To understand the relationship between anxiety/depression prior to hysterectomy and patterns of regret following hysterectomy.
Design: Prospective cohort study of women undergoing hysterectomy.
Setting: Academic tertiary medical center.
Patients or Participants: 456 women who underwent hysterectomy for benign indications.
Interventions: N/A.
Measurements and Main Results: Women were contacted by phone 2 weeks before their scheduled hysterectomy for a baseline interview. Participants were then contacted again 1, 4, and 6 weeks and 3, 6, and 12 months post-surgery to complete validated questionnaires. The exposure of interest was anxiety/depression prior to hysterectomy, defined based on one of the EuroQol-5D-3L dimensions. The primary outcome was pattern of regret through the year post-hysterectomy, defined by latent class analysis. A total of 3 classes were identified: Class 1: High Regret (high regret at baseline that did not improve over time; 34 (7.4%)), Class 2: Decreasing Regret (high regret at baseline but improved over time; 61 (13.4%)) and Class 3: Least Regret (low baseline regret that remained low over time; 361 (79.2%)). Relative to women who were not anxious or depressed, those who were moderately anxious or depressed were 2.53 times as likely to be in the High Regret class relative to the Least Regret class (Risk Ratio (2.53 [1.17, 5.50]). Additionally, those who were extremely anxious or depressed were 3.1 times as likely to be in the Decreasing Regret class (RR [95% CI] = 3.10 [1.41, 6.80]).
Conclusion: Specific comparisons revealed that anxiety/depression prior to hysterectomy was associated with increased probability of High Regret and Decreasing Regret. Surgeons may wish to consider each patient's level of anxiety and depression when conducting pre-surgical counseling.

Category: Robotics

SubCategory: Reproductive Medicine

9457 Robotic-Assisted Resection of a Rudimentary Horn

*Dai JS,** *Marshalla MK,** *Roche MR**. *Rush University Medical Center, Chicago, IL*
*Corresponding author.

Study Objective: Demonstrate the evaluation and removal of a rudimentary adnexal structure in a patient with a unicornuate uterus.
Design: Stepwise demonstration of technique with narrated video footage.
Setting: Unicornuate uteruses are rare Müllerian anomalies with an incidence close to 0.1%. They result from the abnormal development of one of the Müllerian ducts and are associated with a high incidence (40 percent) of renal abnormalities. Here, we demonstrate the removal of a left-sided left sided rudimentary adnexal structure in a patient with a unicornuate uterus. Careful robotic dissection is utilized to ensure complete resection of the Müllerian remnants.
Patients or Participants: A 47-year-old G0 with symptomatic uterine fibroids who desired definitive surgical management. Her history is notable for dextrocardia and a single right-sided kidney with a congenitally absent left kidney. Her left ovary was never identified on ultrasounds.
Interventions: Robotic-assisted removal of the rudimentary adnexal structure at time of hysterectomy: 1) Development of the retroperitoneal space

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https://doi.org/

to isolate the adnexal remnant from the surrounding pelvic side wall; 2) Delineation of borders of the adnexal remnant; 3) Isolation and dissection of the infundibulopelvic ligament; 4) Use of bipolar and monopolar energy to secure and transect the remnant.
Measurements and Main Results: Video demonstration of complete resection of rudimentary adnexal remnant.
Conclusion: Careful evaluation and dissection during removal of Mullerian remnants is important in preventing the need for additional interventions and in decreasing the risk of occult malignancies.

Category: Endometriosis

SubCategory: Laparoscopy

9468 Effect of Dienogest on Serum Anti-Mullerian Hormone Level after Laparoscopic Cystectomy of Ovarian Endometrioma.

Weng SS. Obstetrics and Gynecology, MacKay Memorial Hospital, Taipei, Taiwan*
*Corresponding author.

Study Objective: This study aimed to evaluate the effect of postoperative dienogest treatment on serum anti-Mullerian hormone (AMH) levels in patients undergoing laparoscopic cystectomy of ovarian endometriomas.
Design: Non-randomized prospective comparative study.
Setting: Conventional multiple-port laparoscopy with enucleation of ovarian tumors.
Patients or Participants: 71 patients with ovarian endometriomas were enrolled. After surgery, 54 patients received oral dienogest 2 mg daily continuously for 6 months (dienogest group). The other 17 patients did not receive postoperative medical treatment (control group).
Interventions: Serum AMH levels were measured before surgery, at 3-month period after surgery, and at the end of 6-month follow-up period. Serial changes of AMH levels were compared between the two groups.
Measurements and Main Results: The age, endometrioma size, and serum AMH level before surgery were comparable between the dienogest group and the control group. The AMH levels decreased significantly at 3-month period after surgery in the dienogest group (a decrease of 65.5%; $p<0.001$) and the control group (a decrease of 64.8%; $p=0.018$). The AMH levels increased gradually from the nadir at 3-month period after surgery and recovered partially at the end of 6-month follow-up period in both groups. There were no statistically significant differences in the rate of reduction of serum AMH levels between the two groups ($p=0.707$).
Conclusion: Laparoscopic cystectomy of ovarian endometrioma causes a significant decrease in serum AMH levels. The rates of reduction of AMH levels are similar regardless of dienogest treatment. Postoperative dienogest treatment for 6 months has no rescue effect on serum AMH levels in these patients.

Category: Research

SubCategory: Other

9485 High Prevalence of Occupational Musculoskeletal Injuries and Interest in Surgical Ergonomics Training Among OB/GYN Surgeons

Potter LA,[1] Hou MY*[2]. [1]School of Medicine, University of California, Davis, Sacramento, CA; [2]Department of Obstetrics and Gynecology, Family Planning, University of California, Davis, Sacramento, CA*
*Corresponding author.

Study Objective: Describe occupational musculoskeletal (MSK) injuries and sequelae and explore current familiarity with and interest in surgical ergonomics among obstetric and gynecologic (OB/GYN) surgeons at our institution.
Design: Anonymous online survey advertised via departmental email lists, grand rounds, and resident didactics.
Setting: N/A.
Patients or Participants: We received 36 complete survey responses from 18 of 28 residents, 2 of 8 fellows, and 16 of 44 faculty at our institution 9/6/22-12/14/22.
Interventions: N/A.
Measurements and Main Results: Median respondent age was 33 years, height 5'5", and surgical glove size 6.5. Most respondents (94%) were female. Of 152 total injuries reported, 95% caused intraoperative symptoms. Most common injury sites were neck (56% respondents), lower back (53%), upper back (50%), and right hand (47%). Almost all respondents (97%) reported at least 1 injury, with an average of 4.2 injuries (range 0-10) per surgeon. Eighty-four percent of injuries were attributed to repetitive motion, 39% to operating room setup, and 28% to lack of knowledge about optimizing surgical ergonomics. After injury, surgeons self-managed their symptoms (61%), minimized or ignored their symptoms (51%), adjusted their operating technique or equipment (29%), and/or sought medical attention (19%). Sixty-four percent of respondents were not at all familiar with surgical ergonomics best practices, 81% reported difficulty operating surgical equipment due to its physical characteristics, and 86% wanted more laparoscopic instrument handle size and length options.
Conclusion: Our institution's OB/GYN occupational MSK injury prevalence (97%) is high, comparable to previous reports of up to 95%. Familiarity with surgical ergonomics best practices is relatively low. There is significant need for and interest in targeted ergonomic interventions to reduce injury. Our study is limited by possible recall bias, relatively small sample size, and lower fellow and faculty response rates. Larger studies with sufficient power are indicated to test for associations.

Category: New Instrumentation or Technology

SubCategory: Research

9479 Pushing the Envelope in Reduction of MIGS Hysterectomy Surgical Site Infection: The Role of Feco-Vaginal Contamination

Khalife T, Brien AL, DeWitt JJ. OBGYN, Mayo Clinic Health System, Mankato, MN*
*Corresponding author.

Study Objective: To evaluate the protective effect of applying an anal occlusive drape on infectious morbidity in laparoscopic hysterectomy cases where a uterine manipulator is used.
Design: Pre and Post-intervention quality improvement study. Baseline surgical site infection, urinary tract infection, and antibiotic use data were collected from January 1st, 2020, to December 31st, 2021. Patients who underwent a laparoscopic hysterectomy between March 1st, 2022, and March 1st, 2023, were included in the post-intervention arm. Fischer exact test was performed for statistical significance. Primary outcome was the reduction of SSI within 30 days after surgery.
Setting: A community hospital that is part of a large health system in Minnesota. The intervention is applied in the operating room after positioning the patient in dorsal lithotomy and administration of general anesthesia.
Patients or Participants: All patients undergoing a laparoscopic or robotic hysterectomy in the study duration were included.
Interventions: After proper positioning, the anus is cleansed using chlorhexidine-alcohol swabs. The Anal mucosa is covered with a 2×2 in gauze and secured in place with a band-aid to protect the mucosa. A 10×20 cm Ioban Incise Surgical Drape is applied to the perineal body and the surrounding perianal skin to isolate the anal orifice from the surgical field. The rest of the skin and perineum are prepped per standard protocol.
Measurements and Main Results: Post-intervention data (n=81) showed a 63% reduction in SSI (P=0.43) and a 45% decrease in UTI rates. Declines were also noted in post-operative antibiotics prescribing from 17.4% to 6.2%.
Conclusion: Decontamination of the perianal skin and isolation may have a role in reducing hysterectomy-related infectious morbidity. Because of

our small sample size, dissemination of the intervention on a broader scale is critical to provide statistically meaningful data.

Category: Fibroids

SubCategory: Laparoscopy

9508 Characteristics Associated with Blood Transfusion Among Women Undergoing Laparoscopic Myomectomy; A NSQIP Study

Hamilton KM,[*,1] *Liao C,*[2] *Truong M,*[1] *Wright K,*[1] *Meyer R*[3]. [1]*Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA;* [2]*OBGYN, Abington Hospital - Jefferson Health, Abington, PA;* [3]*Cedars-Sinai Medical Center, Los Angeles, CA*
*Corresponding author.

Study Objective: To identify risk factors for intraoperative and postoperative blood transfusion during laparoscopic myomectomy. To develop a prediction model for the risk of blood transfusion.
Design: Retrospective cohort study
Setting: The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database from 2012-2020.
Patients or Participants: Women who underwent laparoscopic (conventional or robotic) myomectomy.
Interventions: N/A.
Measurements and Main Results: Women who received ≥1 blood transfusions within 72 hours after laparoscopic myomectomy start time were compared with those who did not require blood transfusion. Multivariable analysis was to identify risk factors independently associated with the risk of transfusion. Two prediction models for the need for blood transfusion were developed based on multivariable results.
11,498 women underwent laparoscopic myomectomy during the study period, of which 331(2.9%) needed blood transfusion. In multivariable regression analysis of factors available before surgery, White race [adjusted Odds Ratio (aOR) 95% Confidence Interval (CI) 0.72 (0.53-0.98), p=0.034), bleeding disorders [aOR 95%CI 3.23 (1.63-6.45), p=0.001], ASA III/IV [aOR 95%CI 1.42 (1.02-1.98), p=0.037] and preoperative Hematocrit value <35.0% [aOR 95%CI 3.43 (2.73-4.31), p<0.001] were independently associated with risk of transfusion.
In the developed calculator, the risk of transfusion was 1.2% without risk factors, 2.4% with one, 6.1% with two and 10.8% with three risk factors. In the combined pre and intraoperative risk model, specimen weight >250 gram/≥5 intramural myomas and operation time >170 minutes were identified as additional risk factors for transfusion. The risk of transfusion ranged between 0.1% when no risk factors are present to 18.2% with five risk factors.
Conclusion: We identified preoperative and intraoperative independent risk factors for bleeding requiring blood transfusion among women undergoing laparoscopic myomectomy. A prediction model for risk of blood transfusion was developed based on the identified risk factors. Further studies are needed to validate this model.

Category: Endometriosis

SubCategory: Laparoscopy

9514 Laparoscopic Dissection of Severe Rectovaginal Endometriosis

Simko S,[*,1] *Cruz J,*[2] *Behbehani S,*[2] *Stuparich M,*[2] *Nahas S*[2]. [1]*Adventist Health White Memorial, Los Angeles, CA;* [2]*Minimally Invasive Gynecologic Surgery, University of California Riverside, Riverside, CA*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate key techniques to assist in laparoscopic resection of a rectovaginal nodule.
Design: N/A.
Setting: High volume surgical practice in a tertiary academic hospital. Patient positioned in dorsal lithotomy.
Patients or Participants: This case describes a 38-year-old gravida 0 woman with history of pelvic pain and biopsy proven 4cm deeply infiltrating rectovaginal nodule.
Interventions: On entry, the posterior cul-de-sac was found to be obliterated with the uterus scarred to the rectum and sigmoid bowel. The medial approach was taken to open up the pararectal space to approach laterally. To open the rectovaginal space, a combination of blunt and sharp dissection was used to take down the adhesions. Given the depth of the rectovaginal nodule, a colpotomy was made to safely dissect away the nodule from the vaginal tissue. Electrocautery was used to completely resect the nodule and then the colpotomy was closed with V-Loc suture.
Measurements and Main Results: This video shows key techniques in the dissection of a deeply infiltrative rectovaginal nodule, including knowing the key anatomical planes and borders of avascular spaces, starting the dissection laterally where there is healthy tissue, using probes to help delineate the rectum versus the vagina, the importance of preoperative planning, and avoiding electrosurgical instruments when close to the rectum.
Conclusion: Rectovaginal endometriosis can be challenging to manage surgically due to extensive scarring and distorted anatomy. This video provides key techniques to help surgeons navigate these often difficult cases.

Category: Laparoscopy

SubCategory: Robotics

9520 Improving Disparities in Access to Minimally Invasive Hysterectomy (MIH)

Apple AN, Mulugeta-Gordon L, Kinson M, Deagostino-Kelly M, Farrow M, Sonalkar S, James A. Hospital of the University of Pennsylvania, Philadelphia, PA*
*Corresponding author.

Study Objective: To examine rate of MIH and postoperative outcomes by race before and after the expansion of high-volume minimally invasive surgeons (>10 MIH/year).
Design: Retrospective cohort study.
Setting: Multi-center, urban academic teaching institution.
Patients or Participants: We included all patients who underwent scheduled hysterectomy for benign indications during years 2018 and 2022 and assessed 6-month outcomes. We excluded patients <18 years of age or those undergoing surgery for obstetric indications.
Interventions: Recruitment of FMIGS-trained faculty and increased robotic training for generalists occurred in 2020. The pre-intervention cohort included patients who underwent hysterectomy in 2018 (n=179) and post-intervention cohort included patients who underwent hysterectomy in 2022 (n=247).
Measurements and Main Results: We collected data on 426 patients via the electronic medical record. Patient variables included age, body mass index, American Society of Anesthesiology (ASA) class, prior abdominal/pelvic surgery, uterine weight, estimated blood loss, length of stay, discharge opiate prescription, complications, need for readmission, and surgeon. Preliminary results show that in the pre-intervention cohort, 62 of 112 Black patients (56%) underwent MIH in comparison to 40 of 54 (74%) of white patients and 7 of 13 (54%) of Asian/Other patients. During the post-intervention phase, 114 of 152 (75%) Black patients underwent MIH in comparison to 61 of 74 (82%) of white patients and 19 of 21 (90%) of Asian/Other patients. Between the pre-intervention and post-intervention phase, the number of high-volume minimally invasive surgeons doubled from 3 to 6 (100%). Analyses will adjust for patient factors described above and impact of number of high-volume surgeons using logistic regression and will also compare postoperative outcomes by race.
Conclusion: Disparities between racial minorities and white patients undergoing MIH have decreased at our institution. Increasing recruitment of FMIGs trained faculty and expansion of robotic training may contribute to reducing health disparities in gynecologic surgery.

Category: Laparoscopy

SubCategory: Basic Science/Education

9524 Consideration for Laparoscopic Surgery on Patients with Prior Bowel Resection and Ostomy

Hotz M,[*,1] Ingraham C,[2] Klebanoff J,[3] Makai G[2]. [1]Thomas Jefferson University Hospital, Philadelphia, PA; [2]Christiana Care Health System, Newark, DE; [3]Main Line Health, Wynnewood, PA*
*Corresponding author.

Study Objective: The objective of this educational video is to review common stoma site placement and highlight surgical considerations for the patient with history of bowel resection and stoma in place.
Design: Educational Surgical Video.
Setting: Academic-affiliated medical center outpatient surgical center.
Patients or Participants: Patients undergoing laparoscopic pelvic surgery for benign gynecologic indications with history of bowel resection and temporary or permanent stoma in place. A case is presented of a 27-year-old female with history of procto-colectomy with diverting ileostomy present who underwent a laparoscopic bilateral ovarian cystectomy.
Interventions: This educational video demonstrates the anatomic and lifestyle considerations taken into account when a stoma site is selected. Strategic selection of initial laparoscopic entry site is shown depending on the site of the stoma as well as appropriate placement for subsequent accessory trocars. A surgical case is shown as an example of how to approach laparoscopic surgery for a patient with a stoma.
Measurements and Main Results: N/A
Conclusion: Previous bowel surgery and ostomy is not a contraindication to minimally invasive gynecologic surgery. Surgeons should utilize their preferred initial entry technique in patients with stoma, as no single entry technique has been shown to be safer than any other. However, initial entry location should be determined by not only a patient's surgical history but also by stoma site. Accessory ports should be determined by intra-abdominal adhesions and location of the target pathology. Minimally invasive approach to colorectal surgery and ostomy creation improves the safety of future re-operation if needed.

Category: Laparoscopy

SubCategory: Robotics

9525 Pelvic Rhabdomyosarcoma in an Adolescent Presenting with Bilateral Adnexal Masses Treated with Minimally Invasive Surgical Resection

Kim V, Sulger E, Park HI. Obstetrics & Gynecology, NYU Langone Long Island School of Medicine, Mineola, NY*
*Corresponding author.

Study Objective: To review a unique presentation of acute abdomen with bilateral pelvic rhabdomyosarcomas, initially thought to be endometriosis, in an adolescent.
Design: Single case presentation.
Setting: Academic center.
Patients or Participants: Single case presentation.
Interventions: The patient underwent robotic-assisted laparoscopic lysis of adhesions, removal of abdominal pelvic masses, and excision of endometriosis lesions. The patient was placed in dorsal lithotomy position and trocars were inserted at the base of the umbilicus, left and right mid-quadrants, and at approximately 7cm lateral to the right trocar. A gel access port was placed.
Measurements and Main Results: Final surgical pathology showed that both abdominal masses were embryonal rhabdomyosarcomas. Peritoneal implants, right anterior wall lesions, right inguinal ring cysts, and right fallopian tube cysts contained fragments of tissue consistent with embryonal rhabdomyosarcoma, as well.
Conclusion: This case demonstrates that rarer pelvic pathologies may present similarly to common pelvic pathologies. Broad differential diagnoses and preoperative counseling on potential malignancies should be considered to avoid missing critical diagnoses.

Category: Adenomyosis

SubCategory: Reproductive Medicine

9540 Fertility-Sparing Laparoscopic Resection of Adenomyosis

Parikh S, Hanna H, Pasic R. University of Louisville Hospital, Louisville, KY*
*Corresponding author.

Study Objective: To demonstrate the surgical technique in the laparoscopic resection of adenomyosis in a patient desiring her future fertility.
Design: A narrated, surgical video demonstrating a step-wise approach in the laparoscopic resection of an uterine adenomyoma.
Setting: Tertiary care academic hospital institution.
Patients or Participants: A 44-year-old G1P1001 presented with a history of uterine fibroids and myomectomy, abnormal uterine bleeding, pelvic pain and infertility. She was referred by a fertility specialist for a 4.3 cm ill-defined intramural fibroid and possible adenomyosis seen on MRI. The patient desired her future fertility and planned for an embryo transfer following surgical evaluation and management of the possible fibroid or focal adenomyosis.
Interventions: A diagnostic hysteroscopy, laparoscopic adenomyomectomy, and chromopertubation were performed in order to preserve this patient's future fertility. To minimize blood loss, the uterine arteries were temporarily ligated with vascular clips at their origin bilaterally, and diluted vasopressin was injected at the site of resection. The uterine defect was laparoscopically sutured in multiple layers.
Measurements and Main Results: The patient's surgery was uncomplicated with minimal blood loss. The pathology report of the excised specimen was consistent with adenomyosis. The patient was counseled to delay embryo transfer for at least 3-6 months postoperatively.
Conclusion: In this video, we demonstrate a step-wise, fertility-sparing method in the laparoscopic resection of an adenomyosis.

Category: Pelvic Pain

SubCategory: Robotics

9547 Multidisciplinary Approach to Complex Right Lower Quadrant Pain

Dukes D,[*,1] Afuape N,[2] Ballecer C,[3] Wood C[4]. [1]Obstetrics & Gynecology, Creighton University School of Medicine, Phoenix, Phoenix, AZ; [2]Dignity Health − Cancer Institute, Phoenix, AZ; [3]Dignity Health Medical Group - Arizona, Phoenix, AZ; [4]Creighton University School of Medicine, Phoenix, Phoenix, AZ*
*Corresponding author.

Study Objective: To discuss a clinical case of chronic right lower quadrant pain, review clinical features and workup of abdominal wall endometrioma, highlight extraperitoneal robotic approach for resection of deep abdominal wall endometrioma and ventral hernia repair in an obese patient.
Design: Description and demonstration of surgical technique.
Setting: Abdominal wall endometriosis has a reported incidence of 0.8-3.5% with pain onset usually occurring after pelvic surgery (i.e., cesarean section, other gyn procedure)[1]. This diagnosis is unfortunately commonly overlooked in the primary work up of pelvic pain. There have been prior case reports supporting a minimally invasive approach to deep abdominal wall endometrioma resection. We provide further evidence in support of this approach.
Patients or Participants: N/A.
Interventions: Surgical intervention with Advanced Gynecology and General Surgery via robot-assisted laparoscopic evaluation of the pelvis

for recurrent endometriosis. Resection of recurrent intraperitoneal endometriosis and excision of deep abdominal wall endometrioma. Reduction and repair of ventral hernia with placement of abdominal wall mesh for reinforcement of weakened rectus muscle and closure of fascial defect using extraperitoneal robotic approach. Multimodal interventions for perioperative pain management.

Measurements and Main Results: N/A.

Conclusion: Extraperitoneal robotic approach is a surgical option with less morbidity and improved pain control for resection of deep abdominal wall endometrioma and ventral hernia repair in an obese patient.

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Category: Hysteroscopy

SubCategory: Reproductive Medicine

9549 Isthmocele Revision By Hysteroscopy

Najor AJ, Vyas PS, Levie MD. Obstetrics & Gynecology and Women's Health, Montefiore Medical Center, Bronx, NY*
*Corresponding author.

Study Objective: Isthmoceles, also known as cesarean scar defects, can present with abnormal uterine bleeding, pelvic pain, or secondary infertility, often requiring surgical intervention. We aim to increase awareness and appropriate utilization of hysteroscopic isthmocele revision as a well-tolerated minimally invasive approach to symptomatic isthmoceles.

Design: A case study with preoperative images, surgical video, and postoperative follow-up is reviewed.

Setting: Care took place in the operating room at a tertiary care center in the Bronx, New York. The patient was positioned in dorsal lithotomy.

Patients or Participants: The patient is a 44-year-old G6P4024 who presented for heavy menstrual bleeding and pelvic pain. Surgical history was relevant for four prior cesarean sections. Transvaginal ultrasound demonstrated uterine myomas and a 5.8 mm deep isthmocele with 3.6 mm residual myometrial thickness at its base.

Interventions: Hysteroscopic isthmocele revision was performed by resection of the inferior edge and ablation of the isthmocele base before concomitant resectoscopic myomectomy and endometrial ablation.

Measurements and Main Results: Time required for hysteroscopic revision was 13 minutes. There were no complications, and the patient was discharged the same day. Three weeks postoperatively, she reported improvement in bleeding and pelvic pain.

Conclusion: This case highlights that isthmoceles - highly prevalent and frequently symptomatic - can be revised with a relatively simple minimally invasive hysteroscopic approach and is associated with few complications.

Category: Laparoscopy

SubCategory: Dyspareunia

9551 Patient Reported Mental Well-being and Sexual Function after Vaginal Cuff Dehiscence

French HM,[1] Movilla PR,[2] Morris SN[1]. [1]Center for Minimally Invasive Gynecologic Surgery, Newton Wellesley Hospital, Newton, MA; [2]Center for Minimally Invasive Gynecologic Surgery, Newton-Wellesley Hospital, Newton, MA*
*Corresponding author.

Study Objective: Assess patient reported incidence of post-traumatic stress disorder (PTSD) and sexual dysfunction after vaginal cuff dehiscence (VCD).

Design: A retrospective review identified all patients who experienced a VCD after total laparoscopic hysterectomy (TLH) performed by three minimally invasive gynecologic surgeons from 1/1/2016-9/1/2020. A one-time electronic survey was given to measure the incidence of PTSD and sexual dysfunction following VCD.

Setting: Minimally invasive gynecologic surgery clinic at an academic hospital.

Patients or Participants: Subjects were identified using Current Procedural Terminology codes for TLH, repair procedures on the vagina, treatment of superficial wound dehiscence, or other procedures on the female genital system.

Interventions: The survey included the PTSD Checklist for DSM-5 (PCL-5), the Female Sexual Function Index questionnaire (FSFI), and an open-ended questionnaire assessing patient experience and follow-up care after VCD.

Measurements and Main Results: The incidence of VCD after TLH was 1.121% (10/824). The subject response rate was 6/10 (60.0%), with a mean time of 23.5 months (range 10.7 to 33.2) after VCD to survey completion. Respondents had a mean age of 43.5 years (range 39 to 48), gravidity of 2.8 (range 2 to 4), parity of 2.2 (range 1 to 3), and BMI of 26.4 (range 21.46 to 31.9). Primary indications for surgery were pelvic pain, 3/6 (50.0%), abnormal uterine bleeding, 2/6 (33.3%), and fibroid bulk symptoms,1/6 (16.7%). 4/6 (66.7%) subjects reported symptoms of PTSD, with 3/6 (50.0%) screening positive for PTSD using the PCL-5 questionnaire. 3/6 (50.0%) subjects reported symptoms of sexual dysfunction, with 3/6 (50.0%) screening positive for sexual dysfunction using the FSFI questionnaire. Only 2/6 (33.3%) patients reported that they were satisfied with follow-up experience after VCD repair.

Conclusion: PTSD and sexual dysfunction are common after VCD. Developing routine practices for assessment of PTSD and sexual health after VCD provides an opportunity for early intervention and referral to mental and sexual health professionals.

Category: Basic Science/Education

SubCategory: Robotics

9552 Validation of a Multidisciplinary Virtual Reality (VR) Robotic Surgical Curriculum

Kim JS,[1] Jonas N,[2] Rizvi TZ,[3] Lin Z,[3] Plewa D,[4] Ricard C,[4] Cheah YL,[5] Simon C,[5] Wright V[6]. [1]Department of Gynecology, Beth Israel Lahey Health, Burlington, MA; [2]General Surgery, New York-Presbyterian Queens, Flushing, NY; [3]Department of General Surgery, Beth Israel Lahey Health, Burlington, MA; [4]Surgical Simulation, Beth Israel Lahey Health, Burlington, MA; [5]Transplant Surgery, Beth Israel Lahey Health, Burlington, MA; [6]Gynecologic Oncology, Beth Israel Lahey Health, Burlington, MA*
*Corresponding author.

Study Objective: To identify whether trainees demonstrate improvement in a standardized knot-tying task as assessed by Global Evaluative Assessment of Robotic Skills (GEARS) score after completion of a virtual reality (VR) robotic curriculum.

Design: This was an IRB-exempt prospective study conducted with multidisciplinary surgical trainees from August 2021 − February 2023.

Setting: Trainees from three academic centers were invited to participate in this study.

Patients or Participants: Medical students and surgical residents from gynecology, urology, and general surgery were invited to participate.

Interventions: Participants initially performed a baseline robotic suturing task in which they were instructed to tie as many interrupted square knots in a 10-minute period as possible. Participants then completed a virtual reality simulation curriculum involving 23 exercises until they were able to achieve 90% proficiency on all tasks. Participants then repeated the suturing task. Both pre- and post- curriculum suturing tasks were filmed, de-identified, and scored by expert graders using a GEARS score.

Measurements and Main Results: 25 trainees completed the pre-curriculum suturing task, the VR curriculum, followed by the post-curriculum suturing tasks. Trainees demonstrated significant improvement in their post-test

GEARS score by 2.43 points (95% CI 1.19 - 3.66, p<0.05) and were able to tie three additional knots within the allotted time after completion of the curriculum (95% CI 1.54 - 3.58, p<0.05). Trainees also demonstrated a faster time to complete their first knot (129.24 second improvement, 95% CI 65.66 - 192.82, p<0.05) after completion of the curriculum. PGY3 trainees were able to tie significantly more knots prior to the curriculum as compared to PGY1 trainees and medical students (p<0.05), but this difference was no longer significant after all groups completed the curriculum (p=0.24).
Conclusion: Surgical trainees and medical students with limited prior robotic surgical experience demonstrated higher GEARS scores when comparing pre-curriculum and post-curriculum performance, and were able to tie more knots with greater efficiency.

Category: Robotics

SubCategory: Other

9564 Robotic Dissection of the Pararectal Space: Surgical Technique

Mansour T, Yi J. Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ*
*Corresponding author.

Study Objective: Demonstrate surgical techniques for robot-assisted dissection of the pararectal space.
Design: Educational Video.
Setting: Tertiary Care, academic center.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: In this video, we review the robotic surgical techniques utilized to dissect the pararectal space. Relevant pelvic anatomy is reviewed and highlighted during surgical dissection.
Conclusion: Surgical dissection of pelvic spaces is a critical skillset for the advanced gynecologic surgeon. Knowledge of anatomy and boundaries of the pelvic spaces protects important structures during pelvic surgery, especially in complex cases where anatomy is significantly altered. Proficiency in robotic movements allow for safe and effective surgical dissection.

Category: Laparoscopy

SubCategory: Robotics

9578 Utility of Routine Post-Operative Exam for Detecting Vaginal Cuff Dehiscence after Hysterectomy

Caskey R,[1] Niino C,[1] Meyer R,[1] Wright K,[2] Truong M,[1] Siedhoff MT[2].*
[1]Cedars-Sinai Medical Center, Los Angeles, CA; [2]Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA
*Corresponding author.

Study Objective: To determine the utility of routine post-operative vaginal cuff examination for detection of vaginal cuff dehiscence (VCD) in asymptomatic women after total laparoscopic (TLH) or robotic hysterectomy (RATLH).
Design: Retrospective cohort.
Setting: N/A.
Patients or Participants: Women who underwent TLH or RATLH with a minimally invasive gynecologic surgeon over a 6-year period.
Interventions: Two patient cohorts were evaluated: 1) Patients with post-operative vaginal cuff check approximately 6 weeks post-operatively and 2) Patients who did not have a cuff check, with the majority following up entirely virtually as a result of a shift in practice during the COVID-19 pandemic.
Measurements and Main Results: A total of 703 patients were identified. 216 (30.7%) presented for in-person cuff check and 487 (69.3%) did not. Within the no cuff check group, 287 (58.9%) had all virtual follow-up. There were no statistically significant differences between groups with regard to age, race, BMI, parity, smoking status, menopausal status, and co-morbid conditions that are risk factors for VCD such as diabetes, immunosuppression, or connective tissue disease.
There was no statistically significant difference in VCD among groups. 9 patients had VCD (1.28%), 2 who had a cuff check (0.93%) and 7 who did not (1.4%, p=0.73). Median time to VCD was 70.0 [27.5-114.0] days. Both patients in the cuff check group with VCD had appropriately healing cuffs at their post-operative exam.
No VCD were identified in asymptomatic patients with routine exam. As a result of cuff check, 5 (2.3%) patients received silver nitrate, 1 (0.47%) was prescribed vaginal estrogen, and 6 (2.8%) continued pelvic rest for 2 weeks. There was no difference in points of contact for post-operative symptoms, with both groups having a median of 0 points of contact [0-1.0], (p=0.778).
Conclusion: Vaginal cuff exam does not affect or negate the risk of future VCD. Virtual follow-up for asymptomatic patients may be appropriate after hysterectomy surgery office visits.

Category: Robotics

SubCategory: Reproductive Medicine

9579 Isthmocele: Obstetric Outcomes after Robotic-Assisted Laparoscopic Repair

Seaman SJ,[1] Parra NS,[1] Laifer-Narin S,[2] Advincula A,[1] Arora C[3].*
[1]OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY; [2]Radiology, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY; [3]Department of Obstetrics and Gynecology, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY
*Corresponding author.

Study Objective: To review our institution's comprehensive data following robotic assisted laparoscopic isthmocele repair (RA-IR) inclusive of obstetric outcomes. Our primary outcome was postoperative live birth rate.
Design: Retrospective case series.
Setting: Single large tertiary medical center in the United States.
Patients or Participants: All women with an identified isthmocele who underwent RA-IR with or without hysteroscopic guidance between 9/2015 and 12/2022 were included in the study.
Interventions: All patients underwent RA-IR. Postoperatively, patients were sent a questionnaire regarding their postoperative obstetric outcomes, symptom profile, and satisfaction with the surgery.
Measurements and Main Results: Our primary outcome was postoperative live births. Secondary outcomes included fertility rate, symptom improvement, and postoperative change in myometrial depth, width, and residual myometrial thickness. Of 13 patients who attempted pregnancy, 100% were able to conceive status post repair including six of the patients with a preoperative diagnosis of primary or secondary infertility. To date, 53.84% of patients who attempted conception after repair have had live births. Two patients are currently pregnant in their second or third trimesters without complication. Postoperative MRI was complete for the majority of patients. There was a statistically significant improvement in all three measurements postoperatively (p<0.1). The greatest difference was seen in the depth of the isthmocele. The residual myometrial thickness increased by an average of 3.61mm (SD 3.59) postoperatively. Twelve patients completed a questionnaire regarding symptoms and obstetric outcomes. Postoperatively, 100% had improvement in their symptoms with 66.67% reporting complete resolution.
100% of patients who attempted pregnancy following RA-IR were able to conceive, 53.84% of whom went on to have live births (and two currently pregnant).
There was a statistically significant improvement in postoperative width, depth, and residual myometrial thickness (p<0.1).
Conclusion: RA-IR results in improved defect width and residual myometrial thickness with preservation of fertility and good obstetric outcomes with a 53.84%live birth rate.

Category: Endometriosis

SubCategory: Research

9583 Anxiety and Depression Rates between Women with and without Endometriosis

Berberian A,[*,1] *Sun J,*[1] *Yu PH,*[1] *Haro M,*[1] *Abbasi F,*[1] *Kulkarni S,*[1] *Hernandez L,*[1] *Pisarska M,*[2] *Goodman M,*[3] *Medeiros F,*[4] *Truong M,*[1] *Siedhoff MT,*[1] *Wright K,*[1] *Lawrenson K*[1]. [1]*Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA;* [2]*Division of Reproductive Endocrinology and Infertility, Cedars-Sinai Medical Center, Los Angeles, CA;* [3]*Samuel Oschin Comprehensive Cancer Center, Cedars-Sinai Medical Center, Los Angeles, CA;* [4]*Department of Pathology and Laboratory Medicine, Cedars-Sinai Medical Center, Los Angeles, CA*
*Corresponding author.

Study Objective: To determine how anxiety and depression rates differ between patients with surgically diagnosed endometriosis, those clinically suspected with it, or controls.
Design: Case-control study.
Setting: Cedars-Sinai Medical Center, a quaternary care urban hospital.
Patients or Participants: Beginning in October 2019, women aged 18-60 who were scheduled for gynecological surgery in the Division of Minimally Invasive Gynecologic Surgery at Cedars-Sinai Medical Center were recruited for participation in the Biological and Epidemiological Markers of Endometriosis (BEME) study. The first 399 patients were assessed for this abstract.
Interventions: Patients scheduled for surgery are asked to complete an adapted questionnaire following consent to participate in the research study.
Measurements and Main Results: Patient were divided into the following groups:
(A) Confirmed diagnosis of endometriosis.
(B) A clinical suspicion for endometriosis without pathology confirmation during surgery.
(C) Controls undergoing surgery.
Analysis of the first 399 patients found that groups A and B were not statistically different in their rates of anxiety (40% vs 39%, p=0.94) and depression (30% vs 27%, p=0.66) on chart review, and anxiety (52% vs 65%, p=0.20) in the questionnaire. Groups A and B both significantly differed from group C in all these measures, with rates of anxiety and depression approximately double those of group C on chart review specifically. Based on the questionnaire, group B was found to have a significantly higher prevalence of depression than either groups A or C.
Conclusion: Findings imply that women with clinical symptoms of endometriosis may benefit from similar interventions as women with surgically confirmed endometriosis and may experience depression at higher rates due to their unconfirmed status. The results support holistic care incorporating mental health care and other psychological support for women with endometriosis as well as those experiencing symptoms of endometriosis with no specific diagnosis.

Category: Robotics

SubCategory: Robotics

9588 What Have We Achieved? Learning Curve in Benign Robotic-Assisted Laparoscopic Hysterectomy

*Krantz Andersson K,** *Brunes M. Obstetrics and Gyneacology, Södersjukhuset, Stockholm, Sweden*
*Corresponding author.

Study Objective: What is the learning curve in benign robotic-assisted laparoscopic hysterectomy?
Design: This is a retrospective cohort study. When enrolled at the hospital, all included patients agreed to be a part of a local quality register. The collected data included patient demographics such as age, body mass index, parity and previous abdominal surgery. Postoperatively, the surgeons completed the data with procedure type, intraoperative complications, estimated blood loss, conversion rate to open surgery, total operation time, robotic console and docking time. In addition, postoperative information including uterus weight, total hospital stays, and complications were recorded.
Setting: N/A.
Patients or Participants: Patients who underwent a robotic-assisted laparoscopic hysterectomy in a regional hospital between 2013 and 2021 were reviewed (n=1,281). All surgeries were performed by six gynecological surgeons using the da Vinci Surgical System (Intuitive Surgical, Sunnyvale, CA, USA).
Interventions: N/A.
Measurements and Main Results: The outcomes were analyzed using linear regression, and logistic regression models. The results of the analyzes showed a significant difference in operation time after a break of 50 operations, with an operation time of approximately 100 minutes. No significant difference in blood loss was identified throughout the learning curve but there was a negative correlation between the number of performed robotic-assisted laparoscopic hysterectomies and the number of complications. This decrease continued with added experience.
Conclusion: The main finding of this study is that the learning curve to perform a robotic-assisted laparoscopic hysterectomy stabilize in a plateau after 50 cases with an operative time of approximately 100 minutes. This plateau in operational time stays steady even though the surgical team engages in more complex cases such as patients with a larger uterus and a negative association between the number of performed hysterectomies and number of complications is shown. No significant difference in blood loss during surgery throughout the learning curve was identified.

Category: Hysteroscopy

SubCategory: Other

9605 Endometrial Ablation for Abnormal Uterine Bleeding in the Setting of Severe Thrombocytopenia

*Pando C,** *Beran B, Briggs M. Medical College of Wisconsin, Milwaukee, WI*
*Corresponding author.

Study Objective: To report on the safety of endometrial ablation in patients with severe thrombocytopenia.
Design: Case Series.
Setting: Academic, tertiary-care medical center.
Patients or Participants: Patient A was a 44-year-old G3P3003 who presented with dyspnea and acute uterine bleeding. Patient was diagnosed with B-cell lymphoma and associated pancytopenia with a platlet nadir of 8 * 10^3/uL. Patient B was a 44-year-old who presented for acute uterine bleeding in setting of severe aplastic anemia. Patient B had platelet nadir of 10 * 10^3/uL. Decision was made to proceed with hysteroscopy and endometrial ablation.
Interventions: Patient A received 20 units of platelets with rise to 42 * 10^3/uL on day of surgery. She was receiving trimethoprim/sulfamethoxazole, fluconazole, and levofloxacin for neutropenia prophylaxis. No additional preoperative antibiotics given. MAC anesthesia was utilized without a paracervical block. A stitch was placed in the anterior cervix in replacement of a tenaculum. This was tied at the end to avoid leaving open puncture wounds. The cervix was hydrodilated and soft tissue morcellator was used to sample the endometrium. Bipolar radiofrequency endometrial ablation was completed. Total operative time was 28 seconds. Patient B received IVIG, methylprednisolone, and 4 units platelets with no response. Platelets on day of surgery were 11 * 10^3/uL. Neutropenic prophylaxis regiment consisted of acyclovir, levofloxacin, and voriconazole. Additional

preoperative regimen was given with cefazolin and metronidazole. Anesthesia and the procedure were performed in the same fashion with an additional sharp curettage. Total operative time was 19 minutes. Post operative doxycycline was prescribed.
Measurements and Main Results: Uterine bleeding stopped in both patients without the need for further interventions for over two years.
Conclusion: Endometrial ablation can be a safe and feasible approach to surgical management of abnormal uterine bleeding in the setting of severe thrombocytopenia, even in patients refractory to platelet transfusions. These cases demonstrate measures our team took to perform the procedures safely.

Category: Laparoscopy

SubCategory: Research

9621 The Role of Preoperative Antibiotics in Surgical Site Infection (SSI) Rate after Class I Gynecologic Surgery at a Safety Net Hospital

Khalfay N,[*,1] Holschneider C,[2] Han M[3]. [1]David Geffen School of Medicine at UCLA, Los Angeles, CA; [2]David Geffen School of Medicine at UCLA, Department of Obstetrics and Gynecology, Olive View UCLA Medical Center, Los Angeles, CA; [3]Obstetrics and Gynecology, Olive View-UCLA Medical Center, Sylmar, CA*
*Corresponding author.

Study Objective: To examine whether preoperative antibiotics administered before class I/ clean abdominal gynecologic surgery (non-hysterectomy) decreased the incidence of SSI after universal adoption at an academic hospital in 2016, as compared to a control group not routinely given antibiotics before 2016.
Design: Retrospective Cohort Study.
Setting: Academic safety net hospital.
Patients or Participants: Patients undergoing class I laparoscopic or open surgery from 2013 to 2017. This captures the transition to near universal adoption of preoperative antibiotics for these surgeries starting in 2016.
Interventions: Antibiotics (mainly cefazolin) were administered to nearly all patients undergoing surgery starting 2016.
Measurements and Main Results: 510 patients were included: 333 pre-intervention, and 177 post-intervention. 35.4% (118/333) of patients received antibiotics in the pre-intervention group compared to 93.2% (165/177) post-intervention (P=0.001). The primary outcome was incidence of SSI, defined by CDC guidelines. There was no difference in BMI or diabetes prevalence between the groups. The overall incidence of SSI decreased from 9.2% (21/227) in the group that did not receive antibiotics to 4.9% (14/283) in the group that did, but this was not statistically significant (OR 0.511, 95% CI 0.25-1.03, p= 0.06). For patients undergoing an open procedure, there was a statistically significant decrease in SSI rate from 17.4% (12/69) to 6.3% (7/112) in those receiving antibiotics (OR 0.317, 95% CI 0.12-0.85, p=0.022). This held true when adjusting for age, surgical time, EBL, ASA class, and malignancy (aOR 0.225, 95% CI 0.071-0.711, p=0.011). The incidence of SSI in laparoscopic procedures decreased from 5.6% (9/158) to 4.1% (7/171), but this was not statistically significant (aOR 0.633, 95% CI 0.219-1.835, p=0.400).
Conclusion: There is limited literature on SSI prevention and preoperative antibiotic use in class I surgeries. This study demonstrates antibiotics in clean procedures did not decrease SSI rates, mainly driven by lack of benefit in laparoscopic procedures. However, antibiotics in open procedures did show a lower rate of SSI.

Category: Fibroids

SubCategory: Laparoscopy

9625 Laparoscopic Retrograde Hysterectomy for a Large Broad Ligament Fibroid

Sakate S, Ochi Y, Andou M. Kurashiki Medical Center, Kurashiki, Japan*
*Corresponding author.

Study Objective: To demonstrate a retrograde approach of laparoscopic hysterectomy for a patient with a large broad ligament fibroid.
Design: N/A.
Setting: Gynecology and Obstetrics department of a general hospital.
Patients or Participants: 56-years-old G1P0 female with chronic inflammatory demyelinating polyneuropathy presented with stomach bloating of one year's duration. A thoracoabdominal computed tomography scan was performed to rule out malignancy. A large uterine tumor was detected and MRI showed a 14-centimeter uterine tumor and cellular leiomyoma was suspected.
Interventions: A total laparoscopic hysterectomy and bilateral salpingo-oophorectomy was performed and the 14cm fibroid was found to be in the right retroperitoneal space. Uterine manipulation and devascularization around the fibroid were extremely difficult, therefore the right parametrium was dissected in a retrograde fashion after the left parametrium dissection and colpotomy. The patient had an uncomplicated postoperative course and leiomyoma of uterus was diagnosed.
Measurements and Main Results: N/A.
Conclusion: In cases of a large broad ligament or cervical fibroid, factors impacting the ease of surgery include limited access to vascular pedicles and decreased uterine maneuverability. These issues can lead to increased risks of hemorrhage and injury to bowel or urinary tract. The retrograde approach, in which the parametrium and ureter of the affected side are dissected after improvement of uterine maneuverability, is a safe and feasible procedure for laparoscopic hysterectomy in patients with a large broad ligament fibroid.

Category: Laparoscopy

SubCategory: Tissue Containment & Extraction Technologies

9640 Dermoid Cystectomy: Techniques and Strategies for Success

Moran K,[*,1] Hamilton KM[2]. [1]Cedars-Sinai Medical Center, Los Angeles, CA; [2]Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA*
*Corresponding author.

Study Objective: The objective of this video is to review techniques for optimal dermoid cystectomy that reduce the risk of rupture and help preserve ovarian reserve.
Design: Video presentation of surgical techniques.
Setting: Cedars-Sinai Medical Center operating room.
Patients or Participants: This video includes multiple patient examples of surgical steps performed to complete a dermoid cystectomy.
Interventions: We review suggestions for port placement and type, as well as hemostasis options to optimize surgical field visualization and maintain ovarian reserve. Then in detail, recommendations for initial incision location are shown as well as stepwise strategies for removing the cyst intact. Finally, suture repair of the ovary for hemostasis and ovarian closure is reviewed.
Measurements and Main Results: Dermoid cystectomies performed in this video were successfully completed without complication. This video can serve as a resource for successful completion of a dermoid cystectomy.

Conclusion: Laparoscopic cystectomy, especially for larger dermoids, has a higher risk of cyst rupture compared to laparotomy. If this occurs operative times increase in order to account for the adequate removal of cyst contents from the abdomen. In this video we highlight techniques to reduce that unintended complication.

Category: Endometriosis

SubCategory: Basic Science/Education

9643 Utility of an Endometriosis Education Session for Non-Gynecologists

Briggs M, Pando C, Beran B. Medical College of Wisconsin, Milwaukee, WI*
*Corresponding author.

Study Objective: Individuals with endometriosis experience symptoms for an average of 10 years prior to diagnosis. Diagnostic delays are cited as large barriers to timely and effective care and could be related to the fact that 67% of non-gynecologic healthcare professionals do not feel comfortable diagnosing endometriosis, and 50% do not recognize effective treatment. To overcome these barriers, this study aimed to provide an updated overview of endometriosis etiology, diagnosis, evaluation, and management to specialties outside of Gynecology.
Design: Mixed-methods survey-based educational study.
Setting: An academic, tertiary-care, healthcare institution.
Patients or Participants: Non-gynecologic attending physicians, resident physicians, fellow physicians, and advanced practice providers (APP) at an urban, academic healthcare institution participated in the study.
Interventions: Between March 2022 and March 2023, 60 minute, live-in-person and live-virtual lectures were given to varying departments including general surgery, gastroenterology, internal medicine, family medicine, pediatrics, adolescent medicine, emergency medicine, urology, and pain medicine. Sessions covered some uniform background but ultimately were tailored to each specialty. Participants voluntarily completed an electronic survey through Qualtrics upon completion of the session to investigate the utility of the education session.
Measurements and Main Results: 22 attending physicians, 15 residents, 4 fellows, and 17 APPs completed the post-education-session survey. Most participants (n=54, 86%) strongly agreed that the session provided updated information on the etiology and pathogenesis, diagnosis and evaluation, and management of endometriosis. Participants also strongly agreed that the session equipped them to manage (n=36, 62%) and refer (n=46, 74%) patients with or with suspected endometriosis. When asked about what participants could implement from the session to their practice, many participants' responses focused on referrals (n=10, 37%) and diagnosis (n=14, 51%).
Conclusion: This study demonstrates the utility of an education session in improving individuals' knowledge regarding caring for individuals with endometriosis. Qualitative data demonstrates respondents' plans to focus on diagnosis and referrals related to endometriosis. These plans could improve endometriosis diagnostic delays.

Category: Endometriosis

SubCategory: Research

9655 Room for Improvement: OB/GYN Residents' Training and Comfort with Endometriosis

Sullender R, Jacobs MB, Sandhu MS, Lacoursiere DY, Luevano CD, Pickett C, Agarwal SK. University of California at San Diego, La Jolla, CA*
*Corresponding author.

Study Objective: To investigate the comfort level and familiarity with endometriosis diagnosis and management among OB/GYN residents.
Design: Online cross-sectional survey of OB/GYN residents from January-February 2023. Program directors and coordinators of 20 OB/GYN residency programs in California were emailed to disseminate the survey to their residents.
Setting: Online.
Patients or Participants: 70 residents began the survey; of those, 3 only answered demographic questions and were excluded. 67 answered at least one non-demographic question and were included. A resident response rate was not calculated because we were unable to determine how many programs distributed the survey.
Interventions: Survey regarding educational experiences, comfort with diagnosis and treatment, and overall confidence level with management after graduation.
Measurements and Main Results: 84% of residents felt they could recognize symptoms of endometriosis but only 48% could reliably diagnose an endometrioma on ultrasound. Residents in academic programs were statistically more likely than community-based residents to have exposure to attendings prescribing GnRH antagonists and agonists, androgens, and long-acting reversible contraception (LARC). However, there were no differences in resident practices. Only approximately a third of residents felt comfortable managing hypoestrogenic symptoms, osteoporotic risks, and add-back progestin for certain hormonal therapies. The most commonly seen surgical technique was removal of endometriomas (83%). More respondents would feel comfortable medically managing endometriosis (52%) than surgically managing the disease (26%) if they were in practice today, with only 40% of PGY3-4 residents feeling comfortable surgically managing endometriosis.
Conclusion: There is considerable room for improvement in the education of residents in the diagnosis and medical and surgical management of endometriosis. Residents indicated they want both more formal teaching and hands-on experiences to learn about endometriosis management.

Category: Endometriosis

SubCategory: Laparoscopy

9660 Risk Factors for Major Complications Following Minimally Invasive Surgeries for Endometriosis in the United States

Hamilton KM,[1] Fan S,[1] Brezinov Y,[2] Levin G,[2] Schneyer R,[1] Truong M,[1] Meyer R,[1] Wright K[1]. [1]Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA; [2]Lady Davis Institute for Cancer Research, Jewish General Hospital, McGill University, Montreal, Canada*
*Corresponding author.

Study Objective: To study the rate and risk factors for short-term post-operative complications of patients undergoing minimally invasive surgery for endometriosis in the United States.
Design: Retrospective cohort study.
Setting: American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database from 2012-2020.
Patients or Participants: Patients with endometriosis diagnosis.
Interventions: Laparoscopic surgery for endometriosis.
Measurements and Main Results: We compared women with and without 30-day post-operative major complications, defined according to the Clavien-Dindo classification.
28,697 women underwent minimally invasive surgery during the study period, of which 2.6% had major post-operative complications. Organ space surgical site infection and reoperation were the most common complications (47.0% and 39.8%, respectively).
In multivariable regression analysis, African American race [aOR 95%CI 1.61 (1.29-2.01), p<0.001], hypertension [aOR 95%CI 1.23 (1.02-1.50), p=0.035], bleeding disorders [aOR 95%CI 1.96 (1.03-3.73), p=0.042], bowel procedures [aOR 95%CI 2.03 (1.61-2.56), p<0.001] and hysterectomy [aOR 95%CI 2.12 (1.74-2.57), p<0.001] were independently associated with increased risk of major complications.

In a subanalysis of laparoscopies without bowel procedures, the rate of major complications was 2.5%. In multivariable regression analysis, African American race [aOR 95% CI 1.57 (1.22-2.01), p<0.001], bleeding disorders [aOR 95% CI 2.06 (1.05-4.08), p=0.037] and hysterectomy [aOR 95% CI 1.95 2.76 (2.16-3.53), p<0.001] were associated with increased major complication risk.

Bowel procedures were performed in 2,041 cases, with a major complication rate of 4.3%. In multivariable regression analysis, African American race [aOR 95%CI 1.76 (1.02-3.06), p=0.043], immunosuppressive therapy [aOR 95%CI 3.04 (1.15-8.00), p=0.025] and colectomy [aOR 95%CI 1.96 (1.26-3.06), p=0.003] were associated with increased major complication risk.

Conclusion: Among women undergoing minimally invasive surgery for endometriosis, African American race, hypertension, bleeding disorders and bowel surgery or hysterectomy are risk factors for major complications. African American race is a risk factor for major complications among women undergoing surgeries with and without bowel procedures.

Category: New Instrumentation or Technology

SubCategory: Other

9661 Pre-Surgery Virtual Versus Office Visits: An Analysis of Patient Outcomes in a Minimally Invasive Gynecologic Surgery Practice

Meyer R,[*,1] Niino C,[2] Hamilton KM,[1] Siedhoff MT,[1] Wright K,[1] Truong M*[1]. [1]*Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA;* [2]*Cedars-Sinai Medical Center, Los Angeles, CA*

*Corresponding author.

Study Objective: To determine surgical outcomes for virtual compared to office pre-surgery visits.

Design: Retrospective cohort.

Setting: Minimally Invasive Gynecologic Surgery Practice.

Patients or Participants: Patients who had a pre-surgery virtual or office visit and subsequent surgery between 10/2019 and 12/2022. We excluded patients with both virtual and office pre-surgery visits.

Interventions: We collected patient demographics, surgery type, number of pre- and post-surgery visits and phone calls, post-surgery emergency room visits and admissions, reoperations, and costs. Virtual and office visits were compared.

Measurements and Main Results: 976 patients (77.6%) had virtual visits, and 338 patients (22.4%) had office visits. Patients who had virtual visits were younger (mean 39.2 vs. 42.4 years, p<0.001). Other baseline characteristics were similar in both groups.

The mean number of pre-surgery visits was lower in the virtual visits group (2.8 vs. 3.1, p=0.009). The proportion of laparoscopic surgeries was similar in both groups. Compared to the office visits groups, women with virtual visits had fewer hysterectomies (28.5% vs. 35.5%, p=0.024), and more endometriosis excisions (54.4% vs 39.7%, p<0.001).

Surgery length was shorter in the virtual visit group (mean 119.7 vs. 136.9 minutes, p=0.001). However, total hospital admission time did not differ between groups.

Post-surgery, the number of emergency department visits, admissions or reoperations was similar in both groups. These results remained unchanged in sub-analyses by surgery types: hysterectomy, endometriosis excision or myomectomy.

The mean number of post-surgery visits was higher in the virtual visits group (0.9 vs. 0.8, p=0.013).

Total costs were lower in the pre-surgery virtual visit group (111246.2 vs. 121975.9 USD, p=0.004). However, in multivariable regression analysis, pre-surgery visit type was not independently associated with total costs [aOR 1.00 (0.60-1.68), p=0.988].

Conclusion: Pre-surgery virtual and office visits result in similar surgical outcomes. Virtual pre-surgical visits can be considered an alternative to pre-surgery office visits.

Category: Laparoscopy

SubCategory: Reproductive Medicine

9663 Approach to Laparoscopic Excision of Non-Communicating Uterine Horns When Uterine Manipulation Is Not Feasible

Morrical E, Hollis A, Dizon A. University of Tennessee College of Medicine - Chattanooga, Chattanooga, TN*

*Corresponding author.

Study Objective: The goal of this case is to explore surgical techniques in the approach to laparoscopic excision of pelvic GYN organs when uterine manipulation is not feasible due to differentiation of anatomy. It aims to understand how to better manipulate tissue in cases of difficult GYN surgery.

Design: This was a routine laparoscopic surgery without intraoperative complications and with normal 4-week postoperative follow-up.

Setting: The patient was placed in low lithotomy position in Allen stirrups, taking care not to hyperflex or hyperextend the hips or the knees. Arms were tucked at her sides and her hands and elbows were padded and the chest was securely strapped with foam.

Patients or Participants: The patient was selected for this video case presentation based off her medical history significant for suspected Mullerian duct anomaly with suspected remnant and the desire for definitive surgical management.

Interventions: The procedure entailed a total laparoscopic hysterectomy with removal of two separate cervices and uteri, bilateral salpingectomy, intraperitoneal colpopexy for apical suspension and cystoscopy. Multiple different delineating devices were used during dissection to better appreciate surgical planes and allow for safer surgery.

Measurements and Main Results: The main result of this case was successful surgical removal of Mullerian duct remnants and alleviation of patient's pelvic pain. During her postoperative follow-up, she denies further pelvic pain and was overall pleased with her decision for definitive surgical management.

Conclusion: Certain Mullerian anomalies present a difficult surgical scenario when patients desire surgical management of their clinical symptoms. In this case, safe laparoscopic surgery was performed with multiple surgical delineating devices when uterine manipulation was not feasible.

Category: Natural Orifice Surgery

SubCategory: Obese Patients

9683 vNOTES Surgery in Morbidly and Super-Morbidly Obese Women: Five Year Experience of 103 Procedures

Burnett AF,[*,1] Pitman TC,[2] Baekelandt JF[3]. [1]*Obstetrics and Gynecology, University of Arkansas for Medical Sciences, Little Rock, AR;* [2]*Obstetrics and Gynecology, Baptist Memorial Hospital, Memphis, TN;* [3]*Gynecologic Oncology, Imelda Hospital, Bonheiden, Belgium*

*Corresponding author.

Study Objective: To analyze our experience with vNOTES gynecologic procedures in women with morbid and super morbid obesity.

Design: Retrospective review.

Setting: Two teaching hospitals, one community hospital.

Patients or Participants: Gynecologic procedures performed by three surgeons on women with a body mass index (BMI) ≥ 40 kg/m^2 from 2017 to 2023. A subset of women with a BMI ≥ 50 kg/m^2 were also analyzed.
Interventions: vNOTES procedures including hysterectomy, adnexectomy, and lymphadenectomy.
Measurements and Main Results: 103 women with a BMI ≥ 40kg/m^2 were identified, 19 of whom had a BMI ≥ 50 kg/m^2. Preoperative characteristics, procedures performed, operative characteristics, conversions to laparoscopy or laparotomy, and postoperative characteristics were reviewed. For the entire population the mean BMI was 45.7 kg/m2 (40-62). 29 women were nulliparous and 23 had at least one prior cesarean delivery. 51 had no prior abdominal surgery. The procedures performed were hysterectomy and removal of adnexae in 77 patients, hysterectomy alone in six, adnexal surgery alone in nine, and hysterectomy with adnexectomy and lymph nodes in five. Three surgeries were converted to laparoscopy and three to laparotomy. Average surgical time was 87 minutes (30-232). Average blood loss was 82 mL (10-400). Mean uterine weight was 206 g (29-2890). 53 procedures were performed as outpatient, 44 had overnight observation, four had a length of stay of two days, one each for four days and five days. The laparoscopies occurred in two patients with an obliterated cul-de-sac and in one patient for lymph node removal. The laparotomies occurred for adnexal adhesions in one, bleeding in one, and cystotomy in one requiring urology consultation. One patient developed a postoperative vaginal cuff hematoma not requiring intervention.
Conclusion: vNOTES gynecologic procedures are feasible in this high-risk population and may result in shorter recovery times and fewer complications than with standard laparoscopy or laparotomy.

Category: Laparoscopy

SubCategory: Fibroids

9684 Feasibility and Outcomes of Minimally Invasive Surgery for Higher Order Myomectomy

Leaf MC,[1] Lombardo A,[2] Wainger JJ,[3] Borahay M,[1] Frost A,[1] Patzkowsky K,[1] Wang KC,[1] Wu H,[1] Simpson K[1]. [1]Gynecology and Obstetrics, Division of Minimally Invasive Gynecologic Surgery, Johns Hopkins Hospital, Baltimore, MD; [2]Johns Hopkins School of Medicine, Baltimore, MD; [3]Gynecology and Obstetrics, Johns Hopkins Hospital, Baltimore, MD
*Corresponding author.

Study Objective: To investigate outcomes of minimally invasive surgery for higher order myomectomy as defined by removal of ten or more fibroids.
Design: A retrospective cohort study between January 2018 and December 2022.
Setting: A tertiary academic medical center.
Patients or Participants: Women who underwent minimally invasive myomectomy via laparoscopic or robotic approach.
Interventions: Surgical intervention in the form of minimally invasive myomectomy.
Measurements and Main Results: A total of 735 women met inclusion criteria. 578 of them had fewer than ten fibroids removed while 157 patients had ten or more fibroids removed (average number of fibroids removed 3.8 vs 14.7, p < 0.001; specimen's weight 317.4 g vs 371.0 g, p = 0.07). BMI was similar in both groups (p = 0.66) and patients with higher order myomectomy were more likely to have a history of prior myomectomy (12.0% vs 26.8%, p < 0.001).
The average estimated blood loss (EBL) was 246 mL vs 470 mL in each cohort (p < 0.001). There were no differences in packed red blood cell transfusion (1.0% vs 0.6%, p = 0.65), conversion to laparotomy rate (0.5% vs 0.6%, p = 0.86), or complication rates including visceral injury, wound complication, venous thromboembolism, ileus, or readmission (5.9% vs 4.5%, p = 0.49). The hospital length of stay was similar in both groups (0.5 days vs 0.5 days, p = 0.63).
On linear regression analysis, after adjusting for specimen's weight, operative time, and history of prior myomectomy, EBL remained significantly higher in patients with ten or more fibroids removed (p = 0.02).
Conclusion: EBL is increased in higher order myomectomy, however blood transfusions, conversion to laparotomy, complication rates, and length of hospital stay did not differ compared with patients with fewer than ten fibroids removed, highlighting the safety and feasibility of minimally invasive higher order myomectomy.

Category: Obese Patients

SubCategory: Laparoscopy

9697 BMI Classification, Post-Operative Pain, and Admission after Minimally Invasive Hysterectomy

Bird LM,[1] Nestlerode C,[1] Smick A,[1] Kiyani K,[2] Patel NR,[3] Crisp C[4]. [1]Obstetrics & Gynecology, TriHealth, Cincinnati, OH; [2]Hatton Research Institute, TriHealth, Cincinnati, OH; [3]Obstetrics & Gynecology, Minimally Invasive Gynecology, TriHealth/Good Samaritan & Bethesda North Hospitals, Cincinnati, OH; [4]Obstetrics & Gynecology, Urogynecology, TriHealth, Cincinnati, OH
*Corresponding author.

Study Objective: To compare post-op pain scores, morphine milligram equivalents (MME) administered, and length of admission for patients in different body mass index (BMI) classes after minimally invasive hysterectomy in order to evaluate for correlations.
Design: Retrospective chart review from 1/1/15 - 1/1/22.
Setting: Single multi-hospital healthcare system of five community hospitals, two teaching and three non-teaching.
Patients or Participants: 4601 patients with age ≥ 18 whom underwent minimally invasive hysterectomy for benign indications.
Interventions: None.
Measurements and Main Results: Comparison was made of BMI classes stratified by Center for Disease Control and Prevention (CDC) classification with statistical analysis via the Kruskal-Wallis rank sum test. Surgery duration increased as BMI increased with surgical duration median of 111, 125, 125, 127, 131, and 136 minutes for BMI groups <18.5, 18.5 – 24.9, 25 – 29.9, 30 – 34.9, 35 – 39.9, and >40 respectively (p<0.001). Length of time in the Post Anesthesia Care Unit (PACU) increased with medians of 75, 98, 99, 99, 104, and 113 minutes respectively (p<0.001). Overall length of admission remained similar across classes at median of 10, 11, 11, 11, 10, and 11 hours (p=0.2) with similar times across classes in both the 1st and 3rd quartiles. Average pain scores ranged from 3.94 - 4.60 across classes (p=0.022). Median pain scores ranged from 4.00 - 5.00 across classes (p=0.042). Average MME consumed by different BMI classes ranged from 9.33 - 10.00 MME (p<0.001) with median range of 9.4 - 10.0 MME (p<0.001).
Conclusion: BMI class was found to not be associated with increased length of admission after minimally invasive hysterectomy. While differences in PACU pain scores and opioids consumed in the 6-hours post-op window were statistically significant, they are unlikely to hold any clinical difference.

Category: Laparoscopy

SubCategory: New Instrumentation or Technology

9711 Laparoscopic Ovarian Cystectomy Simulation for Resident Training

Jiang MY,[1] Fatehchehr S[2]. [1]Department of Obstetrics & Gynecology, UCLA- Kern Medical, Bakersfield, CA; [2]Division of Female Pelvic Medicine and Reconstructive Surgery (Urogynecology), Department of Obstetrics & Gynecology, UCLA- Kern Medical, Bakersfield, CA
*Corresponding author.

Study Objective: The objective is to present an easily reproducible and low-cost simulation model of laparoscopic ovarian cystectomy. The model allows Obstetrics and Gynecology (OBGYN) residents to practice laparoscopic surgical skills, specifically focusing on tissue handling with the goal of not rupturing the cyst during dissection.
Design: Resident education simulation.
Setting: Simulation center.
Patients or Participants: OBGYN Resident physicians.
Interventions: Utilizing the laparoscopic box trainer with a cyst model and an electrocautery imitation for simulation of laparoscopic ovarian cystectomy.
Measurements and Main Results: Ovarian torsion is one of the most common reasons patients present to the emergency room and are subsequently taken to the operating room. It is important for OBGYN residents to be proficient in laparoscopic ovarian cystectomy. This video presents a simulation of laparoscopic ovarian cystectomy in order to help residents practice surgical skills, specifically focusing on tissue handling with the goal of avoiding cyst rupture during dissection. All materials used are easily obtainable and affordable, and the model can be reproduced in less than 5 minutes. The video illustrates the steps of creating and setting up the simulation model in the laparoscopic box trainer. It also incorporates examples of successful and unsuccessful attempts at dissection.
Conclusion: OBGYN residents may practice cyst dissection skills with the laparoscopic ovarian cystectomy simulation model in the laparoscopic box trainer.

Category: Reproductive Medicine

SubCategory: Natural Orifice Surgery

9712 Natural Orifice Transluminal Endoscopic Surgery for Bilateral Tubal Anastomosis

Min L. Gynaecology, Sichuan University West China Second Hospital/ Ziyang Maternal and Child Health Hospital in Sichuan Province, ChengDu/ZiYang, Sichuan, China*
*Corresponding author.

Study Objective: V-NOTES for bilateral tubal anastomosis
Design: This is a woman who had bilateral tubal ligation 10 years ago but currently has natural fertility needs. She is a dancer, so she doesn't want obvious scars on her abdomen.
Setting: N/A.
Patients or Participants: A 39-year-old woman who underwent bilateral tubal ligation surgery 10 years ago but currently has a natural reproductive need.
Interventions: N/A.
Measurements and Main Results: The surgical process was smooth with minimal intraoperative bleeding. The bilateral fallopian tube recanalization successful. The patient recovered quickly after surgery, and the wound healed well without any scars on her abdomen.
Conclusion: Natural orifice transluminal endoscopic surgery technology in bilateral fallopian tube anastomosis surgery is convenient, has good fallopian tube recanalization effect, and is non-invasive.

Category: Endometriosis

SubCategory: Research

9729 International Patient Experiences of Endometriosis Diagnosis

Requadt E,[*,1] Ross W*[*,2]. [1]Washington University in St. Louis, St Louis, MO; [2]Washington University of St. Louis, St. Louis, MO*
*Corresponding author.

Study Objective: To evaluate the experiences of endometriosis diagnosis among women with endometriosis from around the world.
Design: Cross-sectional mixed-methods study design.
Setting: The electronic questionnaire was distributed to English-speaking, patient-led endometriosis support groups.
Patients or Participants: Members of three large online support groups for people with endometriosis: "r/Endo" and "r/Endometriosis" hosted on Reddit and Nancy's Nook hosted on Facebook. Eligibility criteria included age 18 years of age or older, a proficiency in written and spoken English, and a self-reported history of endometriosis diagnosed by a healthcare provider.
Interventions: None.
Measurements and Main Results: Between February 2021 and June 2022, 1,565 women with endometriosis from 63 countries on 6 continents completed a survey composed of quantitative and qualitative questions. Questions included demographic characteristics, experiences with the endometriosis diagnostic process, and experiences with healthcare providers. Broken down by continent, participants reported length of time from symptom onset to endometriosis diagnosis ranging from 7.6-11.6 years, with a global average of 9.7 years (Figure 1, LINK). Women from Europe (77%), North America (76%), and South America (73%) pervasively reported experiencing dismissal from their physicians, while dismissal was less commonly described by participants from Asia (53%) and Africa (59%). When asked about sexism in healthcare, European (53%), North American (52%), and Oceanic (49%) participants reported experiencing sexism from their physicians, but this was less commonly reported by African (35%) and Asian (19%) participants.
Conclusion: Globally, women experience a considerable delay in being diagnosed with endometriosis. Women from around the world together engage with online support groups but report varying experiences with physicians depending on their geographical location.

Category: Laparoscopy

SubCategory: Other

9735 Blue Dye Technique in Laparoscopic Ovarian Cystectomy

Dziadek O, Jalloul R. Obstetrics, Gynecology and Reproductive Sciences, UTHealth Houston, Houston, TX*
*Corresponding author.

Study Objective: To demonstrate the benefits of using blue dye in large ovarian cystectomy.
Design: Case presentation.
Setting: Operating room.
Patients or Participants: 33-year-old G1P1 presented with large right ovarian cyst. She presented with nausea, vomiting and sharp abdominal pain. Ultrasound showed a 15 cm right ovarian cyst with right hydrosalpinx. Tumor markers were normal (CA-125, CEA, CA 19-9).
Interventions: Laparoscopic right ovarian cystectomy.
Measurements and Main Results: The case was completed without complications. Ovarian tissue is preserved after ovarian cystectomy using the blue dye technique.
Conclusion: The use of the blue dye technique promotes preservation of ovarian tissue during large ovarian cystectomy, providing a clear plane between ovarian cortex and cyst wall.

Category: Laparoscopy

SubCategory: Other

9736 The Effect of TAP Block Timing on Milliequivalents of Opioid Use and Time to Discharge in Minimally Invasive Hysterectomy Patients

Gould C,[*,1] Chang-Patel EJ,[1] Wong J,[2] Demirel S*[1]. [1]*Legacy Health, Portland, OR;* [2]*Oregon Health Sciences University, Portland, OR*
*Corresponding author.

Study Objective: To examine the effect of transverse abdominus plane (TAP) block timing (preoperative or postoperative) on postoperative opioid use (morphine milligram equivalents (MME)), pain scores, and time to discharge in patients undergoing minimally invasive hysterectomy for benign indications.
Design: Retrospective, single-institution cohort study.
Setting: Academic-affiliated community hospital.
Patients or Participants: 2982 patients who underwent minimally invasive total hysterectomy between January 2018 through December 2022. Patients were separated into three groups. 1) No TAP: 1966 patients (65.9%), 2) Preoperative TAP: 854 (28.6%) and 3) Postoperative TAP: 162 patients (5.4%).
Interventions: Summary statistics and mixed-effects regression methods were used to analyze the data.
Measurements and Main Results: Comparing patients who received a TAP (either pre or postoperatively) to those who did not, there was a statistically significant lower usage of mean MME of opioids (43.2 vs 53.9, p=0.002). However, when comparing preoperative vs postoperative TAP block patients, there was no statistically significant difference in mean MME used (43.4 vs 42.1, p=0.752).
There were no differences in postoperative pain scores when comparing the same pairings, noting that more MME were required in patients who did not receive a TAP to achieve the same pain scores as patients who received a TAP.
Looking at time between procedure end to discharge home in hours, there was a statistically significant shorter time to discharge in TAP versus no TAP patients (10.28 vs 12.55, p<0.001) as well as preop versus postop TAP patients (9.88 vs 12.4, p=0.003).
Conclusion: Our study is the first of our knowledge to assess if the timing of the TAP block, whether it be preoperatively or postoperatively, has an effect on postoperative MME, pain scores, or time to discharge. Based on our data, the timing of the TAP block did not significantly affect postoperative milliequivalents of morphine use or pain scores, however a preoperative TAP was associated with a significantly shorter time to discharge.

Category: Hysteroscopy

SubCategory: Other

9744 Hysteroscopic Management of Caesarean Scar Pregnancy

Bhat VV,[*,1] Debnath S[2]. [1]*Hystero-laparoscopic Surgery Unit, Radhakrishna Multispecialty Hospital and IVF Centre, Bangalore, Karnataka, India;* [2]*Fellow in Department of Hystero-laparoscopy Unit, Radhakrishna Multispecialty Hospital and IVF Centre, Bengaluru, Karnataka, India*
*Corresponding author.

Study Objective: Caesarean scar pregnancy (CSP) is a rare type of ectopic pregnancy, which is defined as the embryo implanting in a previous lower segment caesarean section. With the incidence of CSP rising, the reports of serious adverse outcomes have increased gradually. Our objective is to present our experience with hysteroscopic removal of CSP.
Design: Observational Study.
Setting: A tertiary care hospital in India.
Patients or Participants: As per diagnostic criteria, the patient had a gestational sac with or without fetal pole in the anterior part of the uterine isthmus; an empty uterine cavity without contacts with the sac; a clearly visible empty cervical canal; and absence of, or a defect in, the myometrial tissue between the bladder and the sac. The myometrial thickness was 3 to 5 mm. A total of 18 patients were enrolled.
Interventions: Resection of CSP was done under general anaesthesia, using a resectoscope with monopolar current.
Measurements and Main Results: Out of 18 CSP cases 8 had been operated by using hysteroscope. All 8 cases of ectopic gestations were removed entirely by resectoscope. Out of those 8 patients, 1 had bleeding post operatively, controlled by inserting foley's bulb inflated with 30 ml of water. Rest of the cases were managed by laparoscopy.
Conclusion: Operative hysteroscopy might be recommended as a first-line treatment modality for patients with a CSP, especially when myometrial thickness between bladder and gestational sac is 3 to 5 mm. If every CSP patient is treated with laparoscopy, it could increase the morbidity. This raises the issue of when to choose hysteroscopic surgery only and when to add laparoscopy.

Category: Fibroids

SubCategory: Laparoscopy

9753 Examining the Impact of Minimally Invasive Gynecologic Surgery Clinic Implementation in an Urban Safety-Net Clinic

Cantave M, Fuentes V, Okuagu C, Scholl K, Bardawil E, de Souza K, Biest S, Ross W. Washington University of St. Louis, St. Louis, MO*
*Corresponding author.

Study Objective: To explore the impact of implementing a Minimally Invasive Gynecologic Surgery (MIGS) clinic on fibroid surgery route and type, and peri-operative outcomes.
Design: Retrospective before-after study design comparing pre-MIGS clinic implementation (2019) to the year after it was fully operational (2021).
Setting: Urban OB/GYN safety-net clinic serving a largely under-insured patient population with many socioeconomic barriers to care.
Patients or Participants: Patients age 18 to 55 who underwent benign surgery for fibroids. As implementing a new sub-specialty service likely changed regional referral patterns, we included only patients receiving general OB/GYN care within the safety net clinic who subsequently had fibroid surgery.
Interventions: Surgery for fibroids via minimally invasive (laparoscopic, robotic, or vaginal) or abdominal approach.
Measurements and Main Results: Seventy-four patients met inclusion criteria (22 in 2019 and 52 in 2021). Patients were predominantly non-Hispanic Black (86.4% in 2019 and 78.9% in 2021). Mean age was 44.7 and 42.5 years, respectively. Rate of laparoscopic hysterectomy increased from 40.9% (9/22) to 69.2% (36/52) (p 0.036). Rate of abdominal hysterectomy decreased from 54.6% (12/22) to 23.1% (12/52). Uterine weight increased from a mean of 562.2gm to 783.2gm (p 0.629) and mean estimated blood loss decreased from 415mL to 237mL (p 0.300), while not statistically significant both are likely clinically meaningful. There was a

decrease in composite complications from 41% to 9.6% (p 0.002), with the greatest decrease in complication rates seen in blood loss >1500mL and surgical site infection. One patient required readmission and re-operation in each time frame.

Conclusion: After implementing the MIGS clinic, laparoscopic approach increased despite larger specimen weight, and composite complication rates decreased, likely due to decreased rate of abdominal hysterectomy. This exploratory study shows implementation of a safety net MIGS clinic as a promising intervention to improve equity and decrease health disparities in fibroid surgical care.

Category: Laparoscopy

SubCategory: Endometriosis

9755 Intraoperative Cervical Amputation with Successful Re-Anastomosis and Subsequent Term Pregnancy

Pando C,[*,1] Beran B,[1] Bomtempo C,[2] Briggs M*[1]. [1]*Medical College of Wisconsin, Milwaukee, WI;* [2]*Medical College of Wisconsin, Wauwatosa, WI*
*Corresponding author.

Study Objective: To report a case of iatrogenic cervical amputation with successful laparoscopic re-anastomosis, describe post operative course, and subsequent pregnancy.

Design: Case Report with multi-year follow-up.

Setting: Academic, tertiary-care medical center.

Patients or Participants: 30-year-old female who underwent fertility sparing laparoscopic excision of endometriosis. Physical exam was significant for fibrotic nodule involving the rectovaginal septum. Uterine manipulator was not used out of concern for loss of pneumoperitoneum during anticipated colpotomy. Surgery complicated by complete cervical amputation, identified by entry into anterior cul-de-sac from posterior dissection.

Interventions: Primary cervico-uterine anastomosis was performed. A metal uterine sound was passed through the cervix into the fundus to ensure alignment. Unidirectional barbed suture was used in a running fashion to repair the anterior laceration, and then the posterior laceration with two separate sutures. Pediatric foley catheter was placed intrauterine in an attempt to maintain postoperative cervical patency.

Measurements and Main Results: Patient resumed spontaneous menses 2 months post-operatively, demonstrating patent cervical canal. Patient did not come to clinic for desired hysteroscopic evaluation of repair. Patient spontaneously conceived 22 months after surgery. Early ultrasound confirmed location and placentation in relation to the surgical site out of concern for ectopic and risk for incisional pregnancy. We could not find any cases or data regarding management of pregnancies following cervical re-anastomosis so a multidisciplinary team came together to recommend the following guidelines: cervical lengths up to 24 weeks to monitor for cervical insufficiency and 37 0/7 week primary cesarean delivery for concern of uterine dehiscence or rupture. Patient had a term pregnancy complicated by severe fetal growth restriction. At the time of delivery lower uterine segment was extremely thin and transparent.

Conclusion: We demonstrated a successful surgical management of an inadvertent complete cervical amputation followed by viable, term pregnancy. This case demonstrates pregnancy can be safe and successful following iatrogenic intraoperative complete cervical amputation.

Category: Basic Science/Education

SubCategory: Research

9756 Excess Use of Surgical Supplies in Minimally Invasive Benign Gynecology Surgery: An Observational Study

Mohr-Sasson A,[*,1] Aycock M,[2] Higgason N,[2] Hui M,[1] Bhalwal A,[1] Jalloul R,[1] Leon MG,[1] Dziadek O,[1] Montealegre A*[1]. [1]*Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX;* [2]*Department of Obstetrics, Gynecology & Reproductive Science, The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: Single use materials and equipment are regularly opened by the surgical team during procedures but left unused, potentially resulting in superfluous costs and excess environmental waste. The aim of this study is to estimate the excess use of surgical supplies in minimally invasive benign gynecological surgeries.

Design: Prospective observational study.

Setting: Single tertiary medical center.

Patients or Participants: Surgical teams were observed while performing surgeries for benign indications.

Interventions: Designated study personnel were assigned to observe surgical procedures performed July-September 2022. Surgical teams were not informed of the purpose of the observation to avoid potential bias. Disposable materials and equipment opened and used during the procedure were documented. Excess supplies were defined as those opened but left unused before being discarded. Costs per item of excess supplies were estimated based on material and equipment costs provided by the hospital.

Measurements and Main Results: 99 surgeries were observed, including laparoscopic (32%), robotic (39%), hysteroscopic (14%), vaginal (11%) and laparotomy procedures (3%). Excess use of surgical supplies was documented in all but one procedure. Raytecs were the most frequently item used in excess, with a total of n=583 opened but unused (average n=5.95 per surgery). They contributed 44.19% of the total cost of excess surgical supplies that reached $19,788 across all surgeries. The most expensive excess item was the Airseal Gas tube™ (Conmed Corp, $77.25 per unit), which was used in excess in n=5 procedures. No significant differences were found in the number of excess supplies across the surgical approaches.

Conclusion: Excess use of disposable materials and equipment is common in minimally invasive benign gynecological surgeries and contributes surgical cost. It is predominantly attributed to opening of inexpensive materials that are left unused during the procedure. Increased awareness of costs and generated waste may reduce excess use of surgical supplies and will be explored in future research.

Category: Research

SubCategory: Reproductive Medicine

9757 Management of Cesarean Scar Pregnancy over 8 Weeks of Gestation with Intra-Gestational MTX Followed By Surgery at Different Opportunities

Cheng X,[*,1] Niu J[2]. [1]*Shenyang Women's and Children's Hospital, Shenyang Women's and Children's Hospital, Shenyang, China;* [2]*Department of Gynecology, Shenyang Women's and Children's Hospital, Shenyang, China*
*Corresponding author.

Study Objective: To investigate the clinical efficacy and safety of intra-gestational MTX combined with surgery at different opportunities in the treatment of over 8 weeks cesarean scar pregnancy, and to find the best surgical timing.
Design: A retrospective cohort study.
Setting: Tertiary referral centre.
Patients or Participants: Patients were diagnosed with CSP over 8 weeks of gestation and serum β-HCG≥ 5000mIU/ml.
Interventions: Intra-gestational injection of MTX followed by laparoscopic or hysteroscopic resection of CSPs.
Measurements and Main Results: A total of 378 admissions were included from 2011 to 2020. The patients were divided into 5 groups according to the interval between MTX pretreatment and surgery, group A: 1 to 4 days, group B: 5 to 7 days, group C: 8 to 10 days, group D: 11 to 14 days, group E: more than 14 days. The success rates of combine therapy in group A and group B were 93.94% and 95.57%, respectively ($P > 0.05$), which were statistically higher than those of group C, D and E (84.93%, 84.85%, 81.67%; all $P > 0.05$), all $P < 0.05$. With the prolongation of the interval between MTX pretreatment and surgery, the length of hospital stay was increased (all $P < 0.05$). The varied ranges and percentage changes of serum β-HCG before surgery were increased 1 to 4 days after MTX pretreatment, and then decreased stepwise with increasing pretreatment time (all $P < 0.05$).
Conclusion: Intra-gestational MTX within 7 days followed by surgery to treat CSP patients over 8 weeks of gestation, with higher success rate and shorter hospital stay, is a more proper combined treatment modality. Within 7 days after intra-gestational MTX, the decrease of serum β-HCG has no significant effect on the success rate, and there is no need to wait for a significant decrease in serum β-HCG before surgery.

Category: Reproductive Medicine

SubCategory: Robotics

9765 Uterine Conserving Surgical Management of Early Placenta Accreta Syndrome (PAS)

Parra NS,[*,1] Seaman SJ,[1] Arora C,[2] Kim JH*[1]. [1]*OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY;* [2]*Department of Obstetrics and Gynecology, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To describe a surgical technique for a uterine conserving approach in the management of early PAS.
Design: Case series describing three patients with early PAS desiring uterine conservation.
Setting: Single tertiary academic center.
Patients or Participants: Three patients were diagnosed with early PAS between 8- and 12-weeks gestational age. Diagnosis was made ultrasonographically. Features suggestive of PAS include absent overlying myometrium, absent retroplacental "clear space," and bulging, thickening, and nodularity in the lower uterine segment abutting the bladder.
Interventions: Preoperative preparation comprised of extensive counseling and detailed imaging review with maternal fetal medicine and gynecologic surgery specialists. The operating room was prepared for possible conversion to hysterectomy or open, and blood products were on standby.
Two cases were also preceded by uterine artery embolization (UAE) using temporary gel foam.
Intraoperatively, an obliterated anterior cul-de-sac required extensive lysis of adhesions (LOA) to visualize the pregnancy. A colpotomy cup with a short or absent uterine manipulator tip provided cephalad tension. Vasopressin was injected circumferentially in the myometrium surrounding the bulging pregnancy.
In two cases, suction dilation and curettage was performed just prior to hysterotomy to decompress the uterus allowing improved access and contraction of the myometrium.
An elliptical hysterotomy was made around the invasive pregnancy using monopolar shears. The endometrial cavity was entered and explored to ensure complete removal. 2-0 barbed sutures were used to close the uterine defect in a multilayered fashion. A sheet of regenerated cellulose was placed for adhesion prophylaxis.
Measurements and Main Results: All three patients underwent successful robotic-assisted laparoscopic resection of PAS and repair of the uterine defect. Mean estimated blood loss (EBL) was 217cc with lowest EBL following preoperative UAE. Operative time averaged 164 minutes.
Conclusion: Robotic-assisted laparoscopic excision and repair of early PAS is safe and feasible. Further studies are warranted to ensure optimal perioperative management and determine long- term outcomes.

Category: Laparoscopy

SubCategory: Robotics

9767 Stepwise Approach to Rectovaginal Space Dissection for the Minimally Invasive Gynecologic Surgeon

Bagaria M,[*,1] Vasilev D,[2] Louie M*[1]. [1]*Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ;* [2]*Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ*
*Corresponding author.

Study Objective: To describe the anatomical borders of the rectovaginal space and provide a stepwise approach to opening the rectovaginal space via laparoscopy with and without robotic assistance.
Design: Educational video.
Setting: Tertiary care academic center.
Patients or Participants: N/A.
Interventions: Dissection of the rectovaginal space may be necessary to facilitate certain gynecological procedures and avoid inadvertent injury to rectum, ureters, and vagina. In this video, we describe a stepwise approach to rectovaginal dissection including: (1) Dissection of the medial pararectal space, lateral to the uterosacral ligaments and medial to the ureter (2) Undermining the rectovaginal peritoneum using lateral to medial push-and-spread, blunt dissection (3) Making a transverse peritoneal incision on the posterior cervix to enter the rectovaginal space superiorly (4) Separating the rectum from the rectovaginal peritoneum by applying proper traction and judicious use of electrosurgery (5) Transecting the peritoneum with appropriate margins. We demonstrate the application of these steps with live surgical footage in both conventional laparoscopy and robotic-assisted laparoscopy. This stepwise approach can be applied to a variety of gynecological procedures and the order of these steps can be individualized to suit patient anatomy and pathology.
Measurements and Main Results: N/A.
Conclusion: A stepwise approach to rectovaginal dissection helps to improve efficiency, safety, and reproducibility even in cases with advanced pathology.

Category: Natural Orifice Surgery

SubCategory: Laparoscopy

9769 Vaginal Approach for the Surgically Complex Abdomen

Mohr-Sasson A, Hui M, Dziadek O, Montealegre A. Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: To demonstrate the advantage of Vaginal Natural Orifice Transluminal Endoscopic Surgery (vNOTES) approach in a woman with surgically complex abdomen.
Design: Video case presentation.
Setting: Elective surgery performed in a tertiary University affiliated medical center.
Patients or Participants: A 32-year-old woman G2P0020 with medical history of endometriosis, hypertension, Nutcracker syndrome, Myasthenia Gravis and Autoimmune dysautonomia. Her past surgical history included: jejunostomy, ileostomy and gastrostomy with PEG tube.
Interventions: The patient desires bilateral salpingectomy for sterilization.
Measurements and Main Results: The video demonstrates the decision for choosing the vNOTES approach and the surgical steps.
Conclusion: vNOTES should be considered as the favorable surgical approach in women following previous abdominal surgeries.

Category: Laparoscopy

SubCategory: Endometriosis

9771 Pelvic Anatomy for Chronic Pelvic Pain

Lyon A,[1] Wright K[2]. [1]OBGYN, Cedars Sinai Medical Center, Los Angeles, CA; [2]Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA*
*Corresponding author.

Study Objective: An educational video reviewing pelvic anatomy for endometriosis dissection and patients with chronic pain.
Design: Surgical video.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: The video reviews pelvic anatomy, common sites of endometriosis resection, and relevant anatomy for hypogastric and posas nerve blocks for patients with chronic pelvic pain.

Category: Laparoscopy

SubCategory: Pelvic Pain

9773 Vaginal Hysterectomy Versus Laparoscopic Hysterectomy in Benign Gynecological Conditions: An Updated Meta-Analysis of RCTs for 2023

Marchand GJ,[1] Masoud A,[2] Ulibarri H,[1] Arroyo A,[1] Coriell C,[1] Goetz S,[1] Moir C,[1] Moberly A[1]. [1]The Marchand Institute for Minimally Invasive Surgery, Mesa, AZ; [2]Medicine, Fayoum University Faculty of Medicine, Fayoum, Fayoum, Egypt*
*Corresponding author.

Study Objective: Vaginal hysterectomy versus laparoscopic hysterectomy in benign gynecological conditions: a 2023 updated systematic review and meta-analysis of randomized controlled trials.
Design: Systematic Review and Meta-Analysis.
Setting: N/A.
Patients or Participants: Twenty-three RCTs fulfilled our inclusion criteria with a total population of 2408, 1105 in the VH group and 1303 in the LH group. There was an insignificant difference in terms of intraoperative and short-term complications except for blood loss and urinary tract infection (UTI) which were lower in the VH group (Mean difference (MD) -68, 95% CI; -104.29 to -31.7, p=0.0002, I2=95%) and (Odds ratio (OR) 1.73, 95% CI; 0.92 to 3.26, p=0.03, I2=0%), respectively. Also, VH was associated with less operation time, recovery time, and postoperative pain on the same postoperative day.
Interventions: We searched for randomized controlled trials (RCTs) that compared vaginal hysterectomy (VH) versus laparoscopic hysterectomy (LH) in benign gynecological conditions. Our primary outcomes were surgical complications, and secondary outcomes included operation time, length of hospital stay, recovery time, and effectiveness.
Measurements and Main Results: Twenty-three RCTs fulfilled our inclusion criteria with a total population of 2408, 1105 in the VH group and 1303 in the LH group. There was an insignificant difference in terms of intraoperative and short-term complications except for blood loss and urinary tract infection (UTI) which were lower in the VH group (Mean difference (MD) -68, 95% CI; -104.29 to -31.7, p=0.0002, I2=95%) and (Odds ratio (OR) 1.73, 95% CI; 0.92 to 3.26, p=0.03, I2=0%), respectively. Also, VH was associated with less operation time, recovery time, and postoperative pain on the same postoperative day.
Conclusion: When feasible, vaginal hysterectomy seems to remain the preferred approach of hysterectomy as it requires less time during surgery, results in less blood loss, lower urinary tract infection, and postoperative pain, and promotes faster recovery. This is consistent with the findings of earlier meta-analyses with fewer studies.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Urogyn/Pelvic Floor Disorders

9783 Updating Sacrocolpopexy Depth of Dissection: A Systematic Review

Nassar D,[*,1] *Kadakia D,*[1] *Shu M,*[2] *Burger M,*[3] *Eddib A*[4]. [1]*Obstetrics and Gynecology, University at Buffalo, Buffalo, NY;* [2]*Obstetrics and Gynecology, Henry Ford Wyandotte Northline Womens Health Center, Southgate, MI;* [3]*Minimally Invasive Gynecologic Surgery, Kaleida Health, Williamsville, NY;* [4]*Kaleida Health, Buffalo, NY*
*Corresponding author.

Study Objective: This systematic review aimed to answer: In the published RCTs on sacrocolpopexy, what is the variation on depth of dissection? This review was conducted to inform a categorization scheme for organizing and classifying sacrocolpopexy procedures.
Design: Systematic review of literature as of March 2022.
Setting: Scientific databases of EMBASE and Medline were queried.
Patients or Participants: The search was limited to articles in the English language with human subjects. Only RCTs were considered for inclusion. Prospective and retrospective studies, conference proceedings, abstracts without corresponding manuscripts, and case series were excluded.
Interventions: The methods section of each eligible RCT was reviewed by two separate researchers and categorized by depth of dissection in anterior and posterior vaginal compartments.
Measurements and Main Results: 52 articles met criteria for inclusion. In 50% of the reviewed articles (n=26), the anterior vaginal compartment depth of dissection was not described. The bladder trigone and bladder neck dissections were represented in 37% (n=19) and the proximal vagina in 13% (n=7) of studies. Regarding posterior compartment dissection, 48% (n=25) did not report a specified depth landmark. 15% of studies (n=8) describe dissection along the full length of the vagina and specify dissection to the levator ani musculature. 2% (n=1) discuss dissection along the full length of the vagina to the dorsal perineal membrane. 12% of studies described depth to the perineal body (n=6), 10% to the distal vagina (n=5), and 13% (n=7) to the proximal vagina.
Conclusion: The depth of dissection is variable and often incompletely described in literature on SCP. A standardized classification system may be of benefit to researchers and clinicians to establish categories of SCP to improve communication and comparison regarding the procedure.

Category: Single-Port

SubCategory: New Instrumentation or Technology

9794 Transumbilical Laparoscopic Single-Site Extraperitoneal Approach for Fertility-Sparing Staging Surgery of Epithelial Ovarian Cancer

Zheng Y, Chen Y. Gynecologic Oncology, West China Second University Hospital, Sichuan University, Chengdu, China*
*Corresponding author.

Study Objective: To demonstrate advantages of transumbilical laparoendoscopic single-site extraperitoneal approach in fertility-sparing staging surgery of epithelial ovarian cancer.
Design: Stepwise surgical film.
Setting: A hospital.
Patients or Participants: The patient was 29-year-old G0P0 presenting with a strong desire for fertility preservation who had low-grade serous adenocarcinoma after a laparoscopic left ovarian cystectomy in another hospital. The operative record showed intraoperative cyst rupture.
Interventions: Transumbilical laparoendoscopic single-site surgery has significant advantages in minor incision, specimen retrieval, slight pain and rapid recovery. The feasibility and safety of ovarian cancer staging surgeries through single-site approach have been proved. However, the risk of intraoperative complications during transperitoneal lymphadenectomy including vascular, intestinal and ureteral injuries is increasing due to lack of assistance. Previous studies reported lateral extraperitoneal approach to achieve better exposure and dissection of para-aortic lymph nodes with lower risk of complications, while bilateral obturator regions were poorly explored. We designed an innovative extraperitoneal approach through the same umbilical incision which achieves satisfactory visualization and lymph nodes retrieval of both pelvic and para-aortic areas. We found it particularly suitable for fertility-sparing because it can maintain intact peritoneum and reduce intraperitoneal adhesion, which might contribute to future pregnancy.
Preoperative staging of this patient was stage IC1. The whole surgical procedures were completed through a 2cm umbilical incision. Development of the extraperitoneal approach including purse string suture and posterior peritoneal incision above the aortic bifurcation was completed under laparoscopy. An appropriative port was inserted into the extraperitoneal space to perform lymphadenectomy. Other concomitant procedures were completed intraperitoneally.
Measurements and Main Results: The total operative time was 230min with 200ml blood loss. The patient was discharged in 3 days and no complications occurred. Pathology examination revealed no residual tumor in all specimens which made the postoperative stage keep as IC1.
Conclusion: Transumbilical laparoendoscopic single-site extraperitoneal approach is of great advantage in fertility-sparing staging surgery for epithelial ovarian cancer.

Category: Endometriosis

SubCategory: Robotics

9795 Prevention and Treatment of Ovarian Remnant Syndrome in Individuals with Advanced Endometriosis

Gebrezghi S,[*,1] *Tam J,*[2] *Whitmore G,*[2] *Kim S,*[3] *Orlando M*[2]. [1]*OB-GYN, University of Colorado Hospital, Denver, CO;* [2]*Minimally Invasive Gynecologic Surgery, University of Colorado Hospital, Denver, CO;* [3]*Urology, University of Colorado Hospital, Denver, CO*
*Corresponding author.

Study Objective: We aim to review risk factors and diagnosis of ovarian remnant syndrome and to discuss surgical principles for complete resection to minimize recurrence risk.
Design: Case report.
Setting: Academic medical center.
Patients or Participants: 42-year-old G0 with a remote history of total hysterectomy and left salpingo-oophorectomy for endometriosis who presented with left flank pain. Pelvic imaging demonstrated left hydronephrosis and a 3.6 cm cystic lesion in the left adnexa at the level of the dilated ureter, concerning for ovarian remnant.
Interventions: Given severe pain and hydronephrosis, the patient had a left percutaneous nephrostomy tube placed preoperatively. She elected to undergo minimally invasive excision of the ovarian remnant and removal of the contralateral ovary to limit the risk of endometriosis recurrence. Intraoperatively, we determined that left ureteral reimplantation was warranted due to extrinsic ureteral endometriosis and patient's desire for complete resection of all visible disease.
Measurements and Main Results: We discuss the following surgical principles for the management of ovarian remnant syndrome in patients with advanced endometriosis: 1) comprehensive evaluation of distorted anatomy and identification of endometriosis, 2) retroperitoneal approach involving complete ureterolysis, 3) proximal division of the ovarian vessels at their origin, 4) removal of sub-ovarian adhesions and adequate peritoneal margins along the external iliac vessels, and 5) excision of other sites of abdominopelvic endometriosis.
Conclusion: We present an evidence-based approach to the management of ovarian remnant syndrome to prevent recurrence in patients with advanced endometriosis. This patient was discharged home in good condition with pain resolved at her postoperative visit.

Category: Laparoscopy

SubCategory: Research

9810 Digitised Gynaecological Laparoscopic Training – A Modern Approach

Rawaf DL,[*,1] Mallick R,[2] Beard L,[3] Abdulkader N,[4] Adamczyk M,[5] Bryony C,[6] Harvey N[6]. [1]Inovus Medical, NHS, London, United Kingdom; [2]University Hospitals Sussex NHS Foundation Trust, Princess Royal Hospital, Hawards Heath, United Kingdom; [3]1University Hospitals Sussex NHS Foundation Trust, Princess Royal Hospital, Haywards Heath, United Kingdom; [4]Barts Health, London, United Kingdom; [5]St Peters Hospital, Chertsey, United Kingdom; [6]University Hospitals Sussex NHS Foundation Trust, St Richards Hospital, Chichester, United Kingdom*
*Corresponding author.

Study Objective: To assess self-confidence and to demonstrate the benefits of embedding structured simulation programs into gynaecology curriculums.
Design: Initially survey assessment (covering knowledge, skills and confidence) disseminated to 60 trainees (20 basic, intermediate and advanced), followed by a laparoscopic simulation course and repeat survey.
Setting: NHS 'Deanery' regional training program.
Patients or Participants: Early to late-stage gynaecology residents.
Interventions: Trainees received laparoscopic-box trainers (Inovus LapAR) and then four in-person sessions supplemented by lectures & practical exercises.
Measurements and Main Results: When rating their laparoscopic skills overall 45%, 52.8% and 80% positively in the basic, intermediate and advanced groups respectively. 25%/35% in the basic, 76.47%/70.59% in the intermediate and 100%/100% in the advanced group felt confident in performing safe entry/diagnostic laparoscopy. 10% in the basic group felt confident in performing salpingectomy compared to 58.82%/100% in the intermediate/advanced groups. 23.55% in the intermediate group felt confident in performing ovarian cystectomy compared to 60% in the advanced. 6.25%/23.53% and 20%/20% of intermediate and advanced trainees felt confident in performing hysterectomy/suturing. No trainees felt confident performing myomectomy.
Across all 60 trainees there was a statistically significant (p=<0.05) improvement in smoothness, time and speed. Within the beginner and intermediate groups there was a statistically significant (p=<0.05) improvement in laparoscopic knowledge, skills and confidence with beginner and intermediate operations (diagnostic laparoscopy, salpingectomy). Within the advanced group there was a statistically significant (p=<0.05) improvement in their confidence with advanced skills and operations (suturing, myomectomy, hysterectomy).
Conclusion: Across all streams, an imbedded simulation programme significantly improves surgical performance. Despite high confidence for simple procedures, it is clear from the initial survey that confidence falls as complexity of the procedures increase. However, following the course, trainees in the basic stream showed the most significant improvement across all parameters measured, highlighting the benefits of embedding structured simulation programmes into the curriculum early in the training programme.

Category: Basic Science/Education

SubCategory: Other

9817 Simulation Training Experience and Trends in Minimally Invasive Gynecologic Surgery Fellowship: A Survey

Hamilton KM,[*,1] Meyer R,[1] Schneyer R,[1] Wright K,[1] Advincula A,[2] Truong M[1]. [1]Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA; [2]OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To determine trainee and fellowship director experience, perceptions, and preferences with simulation and to assess the status of simulation training in FMIGS programs.
Design: Survey based study.
Setting: REDCap survey.
Patients or Participants: Current U.S. MIGS Fellows and Program Directors/Assistant Program Directors were surveyed.
Interventions: A survey was distributed during the AAGL 2022 annual meeting regarding simulation training experience based on FMIGS milestones.
Measurements and Main Results: 38 individuals responded to the survey, including 12 (31.6%) first-year Fellows, 6 (15.8%) second-year fellows, and 20 (52.6%) Program Directors/Assistant Program Directors.
Eighty percent of respondents reported having no formal training in simulation. 97% have access to a simulation center at their facility, but only 32% have a formal simulation curriculum in their program. Psychomotor/surgical skills was the most common clinical competency covered (92%) while non-technical competencies (team training, interpersonal communication skills and critical thinking/decision-making skills) less so. Barriers to implementing a simulation curriculum included lack of time (65%), faculty (42%), training (35%), access to equipment (27%) and cost (27%).
66% felt having a formal FMIGS simulation curriculum at their program was imperative, while 29% thought it was at least somewhat important. 82% would participate in a national formal simulation curriculum if it were available. 79% thought the ideal frequency of simulation implementation should be once or twice per year.
Conclusion: Despite being perceived as important, the majority of FMIGS trainees and faculty do not have formal training in simulation. MIGS fellowship programs most commonly focus on technical rather than non-technical skills or simulation methodology. This study argues that more resources should be dedicated to curriculum development and implementation in MIGS fellow education through simulation.

Category: Endometriosis

SubCategory: Pelvic Pain

9821 GnRH Analogues and Dienogest for Treatment of Endometriosis Associated Pain: A Systematic Review and Network Meta-Analysis

Dick A. ObGyn, Hadassah Medical Center and The Hebrew University of Jerusalem, Jerusalem, Israel*
*Corresponding author.

Study Objective: Endometriosis associated pain is a major concern in women's healthcare. GnRH agonists and dienogest are well established treatments for pain symptoms. Recently, oral GnRH antagonists were introduced and shown to be effective for endometriosis treatment. Yet, superiority of either of those drugs is not yet known. This meta-analysis aimed to compare the efficacy and side effect profile of GnRH analogues and Dienogest for the treatment of endometriosis associated pain.
Design: MEDLINE, Embase, and Cochrane were searched for randomized controlled trials evaluating the impact of Dienogest and GnRH analogues on pelvic pain, dysmenorrhea and dyspareunia.
Setting: Systemic review and meta-analysis.
Patients or Participants: Women with surgically confirmed endometriosis suffering from pelvic pain, dysmenorrhea and dyspareunia.
Interventions: None.
Measurements and Main Results: Relative risks were calculated with subsequent 95% confidence intervals. Network meta-analysis was conducted, incorporating direct and indirect comparisons among the different treatments. The primary outcome was significant (>30%) reduction in endometriosis associated pain.

Results: 8 studies including 2,967 patients reported percentile of women with a significant improvement in pelvic pain. Dienogest was found to be superior to GnRH antagonist treatment (RR 1.42, CI 1.04- 1.02) and to Leuprolide (RR 1.46, C.I. 1.04-2.06). Six studies including 2,255 patients reported upon improvement is dysmenorrhea. High dose (>200 mg/day) of GNRH antagonist was found to be superior to low dose (<150 mg/day) GNRH antagonist (RR 1.61, C.I. 1.3-2.0) and to Leuprolide (RR 1.43, C.I. 1.1-1.86).
Conclusion: Dienogest has shown to be more effective in improving pelvic pain, as compared to the other drugs. Likewise, high dose GNRH-antagonist is beneficial in the treatment of dysmenorrhea. These findings may serve clinical practitioners in electing medical therapy.

Category: Research

SubCategory: Other

9823 Impact of Race and Ethnicity on Hysterectomy Rates, Approach and Complications: A Systematic Review

Sedra S,[1] Chang P,[1] Kinahan J,[1] Le AL,[2] Herman D,[3] Jackman V,[4] Le T,[1] Hum E,[3] Chen I[5]. [1]The Ottawa Hospital, Ottawa, ON, Canada; [2]Ottawa Hospital Research Institute, Ottawa, ON, Canada; [3]University of Ottawa, Ottawa, ON, Canada; [4]Memorial University of Newfoundland, St. John's, NF, Canada; [5]Gynecology and Obstetrics, University of Ottawa, Ottawa, ON, Canada*
*Corresponding author.

Study Objective: To determine the association between race and ethnicity on hysterectomy rates, approach, and complications.
Design: Systematic review.
Setting: N/A.
Patients or Participants: Using a search protocol Embase, Medline, Cochrane Library and the grey literature were searched for studies published between 2010-2020. Inclusion criteria were retrospective observational studies that described the association of race/ethnicity with hysterectomy rates, approaches (laparoscopic, abdominal, vaginal), and complication rates. 4990 studies were identified by electronic search, and 80 studies were included in the analysis. Data was extracted by two independent reviewers using a standardized form. Where feasible meta-analysis was performed using RevMan. Quality was assessed by the Newcastle-Ottawa Scale.
Interventions: N/A.
Measurements and Main Results: A total of 80 studies were reported from North America (n=75), Europe (n=4), and Asia (n=1). Race/ethnicity was reported for the outcomes of hysterectomy rate (n=51), minimally invasive hysterectomy rate (i.e., Technicity) (n=36), and surgical complications (n=38). Compared with white race/ethnicity, black race/ethnicity was associated with increased hysterectomy rates (n=9) odds ratios (OR) ranged from 1.07 to 1.92, decreased minimally invasive approach (MIA) to hysterectomies (n=16) OR 0.33 to 0.91, and increased surgical complications (n=15) OR 1.12 to 2.76. Compared with white race/ethnicity, Hispanic race/ethnicity was associated with increased hysterectomy rates (n=6) OR 1.17 to 1.38, decreased MIA to hysterectomies (n=10) OR 0.45 to 0.91, and increased surgical complications (n=5) OR 1.25 to 1.99. Compared with white race/ethnicity, Asian/Pacific Islander was associated with increased hysterectomy rates (n=6) OR 1.12 to 2.01, decreased MIA to hysterectomies (n=6) OR 0.65 to 0.92, and increased surgical complications (n=2) OR 1.53 to 2.44. Overall quality of included studies was variable.
Conclusion: Patient race/ethnicity appears to be associated with gynecologic surgical care and outcomes. While these associations may be partly attributable to genetic factors, the concurrent effects of racial disparities and differences in social determinants should also be considered.

Category: Laparoscopy

SubCategory: Adenomyosis

9830 Uterine Artery Sparing Laparoscopic Partial Hysterectomy

Marwah V,[1] Kedia S,[1] Gupta K,[1] Tongaria K,[1] Chakravarty R[2]. [1]Division of Minimally Invasive Gynecology, Max Superspeciality Hospital Saket, New Delhi, India; [2]Obstetrics & Gynecology, Command Hospital, Kolkata, India*
*Corresponding author.

Study Objective: To devise a ovarian sparing method for patients requiring hysterectomy who are unresponsive to medical management and levonorgestrel implant.
Design: N/A.
Setting: Extended lithotomy, uterine manipulator.
Patients or Participants: Patients aged 35 to 42yrs who have been advised hysterectomy, are non-responsive to medical management and Levonorgesteral implant but want Ovarian conservation.
Interventions: The procedure involves sparing half to one cm of margins of the myometrium from the level of internal os up to the ovarian pedicles keeping lateral and parallel to the ascending branch of uterine artery.
The procedure starts with identifying the ascending branch of uterine artery both sidelong with the demarcation of level of internal Os with aid of cervical cup of uterine manipulator.
Ultracision is used to create a line of margin of half to one cm of blanched myometrium from ascending branch of uterine artery, bilateral cornual ends and the isthmus going to the level of internal os both anteriorly and posteriorly.
Using the ultracision blade the margins are deepened anteriorly and posteriorly with traction and counter traction from uterine manipulator, tooth grasper and 10mm tenaculum till the internal Os is visualized.
The vertical limb of uterine manipulator is withdrawn and after detaching the major portion of uterus including the entire uterine cavity.
The endocervical lining is then cauterized with bipolar forceps.
The endocervical canal is closed with the barb suture followed by baseball suturing for haemostatic approximation of the remnant flaps.
Measurements and Main Results: N/A.
Conclusion: This technique is a viable option for young patients advised to undergo total hysterectomy because of abnormal uterine bleeding with severe dysmenorrhoea unresponsive to medical management and levonorgestrel implant but desire to have their ovarian function intact.

Category: Robotics

SubCategory: Fibroids

9831 Double Trouble − Hysterectomy on a Uterine Didelphys with an 11cm Pelvic Mass

Sarofim M, Robertson JA, Kalantan A, Choi S, Cario G, Rosen D, Chou D. Gynaecology, Sydney Womens Endosurgery Centre, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: Mullerian anomalies are thought to occur in up to 4% of those born female; while uterine didelphys (UD) affects only 0.3%. Thus, surgical management can often be difficult and poorly understood. We present the case of a 59-year-old patient who had an incidental finding of an 11cm pelvic mass on pelvic ultrasound with a known UD after complaining of left sided hip/pelvic pain. She had an unremarkable history aside from a vaginal birth 30 years prior. Her examination revealed two cervical OS with a partial vaginal septum.
Design: N/A.

Setting: This case was one of the first cases performed in Australia on the HUGO-RAS robot.
Patients or Participants: N/A.
Interventions: The patient was consented for a robotic hysterectomy and bilateral salpingectomy.
Measurements and Main Results: We will present the surgical video highlighting our surgical approach for this UD. A recto-vesical ligament between the two uteri is present and is a rare anatomical structure present in some Mullerian anomalies. The retroperitoneal pelvic mass that is resected was sent for histopathology which confirmed that it was a benign leiomyoma. The steps to the hysterectomy are similar to a single uterus however a key step is to ensure the uterine manipulator is utilised effectively throughout the case on each uterine horn. This case was performed with the HUGO-RAS system with an assistant Air-Seal port; which is crucial after a double colpotomy to maintain pneumoperitoneum. The on-console time was 55 minutes. A cystoscopy was performed which was unremarkable and the patient made a complete recovery with no complications.
Conclusion: This case is a rare presentation of multiple pathologies/abnormalities. It highlights the importance of understanding anatomy, haemostasis, and pre-operative and intra-operative planning. Moreover, the HUGO-RAS system performed well even though it is relatively new to the robotic surgical space.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Laparoscopy

9835 A New Surgical Technique: Indocyanine Green (ICG) Intra-Vaginally during Sacrocolpopexy

Sarofim M,[*,1] Robertson JA,[1] Kalantan A,[1] Choi S,[1] Cario G,[1] Chou D,[1] Conrad DH,[2] Rosen D[1]. [1]Gynaecology, Sydney Womens Endosurgery Centre, Sydney, NSW, Australia; [2]Gynaecology, SMIGS The Sutherland Hospital, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: Ever since Scali et al. described a procedural modification of sacrocolpopexy (SCP) involving the dissection of the vesicovaginal space to improve the cure rate for cystocele in 1974 the question remains as to the ideal location for dissection during a SCP. Instruments are occasionally placed at the lowest point of prolapse vaginally and tactile feedback is used to assess when that point is reached abdominally. However, this not only makes vaginal manipulation harder, but also the absence of true tactile feedback in the ever-advancing robotic space makes this more difficult to accomplish. At Sydney Womens Endosurgery Centre we set out to find a simpler and more effective way of determining optimal dissection using indocyanine green (ICG), which is a fluorescent compound that has been used in medicine for more than 60 years.
Design: N/A.
Setting: N/A.
Patients or Participants: This procedure was carried out on a 58-year-old woman for laparoscopic hysterectomy, sacrocolpopexy and burch colposuspension for stage-3 vault prolapse with urodynamic confirmed stress incontinence.
Interventions: The two clamps that are usually used at the lowest point of prolapse were replaced with injection of ICG diluted in sterile water directly into the vaginal tissue at the appropriate location on both the anterior and posterior vagina. As can be visualised in the video fluorescence with the Stryker AIM system clearly highlights when that point had been reached on both the posterior and anterior vaginal wall. No tactile feedback was necessary. The remainder of the surgery was completed and the patient made an unremarkable recovery.
Measurements and Main Results: N/A.
Conclusion: The use of ICG during sacrocolpopexy is a new novel surgical technique that can be used to identify the ideal site of dissection whilst also simplifying the second assistants' task and reducing the need for tactile feedback surgically. This technique is currently being validated via a prospective trial and long-term follow-up.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Laparoscopy

9837 Laparoscopic Guide to Sacrospinous Ligament Fixation in a Patient with a J Pouch

Savoni J,[*,1] Hurtado E[2]. [1]Minimally Invasive Gynecologic Surgery, Cleveland Clinic Florida, Weston, FL; [2]Urogynecology and Reconstructive Pelvic Surgery, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: To review an approach to treating pelvic organ prolapse in a patient with a J pouch.
Design: Video case presentation.
Setting: The patient was positioned in dorsal lithotomy position. Laparoscopic entrance was at Palmer's point using direct visual entry technique. Laparoscopy was performed using a 5mm umbilical port, 8mm left upper quadrant port, 5mm left lower quadrant port, and 5mm right lower quadrant port.
Patients or Participants: This is a single case presentation of a patient who underwent pelvic organ prolapse surgery. She was seen for follow up at 2 weeks, 6 weeks, and 5 months post-operatively.
Interventions: This patient underwent total laparoscopic hysterectomy, bilateral salpingo-oophorectomy, anterior and posterior repair, sacrospinous ligament fixation, and cystoscopy. This video highlights the sacrospinous ligament fixation performed under laparoscopic guidance.
Measurements and Main Results: The case presented has a history of a J pouch and during laparoscopy it was noted that the pouch was densely adhered to the right pararectal space. Given the location of the pouch, a uterosacral ligament suspension was unable to be performed and a left sacrospinous ligament fixation was instead chosen for apical suspension. Since the J pouch crossed the midline, the decision was made to complete the left sacrospinous ligament fixation under laparoscopic guidance to prevent injury.
Conclusion: Apical suspension can be successfully and safely completed in a patient with a J pouch using the techniques described in this video.

Category: Laparoscopy

SubCategory: Robotics

9840 Reducing Postoperative Bleeding after Laparoscopic Hysterectomy Via Independent Closure of Vaginal Cuff Angles

Radtke S,[*,1] Sanchez S,[1] McCall E,[1] Abdeldayem J,[2] Arms R,[1] Son MA,[1] Bencomo M,[1] Olivas-Cardiel K,[1] Rodriguez S[1]. [1]Obstetrics and Gynecology, Texas Tech University Health and Sciences Center, El Paso, TX; [2]Texas Tech University Health and Sciences Center, El Paso, TX*
*Corresponding author.

Study Objective: Determine if independently closing the vaginal cuff angles in addition to running barbed suture has an effect on postoperative bleeding after laparoscopic hysterectomy.
Design: Randomized controlled trial.
Setting: University-based medical center (OR, clinic).
Patients or Participants: This is a preliminary report from the "APEX trial" (NCT05174988). Eligible participants were between ages of 18-60

undergoing laparoscopic hysterectomy for benign indications. Patients were excluded if scheduled for concomitant pelvic floor repair/vaginal procedures (USLS, MUS, etc.), or if final pathology revealed malignancy.
Interventions: Patients were randomized to either undergo vaginal cuff closure with figure-of-eight stitches at each angle using 0-polyglactin, and single-layer barbed suture from right to left for the remaining portion (APEX group), vs single layer closure with barbed suture from right to left (CONTROL group). Allocation was revealed to surgeon after completion of hysterectomy, before cuff closure, and all closures were performed by MIGS trained surgeons. A standardized survey was given to patients by blinded research staff between 10-25 days postop inquiring about the subjective quantification of vaginal bleeding after surgery. Patients remained blinded to allocation.
Measurements and Main Results: 42 patients were included in the APEX group and 50 in the CONTROL group (n=92). Groups were similar in terms of age (43.6 v 44.4 p=.62) and BMI (35.0 v 33.1 p=.30). Diabetes was more prevalent in APEX group (23.0% v 8%). There was no difference in the presence of postoperative vaginal bleeding between groups (35.7% v 30% p=.56). Out of these, 60% in the APEX group and 40% in the CONTROL group reported bleeding as "Daily" or "Most days". Cuff closure time in seconds was significantly higher in the APEX group (816.07s v 516.64s, p=.02). There was one reoperation for cuff dehiscence in the APEX group.
Conclusion: Separately closing vaginal cuff angles after laparoscopic hysterectomy does not reduce postoperative bleeding, and takes on average an additional 5 minutes of operative time.

Category: Reproductive Medicine

SubCategory: Robotics

9850 10-Step Isthmocele Repair in a Unicornuate Uterus

Hui M,[*,1] *Mohr-Sasson A,*[1] *Dziadek O,*[2] *Leon MG,*[1] *Montealegre A,*[1] *Bhalwal A*[1]. [1]*Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX;* [2]*Obstetrics, Gynecology and Reproductive Sciences, UTHealth Houston, Houston, TX*
*Corresponding author.

Study Objective: To review isthmocele findings and to describe a 10-step approach for the surgical repair of an isthmocele in a unicornuate uterus.
Design: Narrated video footage.
Setting: Single academic institution.
Patients or Participants: 41-year-old female, G11P2183 with a history of unicornuate uterus and three prior Cesarean sections, who was referred from reproductive endocrinology and infertility for diagnosis of isthmocele. Patient elected for surgical repair of the isthmocele.
Interventions: Robotic-assisted laparoscopic excision and repair of an isthmocele in the setting of a unicornuate uterus under hysteroscopic guidance. 10-step approach includes the following:
1. Hysteroscopy.
2. Uterine manipulator with cervical cup.
3. Vasopressin.
4. Lysis of adhesions.
5. Backfill bladder.
6. Develop vesico-uterine space.
7. Identify isthmocele.
8. Excise / Revise defect.
9. Closure of defect.
10. Cystoscopy.

Measurements and Main Results: N/A.
Conclusion: Isthmocele is a rare complication of Cesarean section which can cause future pregnancy complications and infertility issues. Correction of an isthmocele can be performed safely using a 10-step approach with robotic-assisted laparoscopy under hysteroscopic guidance.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: New Instrumentation or Technology

9852 Are There Differences in Revision Rates between Interstim's Original and MRI Compatible Devices?

McGregor A,[*,1] *Ndiaya A,*[2] *Hurtado E*[3]. [1]*Minimally Invasive Gynecologic Surgery, Cleveland Clinic Florida, Weston, FL;* [2]*Ross University School of Medicine, Bridgetown, Barbados;* [3]*Urogynecology and Reconstructive Pelvic Surgery, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: To evaluate differences in revision rates in patients with Interstim sacral neuromodulation device before and after introduction of the MRI compatible lead within one healthcare system.
Design: Retrospective chart review.
Setting: Multi-center healthcare system.
Patients or Participants: Female patients who had undergone a sacral neuromodulation procedure within one healthcare system between January 2018 and December 2021.
Interventions: Charts of patients who underwent a procedure from August 2020, when the MRI compatible lead was released, through December 2021 were reviewed. The same number of charts were reviewed for patients who underwent the procedure prior to August 2020. Demographic characteristics, information regarding the initial procedure and reasons for lead revision or removal were collected. Fishers exact test, t test and a logistic regression model were used to analyze the data.
Measurements and Main Results: A total of 724 patient charts were reviewed. 362 patients underwent procedures after August 1, 2020, and received the new MRI compatible lead. 362 patients underwent procedures completed prior to release of the new lead. Demographic characteristics such as age, BMI, race, tobacco use and medical co-morbidities did not differ between groups. Significantly more patients in the original lead group required a second procedure for revision or removal of the device compared to patients who received the MRI compatible lead, 24.3% and 12.7% respectively ($p<0.0001$). The most common reasons for a revision procedure in both groups were persistence of symptoms, lead migration, and pain. However, the only factor that differed significantly between groups was pain, which was a more common reason for revision in the MRI compatible lead group, 41.3% vs. 15.9% ($p = 0.0027$).
Conclusion: The MRI compatible sacral neuromodulation device had a significantly lower revision rate than the original device within one healthcare system. Patients undergoing sacral neuromodulation have several reasons for device revision and removal and further research is needed to better understand these factors.

Category: Research

SubCategory: Endometriosis

9858 FMIGS Graduate Delivers Independent, High-Volume, Diverse, Complex Benign Gynecologic Surgery to Community Hospitals

Dave A[*]. *Obstetrics and Gynecology, Penn State Milton S. Hershey Medical Center, Hershey, PA*
*Corresponding author.

Study Objective: Quantify the surgical impact of an FMIGS graduate.
Design: Retrospective review of claims data.
Setting: Community Hospitals.
Patients or Participants: Single FMIGS graduate surgeon's surgical practice.
Interventions: A single FMIGS graduate's deidentified administrative data was used to characterize growth of a new community-based complex benign gynecologic surgical practice in the first 4 years (August 2017-August 2021) after Fellowship.

Date of Service (DoS), Place of Service (PoS), CPT codes, modifiers (M##) and ICD-10-PCS codes were aggregated from hospital and outpatient sources.

Measurements and Main Results: During the study period, the surgeon coded 1,884 new patient consults resulting in 814 major and minor cases as primary surgeon, rising from 124 in the first year to a peak of 264 in year 3. Hysterectomies comprised 24.2% (197/819) of cases. Total vaginal hysterectomy (39.1%, 77/197) and total laparoscopic hysterectomy (39.6%, 78/197) were most common. Despite adoption of vNOTES, vaginal hysterectomy volumes declined as the surgeon reported a subjective shift in practice toward endometriosis/pelvic pain.

Operative laparoscopies numbered 154 for complex benign adnexal pathology and 17 laparoscopic myomectomies. Non-opportunistic elective sterilization was referred out due to employer ethical and religious directives. Hysteroscopy included 232 hospital procedures, with 21 hysteroscopic myomectomies, 31 endometrial ablations and 6 lysis of adhesion.

Surgical management of pelvic floor disorders comprised 251 total codes as primary surgeon. This included 63 uterosacral suspensions (25.1%, n=251), 18 sacrocolpopexies, 96 anterior and/or posterior repairs, 25 colpocleisis and 32 midurethral slings.

M78 (unplanned return to OR within global period) was found on 3 distinct DoS. One vaginal cuff dehiscence, one I&D, one apparent same-day return to OR for vaginal hematoma after colporraphy were identified.

Conclusion: FMIGS training can immediately deliver independent, high-volume gynecologic surgeons to clinical practice. Graduates can provide a diverse and flexible range of surgical interventions to comprehensively manage the full spectrum of complex benign gynecologic conditions within community settings.

Category: Fibroids

SubCategory: Robotics

9875 Approaching the Large Uterus: Early Colpotomy and Other Tips.

Dai JS,[*,1] *Roche MR*[*,2]. [1]*OBGYN, Rush University Medical Center, Chicago, IL;* [2]*Rush University Medical Center, Chicago, IL*
*Corresponding author.

Study Objective: Demonstrate useful techniques for laparoscopic and robotic-assisted hysterectomies involving large or difficult uteruses.

Design: Stepwise demonstration of three surgical approaches with narrated video footage from seven hysterectomies.

Setting: Combination of robotic-assisted and laparoscopic hysterectomies.

Patients or Participants: Seven patients undergoing minimally invasive hysterectomies for benign indications.

Interventions: Laparoscopic or robotic-assisted hysterectomies utilizing the following strategies: 1) Starting the colpotomy posteriorly, 2) performing the colpotomy early, 3) performing a supracervical hysterectomy followed by a colpotomy.

Measurements and Main Results: Successful hysterectomies using the featured strategies demonstrated in the video.

Conclusion: Laparoscopic and robotic-assisted hysterectomies involving large uteruses can be challenging. The strategies for approaching colpotomy demonstrated in this video can be utilized to increase the success or ease of the colpotomy.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Laparoscopy

9879 10 Step Management of Uretro-Vaginal and Vesico Vaginal Fistula Repair Laparoscopically

Pandit H, Tajane A. Pandit Hospital, Ahmednagar, India*
*Corresponding author.

Study Objective: A 10 step management of laparoscopic repair of ureterovaginal and vesicovaginal fistula.

Design: A case report.

Setting: Pandit hospital and laparoscopy centre, Ahmednagar, India.

Patients or Participants: A 50-year female with a history of total laparoscopic hysterectomy 6 weeks ago, presented with a complaint of urinary incontinence and continuous leakage of urine per vaginum.

Interventions: Laparoscopic repair of ureterovaginal fistula and vesicovaginal fistula.

Measurements and Main Results: On examination and CT urography, a 3 cm vesicovaginal fistula tract was identified, and the patient was scheduled for laparoscopic fistula repair.

Surgical procedure: 1. Cystoscopy was done, and the vesicovaginal fistulous tract was identified and stented. On attempting ureteric stenting on left side, the DJ stent came back into the bladder and stenting was unsuccessful.

2. We then proceeded with laparoscopy. Ureteric course was dissected on the left side till the bladder.

3. Dissection of the space of Retzius was done.

4. Intraoperatively, after performing cystotomy, it was found that there was a combined vesicovaginal with ureterovaginal fistula.

5. The vagina and bladder were defined; and a plane was created between them. The edges of the fistula were circumscribed and freshened, and a double-layered vaginal closure was performed.

6. Cystotomy was then closed with barbed sutures and epiploicae interposition was done.

7. The bladder was mobilized from right side to achieve tension free anastomosis of the ureter.

8. For the UVF repair, the distal end of ureter was cut and spatulation of ureter was done.

9. A layered cystotomy was performed; followed by Ureteric reimplantation and DJ stent placement i.e., Ureteroneocystotomy.

Conclusion: The present case report highlights the feasibility and success of laparoscopic repair for treating ureterovaginal fistula and vesicovaginal fistula, and thus it can be considered as a viable treatment option for selected patients.

Category: Endometriosis

SubCategory: Laparoscopy

9880 Laparoscopic Side-to-End Colorectal Anastomosis after Bowel Resection for Deep Endometriosis

Luna Ramirez E,[*,1] *López Ramírez MA,*[2] *Luna Hernández D,*[3] *Zapico Ortiz CA*[4]. [1]*Minimally Invasive Gynecologic Surgery, Hospital Angeles Lindavista, Mexico, DF, Mexico;* [2]*Colorectal Surgery, Hospital Central Militar, Mexico, DF, Mexico;* [3]*Gynecology, Hospital Militar de Especialidades de la Mujer y Neonatología, Mexico, DF, Mexico;* [4]*Urogynecology, Hospital Militar de Especialidades de la Mujer y Neonatología, Mexico, DF, Mexico*
*Corresponding author.

Study Objective: The objective of this video we show a complete laparoscopic resection of deep bowel endometriosis with a side-to-end colorectal anastomosis as an alternative approach in cases of deep rectal endometriosis.

Design: Description of one case complete laparoscopic resection of deep bowel endometriosis, and explain the steps for a side to end colorectal anastomosis.

Setting: With the patient under general anesthesia, laparoscopy is performed with the patient in lithotomy position with a López-Zepeda manipulator, placement of 5 trocars, umbilical trocar of 12 mm, 2 trocars of 5 mm in the left side, 1 of 5 mm and 1 of 12 mm on the right side, pneumoperitoneum pressure at 12 mmHg. Linear and circular stapler to perform side-to-end anastomosis.

Patients or Participants: A 46 year's old female presented with a history of chronic pelvic pain characterized by dysuria and disquecia, disabling dysmenorrhea and dyspareunia. She had undergone an open surgery in 2013 with described as a frozen pelvis without treatment. The MRI describes multiple leiomyomas, adenomyosis and a 3.5 cm deep endometriotic nodule in the rectum, also anterior, middle and posterior compartment endometriosis.
Interventions: Complete laparoscopic resection of deep endometriosis: hysterectomy with bilateral oophorectomy, bilateral parametrectomy with nerve-sparing technique and laparoscopic bowel resection with side-to-end colorectal anastomosis.
Measurements and Main Results: The surgical treatment was performed successfully, there were no trans or post-surgical complications the surgical bleeding was 200 cc, the surgical time 190 minutes, the patient was discharge from hospital 72 hours after surgical event, at follow up at 34 moths the patient is without pelvic pain, voiding disfunction, defecatory disfunction or recurrence of the disease.
Conclusion: Side-to-side colorectal anastomosis is feasible after resection of deep bowel endometriosis; it should be performed by a multidisciplinary team with extensive knowledge of anatomy and nerve-sparing techniques. The available recent studies show similar complication rates and functional outcomes compared with an end-to end anastomosis.

Category: Hysteroscopy

SubCategory: New Instrumentation or Technology

9888 Effects of Early Second-Look Hysteroscopy Combined with Intrauterine Balloon Dilatation on Reproductive Outcomes for Women with IUAs

Niu J. Department of Gynecology, Shenyang Women's and Children's Hospital, Shenyang, China*
*Corresponding author.

Study Objective: To develop a safe and effective treatment for preventing recurrence after hysteroscopic transcervical resection of adhesions (TCRA) of intrauterine adhesions (IUA).
Design: Retrospective cohort study.
Setting: Single hospital.
Patients or Participants: 203 patients with IUA from April 2017 to December 2020.
Interventions: As the study group, 109 patients underwent TCRA within 3-7 days after the end of menstruation (secondary amenorrhea was not altered by the menstrual cycle), the first hysteroscopic balloon dilatation was performed 10 days after the procedure, the second hysteroscopic exploration was performed 20 days after the procedure (or the second hysteroscopic exploration after the end of menstruation in case of menstruation), and so on for 2-3 cycles, and hysteroscopy was performed again 3 months after the procedure to assess the recovery of the uterine cavity; in the control group, 94 patients underwent hysteroscopy only at 3 months after the procedure to assess the recovery. All patients were routinely administered estrogen and aspirin postoperatively. Data from the two groups were analyzed and compared, including preoperative and postoperative American Fertility Society (AFS) scores, endometrial thickness in the early follicular phase, and menstrual volume, and patients were followed up for postoperative pregnancy outcomes.
Measurements and Main Results: No intraoperative or postoperative complications such as uterine perforation, infection, fever, or abdominal pain were observed in both groups. The degree of postoperative uterine adhesions, menstrual status, and endometrial thickness showed significant improvement in both groups compared to the preoperative period ($P >$ 0.05). However, the study group showed significant improvement in AFS score, menstrual volume and endometrial thickness compared with the control group. At follow-up, more patients in the study group had a successful pregnancy (48.5% *vs.* 30.8%, $P<0.05$).
Conclusion: Early secondary hysteroscopic exploration combined with uterine balloon dilation after TCRA is safe and effective and improves the prognosis and postoperative pregnancy rate in patients with uterine adhesions.

Category: Endometriosis

SubCategory: Laparoscopy

9894 Ovarian Reserve Markers of Women with Superficial Endometriosis

Lessans N,[1] Gilan A,[2] Bibar N,[1] Saar T,[1] Porat S,[1] Dior U[1].*
[1]Endometriosis Center, Department of Obstetrics and Gynecology, Hadassah-Hebrew University Medical Centre, Jerusalem, Israel, Jerusalem, Israel; [2]1Endometriosis Center, Department of Obstetrics and Gynecology, Hadassah-Hebrew University Medical Centre, Jerusalem, Israel, Jerusalem, Israel
*Corresponding author.

Background: Endometriosis affects up to 10% of reproductive aged women and is associated with pelvic pain and infertility. While previous studies have shown an association between deep and ovarian endometriosis to reduced ovarian reserve, there is no data on the effect of superficial endometriosis on ovarian reserve markers.
Study Objective: To compare ovarian reserve markers of women with and without superficial endometriosis.
Design: A case control study.
Setting: A tertiary medical center.
Patients or Participants: The study group included women aged 18-40 with surgically and histopathology proven superficial endometriosis with no deep lesions or ovarian involvement. The control group included women with no known or suspected endometriosis. The control group was matched to the study group by age, BMI and parity. We excluded women with other known risk factors for ovarian failure and with other gynecological disorders.
Interventions: Participants completed a questionnaire with demographic, medical and gynecological data. Each patient underwent Anti-Mullerian Hormone (AMH) testing and an ultrasound to assess their Antral Follicular Count (AFC). AMH and AFC were then compared between groups.
Measurements and Main Results: A total of 124 women participated in the study. Of them, 50% (n=62) had surgically proven superficial endometriosis and 50% (n=62) were without known or suspected endometriosis. Mean AMH levels of women with and without superficial endometriosis was 3.0±2.8 ng/ml and 2.8± 1.9 ng/ml, respectively (p=0.71). AFC also did not differ between groups (women with superficial endometriosis: 12.0±6.6; women without endometriosis: 10.2± 5.0, p=0.15).
Conclusion: In our cohort, superficial endometriosis was not associated with diminished ovarian reserve. While further studies are needed, to date, it is unjustified to assess ovarian reserve for patients with superficial endometriosis.

Category: Endometriosis

SubCategory: Fibroids

9902 Single-Cell RNA Sequencing Reveals Macrophage-Fibroblast Transformation Mode in Endometriosis

Huang B, Wei Y, Yang R, Liang Y. The First affiliated Hospital, Sun Yat-sen University, Guangzhou, China*
*Corresponding author.

Study Objective: The prominent pathological characteristics of endometriosis (EMs) are presence of a large amount of dense fibrotic tissue and infiltration of massive macrophages around or in endometriotic lesions, which is one of the causes of endometriosis-associated pain, infertility, and other symptoms. In this study, single-cell sequencing analysis was conducted to obtain whole-genome information of cells of endometriotic lesions, paralesion tissue and normal endometrium.
Design: A total of 12 samples were collected from focal and adjacent tissues with EMs and normal endometrial tissues. After tissue cells were dissociated, single-cell sequencing was performed by Seurat analysis. Results

were further verified by immunohistochemistry, multiple immunofluorescence, and in vitro and in vivo experiments.
Setting: The consent form was signed before the operation and specimens were obtained during the operation.
Patients or Participants: Four patients with EMs and four patients with normal endometrium were included in the study.
Interventions: No intervention.
Measurements and Main Results: The results have identified 23 distinct cell populations, which were classified into 10 cell types according to marker gene expression. Among them, after cell subtype analysis of the highest proportion of fibroblasts (36%), 5 specific subtypes of fibroblasts were defined, and an inflammatory-associated fibroblast ($FABP4^+$ FIB) was found in the lesion. Our results suggest that FABP4 was co-expressed with macrophage to fibroblast transition (MFT) cells and was correlated with the severity of fibrosis. TGF-β1 treated with Smad3 could upregulate the expression of FABP4 and COL1A1(a fibroblast marker) of BMDMs, leading to promote MFT, whereas knocking out Smad3 and treatment with highly selective TGF-β1 inhibitor could inhibit MFT. Similarly, TGF-β1 has been validated in animal experiments to increase the number of $FABP4^+$ MFT cells and focal fibrosis in endometriotic lesions.
Conclusion: This study has revealed a novel mechanism of macrophage fibroblast transformation in fibrosis in EMs, which provides new ideas for further exploration of the fibrotic mechanism and the treatment in EMs.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

9906 Laparoscopic Robot Assisted Hysteropexy

Costa Rossette M,[1,] Alvarenga-Bezerra V,[1] Lottenberg CP,[2] Talans A,[1] de Cillo PEC,[1] Moretti-Marques R[2].* [1]*Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Brazil;* [2]*Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Please Select, Brazil*
*Corresponding author.

Study Objective: Demonstrate a step-by-step laparoscopic robot assisted hysteropexy
Design: Case report and an illustrative surgical video
Setting: The patient was positioned in a modified lithotomy and robotic assisted laparoscopy was performed using the Xi Intuitive platform. First trocar was inserted in the umbilical scar, three 8 mm robotic trocars and one 5 mm assistant trocar were positioned in line at the level of the umbilicus.
Patients or Participants: TG, a 48-year-old female who presents with difficulty to evacuate, tenesmus and dyschezia. She also referred dysmenorrhea, but no deep dyspareunia. Her physical exam showed a stage 3 vaginal apex prolapse. Her defecography MRI showed adenomyosis, deep endometriosis in the posterior pelvic compartment, hypotonic internal anal sphincter, tapering of the external anal sphincter and of the iliococcygeus muscle, indirect signs of weakness of the endopelvic fascia, perineal descent with weakness of the elevator plaque and dissinergic evacuatory patterns.
Interventions: The patient was submitted to a laparoscopic robot assisted hysteropexy. During the cavitary inventory, we found a normal sized uterus, multiple peritoneal endometriosis foci on the posterior cul de sac, ovarian fossa and appendix. The pelvic floor damage was also evident.
Measurements and Main Results: The procedure had no complications, and the patient had a good postoperative outcome, regarding endometriosis and pelvic organ prolapse symptoms.
Conclusion: Robot assisted laparoscopy promotes dexterity and a good anatomical visualization, which are important for high complex surgeries. Abdominal hysteropexy allows a satisfying correction of pelvic organs prolapse with fertility preservation.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Robotics

9926 Laparoscopic Robot Assisted Sacrocolpopexy

Lottenberg CP,[1,] Alvarenga-Bezerra V,[2] Costa Rossette M,[2] Dametto Giroud Joaquim H,[2] Queiroz PM,[2] Moretti-Marques R[1].* [1]*Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Please Select, Brazil;* [2]*Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Brazil*
*Corresponding author.

Study Objective: Demonstrate a laparoscopic robotic assisted sacrocolpopexy in a didactic manner, enhancing tricky anatomical regions
Design: Case report and a surgical video
Setting: The patient was positioned in a modified lithotomy and robotic assisted laparoscopy was performed using the Xi Intuitive platform. First trocar was inserted in the umbilical scar, three 8 mm robotic trocars and one 5 mm assistant trocar were positioned in line at the level of the umbilicus.
Patients or Participants: KBPP, a 46-year-old female with a past medical history of hypothyroidism and dyslipidemia presents with a feeling of a ball coming down her vagina and tenesmus. Her physical exam showed a vaginal vault prolapse and an enterocele.
Interventions: A laparoscopic robotic assisted sacrocolpopexy was indicated. During the cavitary inventory, the pelvic floor defect was evident, and no other abdominal pathologies were found.
Measurements and Main Results: We considered that the patient had an effective surgical treatment for her pelvic organ prolapse. However, on the fourth day after surgery, she developed mesentery volvulus, and was submitted to laparoscopy for its correction.
Conclusion: Robotic assisted laparoscopy can be an excellent option for sacrocolpopexy, since it allows better access of challenging anatomic regions, shorter learning curves and more comfortable intra corporeal suture. It offers good anatomical and functional results with low morbidity, however, complications can happen. Mesenteric volvulus is a rare life-threatening condition with few case reports in literature after minimally invasive sacrocolpopexy. Prompt recognition and emergency surgery are essential for a good outcome.

Category: Single-Port

SubCategory: Robotics

9933 Assessing the Surgical and Cosmetic Satisfaction of Patients Undergoing Robotic Single Port and Multiport Gynecological Surgery

Bagaria M,[*,1] Lim ES,[2] Duncan JM,[3] Mansour T,[3] Ranieri G,[3] Yi J[3].* [1]*Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ;* [2]*Mayo Clinic, Phoenix, AZ;* [3]*Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ*
*Corresponding author.

Study Objective: To study satisfaction of scar cosmesis and overall surgical experience of patients undergoing gynecologic single port (SP) and multiport (XI) robotic surgery.
Design: Prospective longitudinal study.
Setting: Tertiary academic institution.
Patients or Participants: All patients undergoing robotic benign gynecologic surgeries between September 2022 and March 2023 were included. Malignancy, BMI>40, and uteri >12 cm were excluded.
Interventions: Participants completed the surgical satisfaction survey at 6 weeks and POSAS (cosmetic satisfaction) survey at 6 weeks and 3 months after surgery.
Measurements and Main Results: 81 patients were enrolled. (13 SP,68 XI). Mean age/ BMI (SD) were 56.4 years(10.23)/ 24.3kg/m^2(3.50) and

38.8years(12.98)/24.8 kg/m^2 (5.41) respectively. The median umbilical port size(IQR) for SP was 30mm(25,30) and 8.0mm(8.0,8.0) for XI. At 6 weeks, 8/13 (61.5%) SP patients and 43/68 (63.2%) XI patients completed the satisfaction surgery. Surgical satisfaction was 100% in SP and 89.8% in XI group. 20.9% of patients in the XI group wished they had less scars.
At 6 weeks POSAS was completed by 7/13(53.8%) in SP group and 46/68 (67.6%) in XI group, at 3 months this was 5/13(38.4%) and 26/68(38.2%) respectively. Lesser POSAS values indicate closer resemblance to the normal skin. At 6 weeks, the median(IQR) for the scar color, stiffness and thickness for the SP were 3.0(0.0,75.0), 12.9(21.82), 14.1(21.13) and for the XI they were 88.5(51.0,100), 58.0(25.0,82.0), 62.0(27.0,83.0) respectively.
At 3 months the median (IQR) for the scar color, stiffness and thickness for the SP were 21.0(4.0, 75), 44.0(3.0, 50.0), 50.0(9.0, 75.0). For XI, these values were at 80.0(50.0,100.0), 50.0(9.0,72.0), 50.0(10.0,80.0).
Conclusion: Satisfaction following SP and XI robotic surgeries was high. Scar assessment worsened in the small sample of SP, but was overall low. XI scar assessment did not change over time but with higher scores overall. Larger sample size studies are needed to perform a comparative analysis between the two groups.

Category: Laparoscopy

SubCategory: Hysteroscopy

9938 Isthmocele and Bladder Endometriosis: A Case Report

De Martin L,[1] Rosas P,[1] Bianciotto A,[1] Martini G,[1] Baque L,[1] Marcos F,[1] Perez Vidal R[2]. [1]Gynecology, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina; [2]H Italiano, San justo, Buenos Aires, Argentina*
*Corresponding author.

Study Objective: To describe a clinical case of a patient with isthmocele and bladder endometriosis, to inform the results of the laparoscopic correction and to carry out a review of the literature.
Design: Demonstration of the laparoscopic technique with narrated video footage.
Setting: Litotomy position. Supine position.
Patients or Participants: Patient who presented hematuria, dysmenorrhea, dyspareunia, abdominal distension and secondary sterility.
Interventions: Laparoscopic treatment is important in women who are symptomatic, have thin endometrium, and desire a pregnancy. Key strategies are:
- Dissection of the vesicouterine pouch laterally to avoid entering the bladder wall.
- Transilumination with hysteroscopy.
- Cut the damage tissue.
- Suture.

Measurements and Main Results: An isthmocele is a pouch-like defect in the anterior wall of the uterine isthmus that occurs as a complication of a previous caesarean section. There is no universal definition or standard characterization indicating its location and size. Most authors and experts agree that the depth of the defect should be at least 2 mm.
Although it can be asymptomatic, isthmocele may generate gynecological and obstetric manifestations. It can cause SUA (post-menstrual spotting, heavy and prolonged bleeding, intermenstrual bleeding, and occasionally sinus bleeding), pelvic pain, dysmenorrhea, dyspareunia, and secondary infertility. Obstetric complications are: pregnancy scar and uterine rupture. The reported prevalence of this pathology varies from 19-84%, its suspicion is of great importance for its correct diagnosis, treatment and improvement of the patient's quality of life.
Conclusion: Surgical treatment of a uterine isthmocele is a good option in women who are symptomatic and infertile. Laparoscopic treatment guide by histeroscopy is a good option if residual myometrium is < 3 mm.

Category: Laparoscopy

SubCategory: Pelvic Pain

9939 Management of Complex Tubo-Ovarian Abscesses: A Stepwise Surgical Approach

Kumar K,[1] Freeman S,[2] Melchior M,[1] Liu B[1]. [1]Obstetrics and Gynecology, Unity Health - St. Joseph's Health Centre, Toronto, ON, Canada; [2]Obstetrics and Gynecology, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: This video aims to emphasize the significance of early intervention in the management of tubo-ovarian abscesses (TOAs) and to provide an organized approach for surgically managing them.
An estimated one in ten people with a uterus suffer from pelvic inflammatory disease (PID) during their reproductive years. Tubo-ovarian abscesses (TOA) are a late complication of PID that develop in 15 to 35% of hospitalized cases. TOAs can cause long term complications such as infertility, ectopic pregnancy, and chronic pelvic pain.
There is increasing evidence to support early surgical intervention in patients who do not demonstrate improvement after receiving conservative management. Recent studies have demonstrated lower blood loss, shorter operative time, and a four-fold higher subsequent pregnancy rate with early surgical intervention.
Gynecologists rarely operate on TOAs, which results in a lack of familiarity and expertise in this area, compounded by the technical difficulties associated with operating in the presence of pelvic infection. However, surgical intervention is necessary for approximately 25% of patients with TOA. This video reviews the role of surgery in TOA management and provides a structured surgical approach to managing complex TOAs.
Design: Case study. Patient was followed for 7 months.
Setting: OR.
Patients or Participants: One patient who presented with pelvic pain and bowel obstruction resulting from multiple complex TOAs.
Interventions: This patient received conservative management for treatment of TOA, followed by surgical intervention.
Measurements and Main Results: N/A.
Conclusion: N/A.

Category: Hysteroscopy

SubCategory: Oncology

9942 The Impact of Preoperative Hysteroscopy on Positive Cytology: A Retrospective Study Based on Mismatch Repair Proteins Status

Matot R,[1] Nassie DI,[1] Narkis B,[1] Yedidia R,[1] Geron Y,[1] Bor N,[1] Goldchmit C,[1] Jakobson-Setton A,[1] Eitan R,[1] Borovich A[2]. [1]Obstetrics and Gynecology, Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Israel; [2]Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: The aim of this study was to assess whether preoperative hysteroscopy increases dissemination of endometrial cancer cells with regards to Mismatch Repair Proteins (MMR) status in women with uterine malignancies.
Design: This retrospective study included all patients who were diagnosed with uterine malignancies and underwent surgical staging between 2016 and 2022. We compared positive cytology rates with regards to preliminary diagnostic methods.
Setting: A single, university-affiliated, tertiary medical center.
Patients or Participants: The study included 305 patients with uterine malignancies who underwent surgical staging, of which 259 had molecular assessment for MMR proteins. We compared the rate of positive cytology between women in whom tissue diagnosis was acquired by hysteroscopy (study group) to those initially diagnosed by uterine curettage or low-pressure endometrial suction sampling (control group).

Interventions: N/A.
Measurements and Main Results: During the trial period, 215 patients had cytology obtained, of whom 40 were diagnosed with positive cytology (19%). There was no significant difference in positive cytology rates between patients that underwent prior hysteroscopy and controls (11% vs 13%, p=0.1). Logistic regression adjusting for histological tumor type, stage and MMR deficiency showed no significant difference in positive cytology for patients that underwent hysteroscopy prior to surgery (aOR 0.493 CI95% 0.22-1.1). Of all surgically staged patients 60 (23%) were diagnosed with MMR deficiency. Adjusting for age, tumor type and specific MMR deficiency – in MLH1& PMS1 deficient tumors, hysteroscopy was shown to be a protective factor for positive cytology (aOR 0.44 CI95% 0.21-0.98).
Conclusion: This study suggests that preoperative hysteroscopy does not pose a risk factor for dissemination of endometrial cancer cells with regards to MMR protein status in women with uterine malignancies. Moreover, in MLH1& PMS1 protein deficient tumors, hysteroscopy was shown to be a protective factor for positive cytology. Further studies are needed to confirm this finding and investigate the underlying mechanisms before information can be used in clinical settings.

Category: Reproductive Medicine

SubCategory: Other

9943 Expectant Management of Tubal Pregnancies with Human Chorionic Gonadotropin up to 2000 Miu/Ml

Kugelman N,[*,1] Cohen B,[1] Yossef F,[2] Margieh N,[3] Regev N,[4] Shani U,[4] Bart Y[4]. [1]Obstetrics & Gynecology, Carmel Medical Center, Haifa, Israel; [2]Obstetrics & Gynecology, Bnai Zion Medical Center, Haifa, Israel; [3]Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel; [4]Obstetrics & Gynecology, Sheba Medical Center, Tel-Hashomer, Israel*
*Corresponding author.

Study Objective: To describe outcomes of EM versus methotrexate (MTX) treatment in tubal pregnancies with pretreatment hCG <2000 mIU/ml.
Design: Retrospective cohort between December 2009 and June 2021.
Setting: Two tertiary hospitals.
Patients or Participants: Women with confirmed tubal pregnancies and pretreatment hCG <2000 mIU/mL. Exclusion criteria were unrecorded pregnancy site, unconfirmed diagnosis, and surgical treatment upon diagnosis. 545 of 2114 (25.8%) women diagnosed with an ectopic pregnancy met our inclusion criteria. We compared women who underwent EM (N=201) with women who received MTX (N=344).
Interventions: Medical treatment consisted of a single-dose intra-muscular administration of MTX. Another MTX dose was given if Serum hCG levels decreased by less than 15% between days 4 to 7 post-treatment. EM was chosen only if a decrease in hCG levels was demonstrated.
Measurements and Main Results: The MTX group had higher pretreatment hCG and higher rates of yolk sac or embryo presence on ultrasound. Eventual surgical treatment rate was higher in the MTX group compared to the EM group [39 (11.3%) vs. 9 (4.5%), P=0.006], with no difference in the treatment failure rate or tubal rupture rate. In a subgroup analysis of women with pretreatment hCG between 1000-2000 mIU/ml, eventual surgical treatment, treatment failure, and tubal rupture rates did not differ between groups. Logistic regression analysis revealed that EM was independently associated with eventual surgical treatment (aOR 0.42, 95% CI 0.19-0.91), hCG levels <1000 mIU/ml (aOR 0.28, 95% CI 0.14-0.56), and endometriosis (aOR 9.20, 95% CI 3.55-23.81).
Conclusion: Expectant management of tubal pregnancies with pretreatment hCG levels <2000 mIU/ml and even between 1000-2000 mIU/ml and with a declining trend of hCG resulted in lower or comparable rates of eventual surgical treatment, when compared to MTX treatment. Treatment failure rates were also comparable between groups. These findings suggest that EM might serve as an alternative to medical treatment for a larger subset of patients than traditionally accepted.

Category: Laparoscopy

SubCategory: Oncology

9955 Laparoscopic Resection of Pararectal Space Mass

Velasquez J,[*,1] Mills A,[2] Saleh M,[1] Kolev V[1]. [1]Department of Obstetrics, Gynecology and Reproductive Science, The Icahn School of Medicine at Mount Sinai, New York, NY; [2]The Icahn School of Medicine at Mount Sinai, New York, NY*
*Corresponding author.

Study Objective: The objective of this surgical video is demonstration of a difficult, standard laparoscopic dissection of a mass within the pararectal space. Additionally, this video aims to review pertinent anatomy.
Design: N/A.
Setting: The patients included in this video underwent straight-stick laparoscopy. Patients were placed in lithotomy position. Four laparoscopic ports were utilized in the following locations: umbilicus, left lower quadrant, right lower quadrant and suprapubic.
Patients or Participants: The patient in this video is a 68-year-old with a history of stage IB high-grade serous ovarian cancer previously treated with cytoreductive surgery and adjuvant chemotherapy who presented with a.1.59cm x 0.7cm x 1.0cm left sided solid mass concerning for recurrence. The patient underwent diagnostic laparoscopy with resection of the pararectal mass, which was found to be continuous and inseparable from the vaginal cuff. The pararectal space was developed laparoscopically and the mass was noted to be closely adherent to the right ureter. With careful blunt and sharp dissection, the mass was able to be dissected away from both the ureter and pararectal space.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Thorough understanding of the pelvic sidewall anatomy is necessary for laparoscopic debulking of pelvic sidewall masses. Masses closely adherent to the ureter require dissection with careful blunt dissection and cautious utilization of thermal energy in order to avoid ureteral energy including thermal injuries. Since secondary cytoreductive surgery, the patient has remained no evidence of disease.

Category: Laparoscopy

SubCategory: Obese Patients

9956 Vascular Lesion with Veress Needle: Laparoscopic First Aid

Santos GC,[*,1] Ribeiro PAAG,[2] Nakamae MN,[1] Moura IW,[1] Ohara F,[2] Ribeiro HSAA[2]. [1]Obstetrics and Gynecology, Irmandade da Santa Casa de Misericórdia de São Paulo, São Paulo, São Paulo, Brazil; [2]Obstetrics and Gynecology, Irmandade da Santa Casa de Misericordia de Sao Paulo, Sao Paulo, Brazil*
*Corresponding author.

Study Objective: To report a case in which laparoscopic management was imperative to a life-threatening major vascular lesion.
Design: Video article of a major vascular lesion during laparoscopy first entry with Veress needle, reporting initial laparoscopic and subsequent laparotomic management.
Setting: Patient in supine decubitus with legs in a semi lithotomy position, under spinal and general anesthesia.
Patients or Participants: Female, 41 years old, BMI 42.1 kg/m^2, with history of three laparotomies, complaining of abnormal uterine bleeding, dysmenorrhea and dyspareunia and diagnosed with uterine fibroids and bilateral uterosacral ligament endometriosis by magnetic resonance imaging.
Interventions: The proposed treatment was total hysterectomy, bilateral salpingectomy and resection of endometriosis foci. There were multiple attempts to place the Veress needle, which led to a right common iliac

artery injury resulting in a life-threatening hemorrhage that demanded an immediate management, requiring laparoscopic suture.
Measurements and Main Results: After the diagnosis of the lesion, the first step was to isolate the injured vessel and control the major bleeding with metallic clips, which allowed a wider dissection. Observing that the lesion affected a major vessel of arterial origin, the ligation of the vessel through a laparoscopic knot became necessary, given the infeasibility of performing laparotomy in time to control the bleeding, because of the high BMI and the history of multiple laparotomies, which hampers laparotomic access. After controlling the bleeding, the vascular surgery team could perform a laparotomy, identifying the lesion of the right common iliac artery. It was necessary to exert a segment of the artery with primary anastomosis. The patient progressed well with no lower limb sequels and received two units of packed red blood cells.
Conclusion: Initial laparoscopic management for major vascular injury should be considered in patients with difficult laparotomic access due to the need for immediate hemorrhage control. Proper anatomic knowledge and laparoscopic skills are essential for an optimal disclosure.

Category: Fibroids

SubCategory: Robotics

9959 Use of Laparoscopic Ultrasound during Robotic Multiple Myomectomy

Nakamura A,[*,1] *Trevizo J,*[1] *Corinti M,*[1] *Tamura M,*[2] *Barison GAS*[3].
[1]*Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil;* [2]*Gynecology, Instituto Israelita de Ensino e Pesquisa Albert Einstein, Sao Paulo, Brazil;* [3]*Gynecology and Obstetrics, Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil*
*Corresponding author.

Study Objective: To demonstrate the usefulness and effectiveness of laparoscopic ultrasound to identify hidden intramural fibroids and diminish myometrial damage in a conservative surgical treatment of patient with parenthood desire.
Design: Case report illustrated with video.
Setting: Patient was placed in semi gynecological position, arms alongside the body and legs 80 grades abducted in adjustable leggings. Three robotic portals were placed on umbilical scar and both iliac fossae. One conventional portal was set in the right flank, for laparoscopic assistance.
Patients or Participants: A 40-year-old nulliparous patient reported irregular menstrual cycles. The patient was also undergoing treatment for infertility and had previous embryonic implantation without success. She came to myomectomy to improve implantation results. On physical examination, uterus was enlarged 3cm above pubic symphysis. MRI showed a 317cc uterus with multiples leiomyomas, the 4 main ones: intramural fibroid in the right lateral wall measuring 5.0cm; intramural with submucosal component in posterior wall measuring 3.2cm; fundal subserous fibroid measuring 3.5cm; and submucosal in anterior wall measuring 2.4cm.
Interventions: Patient was eligible for robotic-assisted myomectomy with the aid of intraoperative laparoscopic ultrasound to identify a bulky hidden intramural fibroid.
Measurements and Main Results: Surgery duration time was 2 hours. Patient was discharged on the next day, with no complaints. After 6 months, she underwent another embryo implantation, which was well succeeded. Pregnancy and cesarean delivery occurred without complications, with a healthy baby.
Conclusion: Robotic laparoscopic surgery has an advantage in multiple myomectomy surgeries, as it allows greater precision and ergonomic approach of different location fibroids, especially those on the posterior wall of the uterus. Moreover, use of intraoperative laparoscopic ultrasonography is an important and interesting surgical tool in the identification of remaining deep intramural fibroids. The correct identification of their topography diminishes myometrial damage during myomectomy.

Category: Endometriosis

SubCategory: Pelvic Pain

9960 Vaginal and Gut Microbiome and Genital Inflammation in Chronic Pelvic Pain and Endometriosis

Norton TJ,[*,1] *Jimenez N,*[2] *Bell E,*[3] *Valenti M,*[4] *Aminov M,*[5] *Farland LV,*[6] *Mahnert N,*[7] *Herbst-Kralovetz M*[8]. [1]*Obstetrics and Gynecology, University of Arizona College of Medicine, Phoenix, AZ;* [2]*Obstetrics and Gynecology, University of Arizona College of Medicine - Phoenix, Phoenix, AZ;* [3]*University of Arizona College of Nursing, Tucson, AZ;* [4]*Obstetrics and Gynecology, University of Arizona College of Medicine - Tucson, Tucson, AZ;* [5]*Basic Medical Sciences, University of Arizona College of Medicine - Phoenix, Phoenix, AZ;* [6]*Epidemiology and Biostatistics, University of Arizona Mel and Enid Zuckerman College of Public Health, Tucson, AZ;* [7]*Obstetrics and Gynecology, University of Arizona College of Medicine Phoenix, Phoenix, AZ;* [8]*Basic Medical Sciences, University of Arizona College of Medicine Phoenix, Phoenix, AZ*
*Corresponding author.

Study Objective: To investigate the vaginal and gut microbiomes, as well as the immunoproteomics of cervicovaginal lavage fluid, in patients with chronic pelvic pain and confirmed endometriosis (CPP-Endo), patients with chronic pelvic pain without endometriosis (CPP), and surgical control patients.
Design: Cross sectional.
Setting: Tertiary academic medical center.
Patients or Participants: Samples were collected from patients with chronic pelvic pain and pathology-confirmed endometriosis (N=35), patients with chronic pelvic pain without endometriosis (N=23) and surgical control patients (N=19). Patients with endometriosis but no chronic pelvic pain were excluded (N=4).
Interventions: N/A.
Measurements and Main Results: 16S rRNA sequencing was performed to profile the gut and vaginal microbiomes. CVL samples were collected, and a panel of soluble immune mediators were quantified by multiplex analysis. Statistical analysis was performed with SAS, R, MicrobiomeAnalyst, MetaboAnalyst, and Qiime2. Women with CPP, CPP-Endo, and surgical controls were found to have statistically significant differences in alpha-diversity at the species level in the gut microbiome. Within the CPP-Endo group, patients with peritoneal endometriosis implants showed taxonomic differences in vaginal microbial composition compared to patients without endometriosis and those with ovarian endometriosis. It was noted that patients with co-occurring abnormal uterine bleeding (AUB), despite disease groupings, had taxonomic differences in both gut and vaginal microbiomes. Global analysis of the immune profiles from CVLs revealed significant overlap between CPP and CPP-Endo compared to controls.
Conclusion: Analysis of the microbiome supports the association of gut and vaginal dysbiosis in women with CPP and CPP-Endo, though the clinical significance of observed differences needs to be investigated further. Patients with peritoneal endometriosis showed taxonomic differences compared to those with ovarian endometriosis or no endometriosis, suggesting vaginal microbiome variation based on site. AUB was also noted to demonstrate changes in microbial composition, so further study is needed to understand the effects of co-occurring conditions. Analysis of CVL immunoproteomics is ongoing.

Category: Endometriosis

SubCategory: Robotics

9972 Fibroids and Endometriosis: Two Surgical Challenges at Once to Female Reproductive Health

Trevizo J,[*,1] Dishchekenian F,[2] Ferraz L,[3] Maranhao D,[4] Tamura M,[5] Barison GAS[6]. [1]Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil; [2]Gynecology, Hospital Moriah, São Paulo, Brazil; [3]Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, São Paulo, Brazil; [4]I, São Paulo, Brazil; [5]Gynecology, Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil; [6]Gynecology and Obstetrics, Instituto Israelita de Ensino e Pesquisa Albert Einstein, São Paulo, Brazil*
*Corresponding author.

Study Objective: To demonstrate the challenge of preserving fertility in a complex concomitant robot-assisted myomectomy and deep endometriosis treatment.
Design: Case report with video illustration.
Setting: Patient was placed in a semi-gynecological position under general anesthesia, with arms alongside the body and legs abducted 80 degrees in adjustable stirrups. Three robotic portals were positioned: one in the umbilical scar for the optics, one on the right and one on the left flank. In addition, a conventional laparoscopic portal was positioned in the upper right flank.
Patients or Participants: 38-year-old patient presenting significant pelvic pain, incapacitating dysmenorrhea, and diarrhea during periods. Despite partial symptom improvement with the use of oral contraceptives and anti-inflammatories, patient referred impact of the pain in her daily activities. MRI showed uterine volume of 522.9 cm^3, lobulated uterus due to multiple leiomyomas and presence of two endometriomas on the left (0.5 and 1.7 cm). There were also thickened areas suggesting endometriosis in the following locations: retrocervical, retrovaginal, uterosacral ligament, round ligament, ovaries, rectum, and sigmoid, with a bowel loop bending due to fibro endometriotic process.
Interventions: Patient underwent robot-assisted myomectomy and deep endometriosis' treatment. Procedure started with retroperitoneal development and proper ureterolysis, allowing correct identification and safe excision of endometriosis lesions. Subsequently, myomectomy was performed. Rectosigmoidectomy with primary anastomosis and appendectomy were performed by the gastrointestinal surgery team.
Measurements and Main Results: Surgical duration was four hours, with minimal blood loss and no complications. Patient had a satisfactory postoperative clinical evolution and was discharged on the fifth postoperative day. Pathology report confirmed endometriosis nodules and leiomyomas.
Conclusion: Endometriosis and uterine fibroids are two benign gynecological conditions that can bring extremely challenging management when fertility preservation is desired. Our video demonstrates a multidisciplinary and efficient approach of an advanced case, with patient's reproductive status preservation due to an adequate and meticulously planned robotic surgical treatment.

Category: Laparoscopy

SubCategory: Other

9975 Readmission Following Methotrexate Treatment for Tubal Pregnancy

Bart Y,[*,1] Regev N,[1] Shani U,[1] Cohen B,[2] Yossef F,[3] Margieh N,[4] Kugelman N[2]. [1]Obstetrics & Gynecology, Sheba Medical Center, Tel-Hashomer, Israel; [2]Obstetrics & Gynecology, Carmel Medical Center, Haifa, Israel; [3]Obstetrics & Gynecology, Bnai Zion Medical Center, Haifa, Israel; [4]Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel*
*Corresponding author.

Study Objective: To identify the rate and risk factors for readmission following methotrexate (MTX) treatment for tubal pregnancy.
Design: A retrospective study undertaken in two tertiary medical centers, including all individuals with tubal pregnancy, between December 2009 and June 2021.
Setting: A retrospective study.
Patients or Participants: Cohorts of individuals with tubal pregnancy were compared according to the mode of management: expectant (n=240), medical (N=511), and surgical (N=708).
Interventions: Individuals with and without readmission following MTX treatment were compared.
Measurements and Main Results: Primary outcome was the readmission rate. Secondary outcomes included tubal rupture rate and the eventual need for surgical treatment.
Readmission following methotrexate treatment occurred in 224/511 patients (43.8%). Most readmissions were due to abdominal pain or suspicion of treatment failure. Readmitted individuals were more likely to have a history of pelvic inflammatory disease and pretreatment serum human chorionic gonadotropin >2,000 mIU/mL. Both factors remained significantly associated with higher readmission rates in a logistic regression analysis (adjusted OR 6.28, 95% CI 1.30-30.45, and adjusted OR 2.73, 95% CI 1.83-4.07, respectively) after adjustment for age, endometriosis, tubal pathology, abdominal pain, and presence of yolk sac or embryo at diagnosis. A dose-dependent association was observed between pretreatment serum human chorionic gonadotropin levels and readmission rate ($p<0.001$). Pretreatment human chorionic gonadotropin levels were also associated with tubal rupture and the eventual need for surgical treatment ($p<0.001$ for both). A prediction model using human chorionic gonadotropin was not sufficiently accurate to predict readmission risk.
Conclusion: Readmission following MTX treatment for tubal pregnancy was independently associated with previous PID and pretreatment serum hCG levels. The latter was also associated with surgical intervention rate.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Single-Port

9981 Single PORT Robotic Pelvic Floor Reconstruction Utilizing a Planned Colostomy Site

Deol Chauhan SK,[*,1] Duncan JM,[2] Mishra N,[1] Yi J[2]. [1]General Surgery, Mayo Clinic Arizona, Phoenix, AZ; [2]Department of Medical and Surgical Gynecology, Mayo Clinic, Phoenix, AZ*
*Corresponding author.

Study Objective: Describe a unique case of a patient with end stage rectal and vaginal prolapse who underwent single port robotic repair through a planned colostomy site.
Design: Case report.
Setting: Patient was positioned in lithotomy position, patient safety was ensured.
Patients or Participants: 63-year-old P2 who presented for evaluation of vaginal and rectal prolapse. She has a complicated history of anal cancer with resection causing significant sphincter injury and led to severe rectal prolapse and fecal incontinence. She had multiple rectal prolapse surgeries including perineal repair and ventral mesh rectopexy with no improvement. She also noted vaginal prolapse along with difficulty with bladder emptying. She had a history of a mesh sling, hysterectomy and "bladder lift." Physical exam noted severe rectal prolapse and stage 2 vaginal prolapse.
Interventions: Single port access trocar was placed intra-abdominally through left mid rectus colostomy site and the SP robot was docked. Existing mesh was used to support the vaginal apex in a modified sacrocolpopexy. Permanent monofilament suture was used to attach the mesh to the

vaginal apex and posterior vaginal wall. Using nonabsorbable barbed suture, modified closure of the enterocele was performed, utilizing the mesh along the right side, and the uterosacral ligament on the left. The mesh was completely retroperitonealized. The rectum and the sigmoid colon were then brought up to the abdomen on tension and distal colon was exteriorized. Loop colostomy was then matured. A perineal Thiersch stitch was placed around the anal canal.
Measurements and Main Results: Rectal and vaginal prolapse symptoms resolved immediately, with improvement in her bladder emptying symptoms as well.
Conclusion: Single port robotic pelvic reconstruction is feasible through colostomy access when this is applicable to the patient scenario avoiding the need for additional incisions. Multidisciplinary care may warrant discussion to consider the best approach for the patient's unique clinical presentation.

Category: Gender Reassignment Surgery

SubCategory: Natural Orifice Surgery

9984 Vaginal Natural Orifice Transluminal Endoscopic Surgery (vNOTES) for Gender Affirmation

Mohr-Sasson A,[*,1] *Hui M,*[1] *Bonilla Moreno M,*[2] *Montealegre A*[1]. [1]*Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX;* [2]*Department of Obstetrics, Gynecology & Reproductive Science, The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: The alignment process of transition from female to male in transgenders, usually includes medical treatment as well as surgical interventions. The prolonged exposure of the vaginal mucosa to testosterone as well as nulliparity might be challenging for surgeries performed by vaginal approach. We aim to report our experience using vaginal assisted NOTES hysterectomy in this population.
Design: Case series observational study.
Setting: Single tertiary medical center.
Patients or Participants: All patients undergoing hysterectomy with bilateral salpingo-oophorectomy by vNOTES for gender affirmation between February 2022 to April 2023.
Interventions: vNOTES approach was used to perform hysterectomy with bilateral salpingo-oophorectomy. Primary outcome was defined as compound complication rate including intraoperative (organ damage, bleeding, conversion to alternative approach) and post-operative (urinary tract infections, surgical site infection and vascular complications).
Measurements and Main Results: Patients' demographic, medical history, obstetrical and gynecological history, operative and post-operative follow up (24 hours post-surgery) were collected from the electronic medical files. Pain at post-operative follow up was evaluated using visual analog scores, which ranges from 0 (no pain) to 10 (worst pain possible). The study population included 8 transgender men, all of whom were nulliparous and had undergone testosterone treatment for more than a year. Median age at surgery was 24(IQR 22-32) years and median BMI was 30 (IQR 25-35) kg/m^2. Mean operative time of the surgery was 111 (IQR 91-143) min and none required converting from vNOTES to an alternative approach. No extensive bleeding or organ damage was reported. For one patient, there was one small vaginal laceration requiring suture. All but one patient complicated by post-operative urinary retention, were discharged the same day. On post-operative follow up, median pain score was 3 (range 1-5).
Conclusion: vNOTES approach is a feasible option for gender affirming hysterectomy with low complication rate and low associated pain scores.

Category: Hysteroscopy

SubCategory: Other

9992 Let's Cut the Septum Off!

Mori KH,[*,1] *Kajiura BD,*[2] *Harfuch BR,*[2] *De Oliveira Carniello M,*[2] *Montevechi MS*[3]. [1]*Obstetrics and Gynecology, Irmandade da Santa Casa de Misericordia de Sao Paulo, Sao Paulo, Brazil;* [2]*Sao Paulo, Brazil;* [3]*Departamento de Tocoginecologia, University of Campinas, Campinas, Brazil*
*Corresponding author.

Study Objective: Congenital malformation is diagnosed in 3-4% of women, and 35% of the cases are septate uterus. Septum resection can be performed by cold scissors, conventional resectoscope, and mini-resectoscope. The objective of this video is to demonstrate the treatment of a complete septate uterus with septate cervix, and vaginal septum with Bettocchi Set and 5-Fr Scissors.
Design: Sequential demonstration of a complete septate uterus treated by Hysteroscopy with Bettocchi Set.
Setting: Hysteroscopic approach with Bettochi set and 5-Fr scissors for the uterine septum and cervical septum. The vaginal septum approach was with cold scissors and electrocautery.
Patients or Participants: 31-year-old woman with painful intercourse since the first sexual intercourse. Magnetic Resonance Imaging showed a complete septate uterus, with septate cervix, and vaginal septum on the upper third.
Interventions: Hysteroscopy was performed using the Bettocchi Set. Uterine cavity evaluation was first done through the left cervical canal. The uterine septum was then cut close to the internal orifice to allow visualization of the right side of the uterine cavity. The septum was cut cranially to the uterine fundus with 5-Fr scissors. Cold scissors and electrocautery were used to cut the vaginal septum. After 40 days, a second-look hysteroscopy with Bettocchi Set was done to evaluate synechiae formation. The uterine cavity was perfectly formed, without any synechiae. The cervix septum was then cut from the internal to the external orifice with Bettocchi Set and 5-Fr Scissors, and completed with cold scissors on the external orifice.
Measurements and Main Results: The surgery was safely performed with minimal bleeding. Patient's complaining of painful intercourse were completely gone after the surgery.
Conclusion: Resection of the uterine, cervical, and vaginal septum with Bettocchi Set and Scissors showed good results in a case of a complete septate uterus with septate cervix and longitudinal vaginal septum.

Category: Endometriosis

SubCategory: Obese Patients

10006 A Complexity Cascade: Vascular Injury Repair in a Morbidly Obese Patient with Endometriosis and Castleman's Disease

Encalada Soto D,[*,1] *Kumar A,*[2] *Cope A*[1]. [1]*Minimally Invasive Gynecologic Surgery, Mayo Clinic, Rochester, MN;* [2]*Gynecologic Oncology, Mayo Clinic, Rochester, MN*
*Corresponding author.

Study Objective: To demonstrate the occurrence and repair of an internal iliac vein injury in a medically complex patient due to morbid obesity, endometriosis, and Castleman's disease.
Design: Video case report.
Setting: Academic tertiary hospital.
Patients or Participants: 35-year-old female with chronic right lower quadrant pelvic pain, fibroid uterus, right ovarian cyst desiring permanent sterilization. Medical history included Castleman's disease, BMI of 58, type 1 diabetes, and asthma. Previous surgeries: diagnostic laparoscopy converted to open with periiliac lymph node dissection and resection of a sigmoid colon mass consistent with Castleman's disease. A diagnostic laparoscopy for suspected right ovarian torsion findings of right adnexal mass with no torsion and solid consistency. Procedure was concluded but pain symptoms persisted post operatively.
Interventions: Robotic-assisted excision of endometriosis, right salpingo-ophorectomy, left salpingectomy, cystoscopy with ureteral indocyanine green injection.
Measurements and Main Results: A right adnexal mass with retroperitonealized appearance and densely adherent to the pelvic sidewall was found. The infundibulopelvic ligament was ligated, retroperitoneal dissection was performed, and extensive ureterolysis due to the severe nature of the patient's fibrosis. During the procedure, injury occurred to the internal iliac vein, which was successfully repaired using a 4-0 Prolene figure-of-eight suture. Pressure was dropped and no extra bleeding was found. Left salpingectomy was completed. Case concluded.
Conclusion: The case highlights the need for a coordinated and multidisciplinary approach in the care of patients with multiple comorbidities, including morbid obesity, endometriosis, and Castleman's disease. Effective intraoperative communication and collaboration are critical in managing life-threatening surgical complications.

Category: Natural Orifice Surgery

SubCategory: Endometriosis

10013 Trans-Anal Specimen Extraction Following Myomectomy and Excision of Rectosigmoid Endometriosis

Dawodu O,[*,1] Seaman SJ,[1] Gedeon M,[2] Arora C*[3]. [1]*OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY;* [2]*Surgery, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY;* [3]*Department of Obstetrics and Gynecology, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To illustrate the use of transanal natural orifice specimen extraction in gynecologic surgery.
Design: Case report.
Setting: Large academic center.
Patients or Participants: 30yo G0 with history of pelvic pain and infertility in the setting of fibroids, left hydrosalpinx diagnosed on HSG and stage IV endometriosis with an obliterated posterior cul-de-sac noted on a previous diagnostic laparoscopy. She was counseled for a complete surgical resection, bilateral salpingectomy and myomectomy.
Interventions: The patient underwent a robotic-assisted laparoscopic myomectomy, extensive endometriosis excision, bilateral salpingectomy, discoid resection of bowel deep infiltrative endometriosis and sigmoidoscopy.
Key surgical steps are illustrated including:
1. Development of the retrorectal space.
2. Dissection of the endometriosis nodule off the posterior uterus and vagina.
3. Entry into the rectovaginal space.
4. Circumferential excision of nodule off the anterior rectum.
5. Placement of Alexis retractor into the anus.
6. Specimen extraction through open rectal lumen.
7. Full thickness rectal lumen closure in multiple layers.
Measurements and Main Results: Patient discharged home on POD2 and had an uncomplicated postoperative course. At her 8 weeks postoperative visit, she was recovering well with complete resolution of pelvic pain symptoms and normal bowel function.
Conclusion: Transanal specimen extraction is feasible and effective during rectosigmoid deep nodule excision.

Category: Laparoscopy

SubCategory: Reproductive Medicine

10021 Combined Robotic and Hysteroscopic Repair of Isthmocele Containing Retained Products of Conception

Dutcher D,[*,1] Hicks S,[1] Hoppe M,[1] Whitten S,[2] Falk K*[1]. [1]*University of Nevada Reno School of Medicine, Reno, NV;* [2]*Nevada Center for Reproductive Medicine, Reno, NV*
*Corresponding author.

Study Objective: To describe the surgical management and fertility outcomes in a case of retained products of conception (RPOC) within an isthmocele.
Design: This is an IRB-exempt case report. Systematic literature review found no other reports describing post frozen embryo transfer (FET) RPOC in an isthmocele with postoperative fertility follow up.
Setting: Academic tertiary referral center. Patient positioned in dorsal lithotomy with Trendelenburg.
Patients or Participants: A 31-year-old G1P1001 with a history of peritoneal factor infertility and prior low transverse cesarean section. Second pregnancy was achieved via FET. At 6 weeks, ultrasound confirmed missed abortion, which was treated with misoprostol, resulting in down-trending bHCG but persistent vaginal bleeding. Ultrasound showed RPOC in the anterior uterine segment and MRI confirmed a $5.4 \times 6.0 \times 5.8$ cm heterogeneous mass within the cesarean scar defect.
Interventions: After failed methotrexate treatment, with consideration for preserving fertility, the patient opted for minimally invasive evacuation of RPOC and isthmoplasty. Surgical resection began hysteroscopically with laparoscopic guidance, where RPOC were removed using the MyoSure. Robotically, using hysteroscopic transillumination to delineate the supravesical isthmocele borders, the defect was excised to healthy margins. The endometrium was then closed using a 2-0 Monocryl barbed suture, and myometrium closed using 2-0 PDS unidirectional barbed suture in two layers. The patient was discharged home same day with an uncomplicated recovery.
Measurements and Main Results: The patient was able to conceive spontaneously 13 weeks post-op, resulting in an intrauterine pregnancy. Patient underwent a repeat low transverse cesarean section at 37 weeks' gestation to a healthy newborn without complications.
Conclusion: This is the first reported case of combined excision of RPOC within an isthmocele and isthmoplasty after FET with postoperative spontaneous pregnancy.

Category: Hysteroscopy

SubCategory: Other

10024 Hysteroscopic Resection of Lipoleiomyoma

Boms HC,[*,1] Lutterloh AC,[2] Hsu R,[1] Shetty T,[1] Winer I,[3] Berman J*[1]. [1]*Obstetrics and Gynecology, Wayne State University/Detroit Medical Center, Detroit, MI;* [2]*Obstetrics and Gynecology, Wayne State University School of Medicine, Detroit, MI;* [3]*Obstetrics and Gynecology, Wayne State University, Detroit, MI*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate the use of operative hysteroscopy for resection of Lipoleiomyoma.
Design: N/A.
Setting: Academic Medical Center - The patient was a 26yo G2P0111 with a history of Wilms tumor and left ovarian fibrosarcoma who presented to the ED for irregular vaginal bleeding with associated increasing right lower quadrant pain. Transvaginal ultrasound demonstrated an incidental finding of an intramural mildly vascular echogenic myometrial mass most consistent with a lipoleiomyoma, which was consistent with the findings of a subsequent MRI. Due to history of two malignancies and desire for future fertility, the patient was taken to the OR for hysteroscopic resection of the lipoleiomyoma.
Patients or Participants: N/A.
Interventions: Operative hysteroscopy with removal of lipoleiomyoma.
Measurements and Main Results: N/A.
Conclusion: Lipoleiomyomas are benign tumors with a prevalence of 0.03 to 0.2%, and few cases are reported in scientific literature. According to a systematic literature review conducted in 2022, only 16% of documented lipoleiomyoma resections are performed through myomectomy or simple excision, while 77% are removed via total hysterectomy. We propose that operative hysteroscopy should be considered as a safe and effective surgical intervention for excision of uterine lipoleiomyoma, that accounts for future fertility goals. We present this video aiming to enhance the understanding of surgical techniques associated with management of lipoleiomyoma.

Category: Hysteroscopy

SubCategory: Basic Science/Education

10032 Surgical Pearls for Optimizing Hysteroscopic Mechanical Tissue Morcellation

Carlson S, Frazzini P. Minimally Invasive Gynecologic Surgery, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: To demonstrate recommendations for effective and efficient use of hysteroscopic mechanical morcellators for the management of intrauterine pathology.
Design: Educational video illustrating surgical technique recommendations to optimize efficiency of mechanical morcellators. Photography and video consents were obtained.
Setting: Multi-specialty academic medical center in the United States.
Patients or Participants: Patients undergoing operative hysteroscopic procedure.
Interventions: Operative hysteroscopy with mechanical tissue morcellators.
Measurements and Main Results: N/A.
Conclusion: Understanding all aspects of hysteroscopes and hysteroscopic mechanical tissue morcellators allows surgeons to operate more safely and efficiently to optimize management of intrauterine pathology, improve patient outcomes and to utilize equipment to its full potential to reduce operating room waste.

Category: Hysteroscopy

SubCategory: Other

10044 Financial Implications of Offering Office Hysteroscopy in a Single Hospital-Based Gynecology Practice

Gruttadauria M, Loring M. Department of Gynecology, Virginia Mason Franciscan Health, Seattle, WA*
*Corresponding author.

Study Objective: To discuss the financial implications of beginning an office hysteroscopy practice at a single hospital-based gynecology group.
Design: Retrospective cohort study.
Setting: Hospital-based gynecology-only practice with an FMIGS fellowship.
Patients or Participants: Data from patients who underwent in-office hysteroscopy between August 2022-March 2023 was collected. The cost of hysteroscopy cases that were completed in the hospital operating room during this same time-frame was provided by the hospital billing department.
Interventions: N/A.
Measurements and Main Results: 69 patients underwent office hysteroscopy between July 25, 2022, and March 6, 2023, with 5 providers. Based upon the billed CPT codes, 62.3% of procedures were performed for endometrial polyps, 21.7% for difficult IUD removals, 8.7% were diagnostic only and 7.2% for lysis of adhesions. Performing office hysteroscopy costs approximately $700 per procedure. The average reimbursements ranged from $1,843.00-$7666 (average $5,802), depending on patients' insurance provider. In comparison, hysteroscopies which were performed at the same hospital but in the operating room cost upwards of $5000 per procedure, with an average reimbursement of $8,068. Office hysteroscopy reduced health care costs by ~$4300/procedure, while increasing overall profit by ~$2,000/procedure.
Conclusion: In the setting of increasing financial strain within healthcare systems, optimizing the efficient use of hospital resources is imperative to the growth and success of gynecology practices. In this hospital-based gynecology practice, office hysteroscopies decrease the overall cost to the healthcare system while increasing overall profit, when performed on appropriate patients. This also has the potential to improve OR utilization for more complex cases. More analysis from other practice models needs to be collected to see if these financial benefits are also seen in office-based and private practices.

Category: Natural Orifice Surgery

SubCategory: Laparoscopy

10061 vNOTES Sentinel Lymph Node Dissection for Gynecologic Malignancies

Burnett AF,[1] Huber DE,[2] Filho LB,[3] Chuang L,[4] Baekelandt JF[5].*
[1]Obstetrics and Gynecology, University of Arkansas for Medical Sciences, Little Rock, AR; [2]Gynaecology Service, Valais Hospital, Sion, Switzerland; [3]Gynecologic Oncology, A.C.Camargo Cancer Center, Sao Paulo, Brazil; [4]Gynecologic Oncology, Nuvance Health, Danbury, CT; [5]Gynecologic Oncology, Imelda Hospital, Bonheiden, Belgium
*Corresponding author.

Study Objective: To determine feasibility of vNOTES approach to Sentinel pelvic lymph nodes.
Design: Retrospective review of multiple surgeons' experience with vNOTES Sentinel lymph node removal.
Setting: Transvaginal laparoscopic entry into the paravesical space for lymph node evaluation and removal.
Patients or Participants: Women with gynecologic malignancies who were candidates for sentinel lymph node removal.
Interventions: The paravesical space was entered through a single midline infravesical or bilateral lateral incisions in the vaginal fornices after injecting the cervix with Indocyanine Green (ICG). A VPath retractor was placed into this space and insufflation of the retroperitoneal was performed. Sentinel lymph nodes were identified bilaterally using near-infrared light followed by laparoscopic removal of these nodes.
Measurements and Main Results: A total of 58 women with gynecologic cancer (cervix cancer – 4, endometrial hyperplasia or uterine cancer – 54) underwent bilateral sentinel lymph node removal by this technique. In 33 patients the midline approach was used; 25 had the lateral approach used.

All patients also underwent vNOTES hysterectomy and bilateral salpingo-oophorectomy except for the cervical cancer patients. The mean age was 67.3 years (35-89) and mean BMI was 27.2 kg/m^2(16-48). The average total operative time was 126 minutes (64-270), and the mean estimated blood loss was 98 mL (20-400). 55 patients had negative bilateral sentinel lymph nodes; 2 patients had isolated tumor cells in the Sentinel nodes; and 1 patient had macroscopically positive Sentinel nodes. There were two complications directly attributable to the sentinel lymph node dissection: 1 patient had a transient adductor paresis that resolved within three days, 1 patient had transection of an obturator nerve without sequelae.
Conclusion: This study demonstrates the feasibility of the vNOTES approach to identify and remove sentinel lymph nodes in gynecologic malignancies. This technique allows complete evaluation of the obturator space and the entire pelvic lymph node region.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Other

10066 Identifying Surgical Waste during Midurethral Slings for the Treatment of Stress Urinary Incontinence

Ashmore S,[*,1] Nguyen HH,[1] Das D,[1] Brown O,[1] Lewicky-Gaupp C,[2] Bretschneider CE,[1] Kenton K,[2] Collins S,[2] Mueller M,[2] Geynsiman-Tan J[1]. [1]Division of Female Pelvic Medicine and Reconstructive Surgery, Northwestern Medicine, Chicago, IL; [2]Section of Urogynecology and Reconstructive Pelvic Surgery, University of Chicago, Chicago, IL*
*Corresponding author.

Study Objective: The healthcare industry accounts for 9.8% of the US greenhouse gas emissions with operating rooms being key contributors. Our objective was to identify surgical waste during midurethral slings (MUS) to improve sustainability.
Design: A waste audit was performed during 20 isolated retropubic MUS.
Setting: Our study was performed at a tertiary care center between November 2022 and April 2023. Surgeries were performed by 7 urogynecologists. Disposable and non-disposable items were pulled ahead of time in either a prepicked surgical pack or tray. The surgical pack consisted of disposable items for vaginal minor procedures, which surgeons were not allowed to modify. Non-disposable instruments were included in a customized MUS surgical tray.
Patients or Participants: N/A.
Interventions: During the waste audits, used and added items were documented. All disposable material was weighed after the completion of each procedure to calculate the amount of waste generated. The utilization rate of each item was calculated after 20 waste audits with a goal of creating a custom MUS surgical pack and updating our MUS surgical tray to include only items and instruments with >20% utilization rate.
Measurements and Main Results: 10 out of 21 non-disposable instruments had a utilization rate ≤20%, and no added instruments had a utilization rate >20%. A re-sterilization cost for these underutilized instruments is estimated to be $6.12 per isolated MUS. Out of 26 disposable items, 6 had a utilization rate ≤20%. 18 non-disposable items were added during surgery, and 15 of these had a utilization rate >20%. Mean weight of surgical waste per case was 5.65 kg (±1.10).
Conclusion: We identified several opportunities to reduce waste at the time of MUS. At a rate of 300 slings per year, a PDSA audit such as this can reduce a significant amount of disposed plastic and healthcare costs. Our study highlights a method for institutions to implement waste audits to improve sustainability.

Category: Robotics

SubCategory: Basic Science/Education

10087 Cross Sectional Survey Study of Ob/Gyn Residents' Graduated Experience with Robotic Surgery

Snyder AE,[*,1] Farmer L,[2] Caraher E,[3] Cheeks M,[4] Correa J,[5] Parra NS,[6] Wainger JJ,[7] Yakubu A,[8] Buery-Joyner S[1]. [1]Obstetrics and Gynecology, Inova Fairfax Medical Campus, Falls Church, VA; [2]Obstetrics and Gynecology, Duke University Hospital, Durham, NC; [3]Obstetrics and Gynecology, New York- Presbyterian Hospital Brooklyn Methodist, Brooklyn, NY; [4]Obstetrics and Gynecology, Northwestern University, Chicago, IL; [5]Obstetrics and Gynecology, University of California San Francisco, San Francisco, CA; [6]OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY; [7]Gynecology and Obstetrics, Johns Hopkins Hospital, Baltimore, MD; [8]Obstetrics and Gynecology, Virginia Commonwealth University, Richmond, VA*
*Corresponding author.

Study Objective: Ob/Gyn resident experience with robotic gynecologic surgery has been evaluated at time of graduation, but no specific surgical procedures were identified to differentiate the experiences of residents at each level. This study proposes to determine which factors are correlated with more hands-on robotic surgery experience and resident satisfaction.
Design: An IRB-approved, 15-question survey was distributed electronically. 98 responses were received for a rate of 44%. Linear regression and ANOVA statistical analysis were performed.
Setting: Eight Ob/Gyn residency programs in the US.
Patients or Participants: Current Ob/Gyn resident physicians.
Interventions: Survey distribution.
Measurements and Main Results: The majority of respondents were satisfied with their robotic surgery experience (RSE). All respondents reported experience with uterine manipulation or bedside assisting by PGY2. Earliest experience performing hysterectomy was most common in PGY2 or PGY3.
76% of PGY3 or PGY4 residents report operating on the console for some or all of the surgery with 69% having participated in greater than 20 robotic surgery cases. Respondents report RSE with attending gynecologic oncologists (97%), MIGS (87%), Urogynecologists (56%) and generalists (38%), though only exposure to MIGS faculty is significantly associated with a high number of RSE (p=0.0221).
Overall satisfaction with RSE increased significantly with higher level of participation (p<0.0001), particularly operating at the console some or most of the surgery; longitudinal experiences with hysterectomy, myomectomy and salpingectomy/oophorectomy (p<0.05); but not with bedside assisting or vaginal cuff closure. Factors most limiting sitting at the robotic console included time constraints, lack of first assists, case complexity, and attending comfort.
Conclusion: Ob/Gyn resident satisfaction with training is significantly related to level and duration of hands-on participation. MIGS faculty contribute to more resident experience, and limiting factors include time constraints, case complexity and lack of first assists. These results can provide a framework for achieving resident autonomy in robotic surgery.

Category: Pelvic Pain

SubCategory: Urogyn/Pelvic Floor Disorders

10090 Adnexal Herniation through the Pelvic Floor

Horton T, Palin HS, El Nashar S. Medical and Surgical Gynecology, Mayo Clinic Florida, Jacksonville, FL*
*Corresponding author.

Study Objective: To demonstrate a rare case of herniated adnexa through the pelvic floor and review its clinical implications and as a cause of pelvic pain.
Design: N/A.
Setting: Scheduled procedure in the operating room done via conventional laparoscopy in the dorsal lithotomy position.
Patients or Participants: Single patient.
Interventions: Laparoscopic left salpingo-oophorectomy and peritoneal excision.
Measurements and Main Results: N/A.
Conclusion: Pelvic floor hernias are rare, but should be considered on the differential diagnosis for a patient with otherwise unexplained pelvic pain. Literature is scarce regarding the optimal treatment modality. We opted for a conservative approach with removal of the herniated structures (adnexa) and excision of the peritoneal window identified at the time of surgery. Our patient reported improvement in her pain at follow up visits.

Category: Research

SubCategory: Laparoscopy

10095 Factors Associated with Racial Disparities in Postoperative Complications Following Hysterectomy

Richardson DH,[*,1] Liu Y,[1] Lim CS,[2] As-Sanie S,[2] Morgan DM,[3] Whitmore G,[4] Till SR[2]. [1]Obstetrics and Gynecology, University of Michigan, Ann Arbor, MI; [2]Obstetrics and Gynecology, Minimally Invasive Surgery, University of Michigan, Ann Arbor, MI; [3]Obstetrics and Gynecology, Urogynecology, University of Michigan, Ann Arbor, MI; [4]Minimally Invasive Gynecologic Surgery, University of Colorado Hospital, Denver, CO*
*Corresponding author.

Study Objective: To evaluate clinical, perioperative, surgeon, and hospital-level factors that are associated with well-documented racial disparities in postoperative complications following hysterectomy for benign indications.
Design: Retrospective cohort study.
Setting: Michigan Surgical Quality Collaborative.
Patients or Participants: Black and White patients undergoing hysterectomy from January 2015 to December 2018.
Interventions: Hysterectomy for benign indications.
Measurements and Main Results: A total of 20,075 patients underwent hysterectomy during the study period, of whom 3,468 (17.3%) identified as Black and 16,607 (82.7%) identified as White. The groups differed across multiple factors including BMI, ASA class, preoperative anemia, surgical indication, and uterine weight. With regards to perioperative factors, Black patients were less likely to undergo surgery via minimally invasive approach across every uterine weight category, less to likely to have surgery with a high-volume surgeon, had higher estimated blood loss, greater utilization of hemostatic agents, and longer operative time. However, Black patients were more likely to receive an appropriate preoperative work up, appropriate abdominal prep, VTE prophylaxis, preferred preoperative antibiotics, and intraoperative warming. Black patients were more likely to have any major postoperative complication (8.7% vs 4.0%, p<.001), which included deep/organ space surgical site infection, sepsis, blood transfusion, VTE, cardiovascular complication, pneumonia, and readmission. After adjusting for morbid obesity, ASA class, preoperative anemia, uterine weight, operative time, minimally invasive approach, surgeon volume, insurance type, teaching hospital status, preoperative antibiotics, and use of hemostatic agents in multivariable logistic regression, Black patients were more likely to experience a major postoperative complication (aOR 1.35, 95%CI 1.13-1.6, P<.001) compared to their White peers.
Conclusion: Racial disparities in postoperative complication rates persist even after accounting for known clinical risk factors and perioperative quality consensus guidelines. Potentially modifiable factors that may help to reduce disparities in postoperative complications include maximizing utilization of minimally invasive surgical approach, referral to high volume gynecologic surgeons, correcting preoperative anemia, and minimizing use of hemostatic agents.

Category: Adenomyosis

SubCategory: Adenomyosis

10099 ASP5354 is a novel near-infrared fluorescence (NIR-F) imaging agent under development

Checca V. Oxford Pharmagenesis, Newtown, PA*
*Corresponding author.

Study Objective: ASP5354 is a novel near-infrared fluorescence (NIR-F) imaging agent under development for intraoperative ureter visualization in patients undergoing minimally invasive and open abdominopelvic surgeries. Likert scales are psychometric questionnaires commonly used to scale survey responses in research. In this study, surgeons recognized and identified the ureters in images from abdominopelvic surgeries using ASP5354 and rated the item "How conspicuous is the ureter?" with a 5-point Likert scale from 1=none (not self-evident) to 5=excellent (extremely self-evident). Inter-rater reliability at baseline and intra-rater reliability after 1 week were assessed.
Design: Retrospective validation study.
Setting: Thirteen surgeon raters with ≥3 years of experience in abdominopelvic surgery and without red/green color blindness were trained to use the Likert scale.
Patients or Participants: Seventy-two color images (36 pairs) were obtained from the phase 2 study (NCT04238481) in which adults undergoing abdominopelvic surgery received single doses of ASP5354. Image pairs showed the same anatomical area containing the ureters viewed with NIR-F illumination ("signal") and white light ("no signal"). Images were taken at the beginning (0−30 min after administering ASP5354, n=18 pairs), middle (between 30 min post-ASP5354 and end of surgery, n=13 pairs), and end of surgery (n=5 pairs). Images were displayed for 30 seconds and ratings were collected.
Interventions: N/A.
Measurements and Main Results: Intraclass correlation coefficients (ICC) were used to evaluate inter-rater reliability (based on surgeons' ratings at baseline) and intra-rater reliability (based on consistency between baseline and retesting 1 week later). ICC cut-off values were ≥0.70 for inter-rater and ≥0.80 for intra-rater reliability. Our study found good inter-rater (ICC=0.7; 95% confidence interval [CI]=0.7, 0.8) and intra-rater reliability (0.8; 95% CI=0.8, 0.8).
Conclusion: Surgeons using the 5-point Likert scale for assessing ureter conspicuity in patients who received ASP5354 during abdominopelvic surgery reached statistically significant levels of inter- and intra-rater reliability as required by FDA standards.

Category: Endometriosis

SubCategory: Robotics

10103 CO2 Laser Vaporization of Ovarian Endometrioma

Lowe C,[*,1] Robbins J,[2] Ocampo JE[2]. [1]Obstetrics and Gynecology, Kaiser Permanente San Francisco, San Francisco, CA; [2]OB/GYN, Kaiser Permanente, South San Francisco, South San Francisco, CA*
*Corresponding author.

Study Objective: In this video, we demonstrate the CO2 fiber laser vaporization technique for the surgical treatment of ovarian endometriomas, which presents a viable alternative surgical approach that may better protect ovarian reserve.
Design: N/A.
Setting: The patient was brought to the operating room and placed in dorsal lithotomy position.
Patients or Participants: This patient is a 35-year-old who presented with pelvic pain, dyspareunia, and dyschezia secondary to endometriosis, seeking fertility-preservation surgery for treatment of endometriosis and bilateral ovarian endometriomas.
Interventions: The patient was scheduled for robotic-assisted endometriosis resection and CO2 fiber laser vaporization of ovarian endometriomas.
Measurements and Main Results: N/A.
Conclusion: In conclusion, this video presents a case of CO2 laser vaporization for the surgical treatment of ovarian endometriomas. Increasing evidence suggests that the traditional approach of cystectomy negatively affects ovarian reserve. Vaporization techniques using CO2 and plasma energy may better preserve ovarian function, suggesting a viable alternative approach to the surgical treatment of ovarian endometriomas.

Category: Laparoscopy

SubCategory: Reproductive Medicine

10104 Laparoscopic Approach to a 15-Week Interstitial Pregnancy

Kosmacki A, de Souza K, Bardawil E, Ross W, Biest S. Washington University of St. Louis, St. Louis, MO*
*Corresponding author.

Study Objective: To review the surgical steps in the resection of an advanced-stage interstitial ectopic pregnancy.
Design: Case report of an interstitial pregnancy that presented at 15-weeks gestational age.
Setting: Surgery was performed at a tertiary care hospital by an experienced minimally invasive gynecologic surgeon. Patient was positioned in dorsal lithotomy with arms tucked.
Patients or Participants: Single patient who presented for surgical management of her interstitial pregnancy.
Interventions: Laparoscopic cornual wedge resection.
Measurements and Main Results: A surgical video was edited and narrated to review the steps of the procedure.
Conclusion: Interstitial pregnancies can be safely managed with a minimally invasive surgical approach, even at advanced gestational ages, if care is taken to minimize blood loss and the surgery is performed by an experienced surgeon.

Category: Endometriosis

SubCategory: Research

10117 Urinary Tract Endometriosis: Literature Review from 1976 to 2023

Fatehchehr S,[1] Jiang MY,*[2] Nasab S[3]. [1]Division of Female Pelvic Medicine and Reconstructive Surgery (Urogynecology), Department of Obstetrics & Gynecology, UCLA- Kern Medical, Bakersfield, CA; [2]Department of Obstetrics & Gynecology, UCLA- Kern Medical, Bakersfield, CA; [3]Division of Reproductive Endocrinology and Infertility, Johns Hopkins University, Baltimore, MD*
*Corresponding author.

Study Objective: To summarize the epidemiology, diagnostic modalities, and treatment methods of urinary tract endometriosis (UE).
Design: Retrospective literature review of 141 select articles from January 1976 to March 2023.
Setting: N/A.
Patients or Participants: UE articles from Medline, PubMed, Ovid, Embase, MEDLINE, Cochrane review.
Interventions: N/A.
Measurements and Main Results: UE is prevalent in 0.3-12% of all endometriosis cases and 19-53% of deep infiltrating endometriosis. Bladder endometriosis is the most common (80-85%) and has specific symptoms, most frequently dysuria and hematuria. Ultrasound (US) and magnetic resonance imaging (MRI) have reported sensitivities of 50-89% and 67-100%, and specificities of 98-100% and 83-100%. Other imaging modalities include computed tomography urogram (CTU) and cystoscopy, with reported sensitivities of 46% and 58% and specificities of 98% and 97%. Ureteral endometriosis is the second most common (9-23%) with non-specific symptoms. It is up to 50% asymptomatic and often complicated with hydronephrosis. US and MRI have reported sensitivities of 50-97% and 33-87%, and specificities of 95-100% and 98-100%. CTU has a less diagnostic value, with reported sensitivity and specificity of 36-57% and 76-89% for left ureter, and 18-60% and 70-88% for right ureter. Renal (<1-2%) and urethral (<1-2%) endometriosis are less prevalent with less available data. Limited case reports describe imaging findings of renal endometriosis often misinterpreted as renal tumors and urethral endometriosis has been misdiagnosed as urethral diverticulum. Endoscopic visualization with biopsy confirmation remains the diagnostic gold standard. Medical management consists of hormonal treatment and surgical procedures are based on disease location and associated complications. Surgical management leads to more definitive treatment with low complication rates. Current data supports a minimally invasive surgical approach.
Conclusion: Most suitable diagnostic modalities to detect UE are MRI, US, and cystoscopy. Minimally Invasive Surgery excision of UE with high clinical index of suspicion in multidisciplinary setting is gold standard for early surveillance detection, and leading to definitive treatment with excellent outcomes.

Category: Laparoscopy

SubCategory: Endometriosis

10123 Pelvic Dissection Assisted by Indocyanine Green

Escalona JR,[*,1] *Escalona A,*[2] *Vigueras A,*[3] *Arias K,*[3] *Heredia F,*[3] *Heredia F, III*[2]. [1]*Departamento de Obstetricia y Ginecología, Universidad de Concepción, Concepción, Chile;* [2]*Departamento de Obstetricia y Ginecología, Universidad San Sebastián, Concepción, Chile;* [3]*Obstetricia y Ginecología, Universidad de Concepción, Concepcion, Concepcion, Chile*
*Corresponding author.

Study Objective: To demonstrate that indocyanine green allows a faster and safer deep pelvic dissection.
Design: Video abstract of one case of surgery with indocyanine green.
Setting: Standard laparoscopic gynecologic surgery.
Patients or Participants: One case of endometriosis and PID.
Interventions: Laparoscopic deep surgery, adnexectomy, bilateral ureteral dissection, nodule resection, rectal resection.
Measurements and Main Results: Optimal surgery in a severe endometriosis and PID.
Conclusion: Indocyanine green is a technology that allows a faster and safer deep pelvic surgery.

Category: Robotics

SubCategory: Endometriosis

10139 Initial Experience and Feasibility with Robotic Versius Platform for Treatment of Stage III Endometriosis with Surgical Systematization.

Souza CA,[*,1] *Trauczynski P,*[2] *Bunchen G,*[3] *Camargos E,*[4] *Avella M,*[5] *Pazello R,*[6] *Menegatti JE*[7]. [1]*Instituto Crispi, Rio de Janeiro, Brazil;* [2]*ENDOLAP, Blumenau, Brazil;* [3]*ENDOLAP, Florianópolis, Brazil;* [4]*Hospital Baia Sul, Florianópolis, Brazil;* [5]*Avella e Deus Cirurgia Avançada, Sorocaba, São Paulo, Brazil;* [6]*OPHERA, Curitiba, Brazil;* [7]*OPHERA, Lages, Brazil*
*Corresponding author.

Study Objective: The objective of this study is to demonstrate the feasibility and safety of Versius Platform (CMR) for surgical systematization and treatment of endometriosis.
Design: Edited Video demonstrating a systematical surgical procedure for endometriosis using the Versius robotic platform.
Setting: 4-port System from CMR Surgical which consists of bedside units for instrument and a surgical console.
Patients or Participants: A 31-year-old woman with pelvic pain, dysmenorrhea, dyspareunia and infertility. Suffered from dyschezia that initiated 2 days before menstrual cycle. MRI / US and physical examination showed thickening of the uterosacral ligament that infiltrates the para rectal space and a nodule at the left paracolpus.
Interventions: Initial case experience with the CMR – Versius platform for a case of grade III endometriosis. Realized in a systematic fashion dissection for en bloc peritoniectomy, resection of the utero sacral ligament, recto vaginal septum and paracolpus.
Measurements and Main Results: There was no complications in the procedure, it took a similar time than laparoscopy and with minimal bleeding. Patient was discharged at PO day 1. Sixty days after the procedure patient has important pain relief and symptoms with normal menstrual cycles.
The robotic approach brings good advantages for better dissection and preservation of endopelvic fascia and anatomical structures underneath. The 3 D visualization and the 360 degrees movements of the robotic arms are the main responsible for these results.
Conclusion: Systematization for dissection of the layers of the pelvis and en bloc peritoniectomy associated with a good anatomical knowledge appears to be the main factor contributing for a safe and effective surgery. Robotic platforms as CMR Versius surgery for endometriosis is feasible and contributes with even better visualization, ergonomics, surgeon dexterity and reproducibility of the procedure.

Category: Reproductive Medicine

SubCategory: Laparoscopy

10145 Reproductive Outcomes in Patients with Secondary Infertility Undergoing Laparoscopic Isthmocele Repair: A Retrospective Study

McKenna M,[*,1] *Paul R,*[2] *Sasaki K,*[1] *Miller C*[3]. [1]*Obstetrics and Gynecology, Advocate Lutheran General Hospital, Park Ridge, IL;* [2]*Advocate Lutheran General Hospital, Park Ridge, IL;* [3]*The Advanced Gynecologic Surgery Institute, Naperville, IL*
*Corresponding author.

Study Objective: Determine the pregnancy rate and live birth outcomes in women with secondary infertility after robotic assisted laparoscopic repair of uterine isthmocele.
Design: Retrospective cohort study.
Setting: Private practice at large tertiary care hospital.
Patients or Participants: Women with secondary infertility desiring pregnancy who underwent robotic assisted laparoscopic isthmocele repair from January 1, 2015, until December 31, 2021. Patients were selected for robotic assisted laparoscopic repair if remaining myometrial thickness in the isthmocele was equal or less than 3mm, or if there was fluid in isthmocele cavity.
Interventions: Robotic assisted laparoscopic resection and repair of uterine isthmocele in patients with secondary infertility.
Measurements and Main Results: The study sample included 67 patients with a mean age at time of surgery of 36± 3.3 years old. 61% of the patients were white with an average BMI of 24.3 (range: 17.4-48.3). During isthmocele repair, additional pathology was identified in nearly two-thirds (64%) of patients, most commonly being adhesions (31%) and endometriosis (24%). In the 46 patients with available imaging and remaining myometrial thickness measurements pre and post operatively, the median increase in remaining myometrial thickness was 3.9mm (range 0-11mm). Pregnancy was achieved in 52 patients (78%), with 5 of those patients having a spontaneous abortion (9.6%) and 45 (67%) delivering a viable infant.
Conclusion: There is no consensus in the literature as to the optimal treatment for patients with secondary infertility and uterine isthmocele who desire subsequent pregnancy. Our study is the largest to date looking specifically at secondary infertility and subsequent pregnancy rates after robotic assisted laparoscopic repair of isthmocele. We demonstrate significantly improved pregnancy rates and live birth outcomes in patients with secondary infertility after repair of isthmocele and therefore should be considered as primary treatment in women with isthmocele measuring 3mm or less, or found to have fluid in the isthmocele.

Category: Oncology

SubCategory: Research

10160 Sentinel Lymph Node Biopsy with Technetium-99m and Fluorescence Indocyanine Green for Vulvar Cancer

Bernal IC,[*,1] *Yoon E,*[2] *Newman MI,*[3] *Cardenas J*[4]. [1]*Nova Southeastern University KPCOM, Davie, FL;* [2]*Laboratory Medicine, Cleveland Clinic Florida, Weston, FL;* [3]*Plastic and Reconstructive Surgery, Cleveland Clinic Florida, Weston, FL;* [4]*Gynecology Oncology, Cleveland Clinic Florida, Weston, FL*
*Corresponding author.

Study Objective: Effectiveness and safety of Indocyanine green (ICG) for sentinel lymph node biopsy on vulvar cancer.
Design: Case Study. Use of intra-operative ICG fluorescence for sentinel lymph node biopsy on vulvar cancer.
Setting: 70 y.o. female with 3-cm vulvar squamous cell carcinoma in the posterior fourchette of the vulva. Physical exam and PET CT scan did not show abnormal groin lymph nodes or distant metastasis. Patient underwent partial radical vulvectomy with sentinel lymph node biopsy with Tc-99 and ICG. Two right sentinel lymph node and one left sentinel lymph node was identified. Post-operative course was unremarkable.
Patients or Participants: 1 participant.
Interventions: Pre-operative Lympho-scintigraphy Tc 99 with intra-operative radiolocalization and intra-operative dermal injection of indocyanine green.
Measurements and Main Results: Pathology showed invasive squamous cell carcinoma, poorly differentiated, 2 × 1.8 cm horizontal extend, maximum depth of invasion 0.8 cm. All circumferential margins were negative for invasive carcinoma. Invasive carcinoma was positive focally in deep margins. Lymphovascular invasion was not identified. Eight-mm metastatic carcinoma was identified in 1 out of two right inguinal sentinel lymph nodes. One left sentinel lymph node was negative for carcinoma.
Conclusion: Sentinel lymph node biopsy for vulvar cancer with Tc-99 and ICG appears safe and feasible. ICG may increase the detection rate of micro metastasis. ICG is an alternative to blue dye.

Category: Basic Science/Education

SubCategory: Other

10162 Association between Gynecologic Surgeon Year of Experience and Peri-Operative Complications for Hysterectomies

Zdroik AV,[*,1] Burns J,[2] Manzanares K,[2] Swaroop M,[2] Matthews C,[1] Parker-Autry C,[1] Moulder JK[2]. [1]Urology, Atrium Health Wake Forest Baptist, Winston-Salem, NC; [2]Ob/gyn, Atrium Health Wake Forest Baptist, Winston-Salem, NC*
*Corresponding author.

Study Objective: To evaluate the association of gynecologic surgeon experience with peri-operative complications of hysterectomy.
Design: Retrospective cohort study. Exposure was year of experience at time of surgery; outcome was peri-operative complications.
Setting: Tertiary academic medical center.
Patients or Participants: Patients undergoing abdominal hysterectomy, vaginal hysterectomy, and laparoscopic hysterectomy were identified by Current Procedural Terminology (CPT) Codes from January 1, 2017, to December 31, 2021. Patients in which the hysterectomy was performed by non-gynecologic surgeons, for obstetric reasons, and during pelvic exenteration were excluded.
Interventions: Patients were compared with respect to surgeon year of experience and peri-operative complication rates. Multivariate logistic regression was performed; complications were considered as a composite, minor, and major according to Clavien-Dindo (CD) classification.
Measurements and Main Results: We identified 25 gynecologic surgeons that performed 2,711 hysterectomies with or without concomitant procedures. An ROC curve analysis was used to evaluate the impact of surgeon year of experience on complications based on CD classifications. 16-year experience was identified as a discriminatory threshold for composite and minor (CD I-II) complications. Surgeons with ≥16 year's experience had higher rates of composite (36.6% vs 31.4% p=0.0049) and minor complications (29.4% vs 22.2% p<0.001). Years of experience did not have a significant association with major complications (CD III-V), (7.2% vs. 9.3%, p=0.0496).
Surgeons with ≤ 16 year's experience performed a greater percentage of laparoscopic hysterectomies compared to surgeons with ≥16 year's experience (57.8% v. 28.6%, p<0.001). Surgeons with ≥16 year's experience performed more abdominal (32.7%) and transvaginal (38.8%).
Conclusion: Fewer surgeon years of experience is not associated with an increase in major peri-operative complications. Our study also reflects the rise in minimally invasive approach for hysterectomy in surgeons in early years in practice.

Category: Endometriosis

SubCategory: Pelvic Pain

10173 Long-Term Therapy of Elagolix + Add-Back Therapy in Women with Endometriosis-Associated Pain for 48 Months: Update on Bone Mineral Density

Kim JH,[*,1] Simon JA,[2] Miller P,[3] Ng J,[4] Chan A,[4] Thomas J,[4] Snabes M[4]. [1]OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY; [2]Obstetrics and Gynecology, IntimMedicine Specialists, Washington, DC; [3]OBGYN, Prisma Health, Greenville, SC; [4]Abbvie, Chicago, IL*
*Corresponding author.

Study Objective: To report the 48-month bone mineral density data of a phase 3 study evaluating the long-term safety of elagolix 200 mg twice daily (ELA) with add-back therapy (AB, estradiol 1 mg/0.5 mg norethindrone acetate) for treatment of endometriosis-associated pain (EAP; NCT03213457).
Design: To report the 48-month bone mineral density data of a phase 3 study evaluating the long-term safety of elagolix 200 mg twice daily (ELA) with add-back therapy (AB, estradiol 1 mg/0.5 mg norethindrone acetate) for treatment of endometriosis-associated pain (EAP; NCT03213457).
Setting: N/A.
Patients or Participants: Premenopausal women with moderate to severe EAP.
Interventions: Randomized 4:1:2 to 12-month double-blinded treatment with ELA+AB, ELA for 6 months followed by ELA+AB for 6 months, or placebo. Following blinded treatment, all patients received open-label ELA+AB for an additional 36 months.
Measurements and Main Results: Randomized 4:1:2 to 12-month double-blinded treatment with ELA+AB, ELA for 6 months followed by ELA+AB for 6 months, or placebo. Following blinded treatment, all patients received open-label ELA+AB for an additional 36 months.
Conclusion: This 48-month study was the longest evaluation of ELA+AB to date in patients with EAP, and this analysis showed that ELA+AB had minimal long-term impact on BMD in premenopausal women with moderate-to-severe EAP. Combined with previously reported efficacy data, these data support that ELA+AB may provide a long-term, therapeutic option for moderate to severe EAP through 48 months.

Table. Mean Percent Change from Baseline in BMD at 48 Months in Women with EAP Treated With ELA+AB for 48 months

		Percent Change from Baseline	
Anatomic Region	**n**	**LS mean ± SE**	**95% CI**
Lumbar spine	37	−0.33±0.55	−1.42, 0.77
Total hip	36	0.74±0.39	−0.05, 1.53
Femoral neck	36	−0.24±0.64	−1.52, 1.04

LS, least squares

Category: Laparoscopy

SubCategory: Other

10176 Laparoscopic Assisted Extracorporeal Ovarian Cystectomy: A Minimally Invasive Approach to a Large Ovarian Cyst

Seaman SJ, Dawodu O, Kim JH. OBGYN, Columbia Irving Medical Center - New York Presbyterian Hospital, New York, NY*
*Corresponding author.

Study Objective: To illustrate the surgical steps for a laparoscopic assisted extracorporeal ovarian cystectomy.
Design: Case report.
Setting: Large academic center.
Patients or Participants: 32yo G0 with history of laparoscopic confirmed endometriosis who presented with a 17cm right ovarian mass. After risks, benefits and alternatives were discussed she was consented for a laparoscopic assisted extracorporeal ovarian cystectomy with possible excision of endometriosis.
Interventions: Key surgical steps are illustrated including:
1. Diagnostic laparoscopy with entry at Palmers point.
2. Mini-laparotomy with placement of a small self-retaining retractor at the umbilicus.
3. Application of an adhesive barrier.
4. Cyst aspiration initially with a needle followed by blunt suction tip for deep drainage.
5. Gentle extraction of the ovary and cyst.
6. Extracorporeal cystectomy.
7. Suture closure of ovarian cortex.
8. Application of a gel point for subsequent diagnostic or operative laparoscopy.
Measurements and Main Results: Patient discharged home on POD0 and had an uncomplicated postoperative course. Pathology returned consistent with a benign dermoid cyst.
Conclusion: Laparoscopic assisted extracorporeal ovarian cystectomy is a feasible and effective option for large ovarian cysts allowing for the benefits of minimally invasive surgery while reducing risks of intraperitoneal spillage.

Category: Oncology

SubCategory: Laparoscopy

10182 Laparoscopic Omentectomy in 5 Steps

Namazi G,[,1] Stuparich M,[1] Cruz J,[2] Nahas S[1]. [1]Minimally Invasive Gynecologic Surgery, University of California Riverside, Riverside, CA; [2]Minimally Invasive Gynecologic Surgery, University of California Riverside, Riverside, CA*
*Corresponding author.

Study Objective: Minimally invasive approach has acquired an increasing role in management of certain cases of gynecologic cancers. In this video, we are showing efficient and easy technique for laparoscopic omentectomy in 5 simple steps.
Design: Video presentation.
Setting: Tertiary academic center.
Patients or Participants: Selected patients with gynecologic malignancies undergoing laparoscopic staging/debulking.
Interventions: Laparoscopic omentectomy.
Measurements and Main Results: The five steps to laparoscopic omentectomy include 1- re-arranging surgeons position for operating in the upper abdomen, 2- identifying the momentum at the hepatic flexure, 3- dividing the omentum while the assistant tents up the more distal portion, 4- repositioning the distal free end caudally to expose the splenic flexure attachment, 5- dividing the connection to the splenic flexure.
Conclusion: There has been an increased role for minimally invasive debulking and staging for selected patients with gynecologic malignancies e.g., early stage ovarian cancer and those who have clinically complete response to neoadjuvent chemotherapy. Developing techniques to complete these surgeries minimally invasively improve patient outcomes by reducing operative time and avoiding more invasive approaches.

Category: Reproductive Medicine

SubCategory: Pelvic Pain

10189 Laparoscopic Removal of a Non-Communicating Uterine Horn

Alzamora MC,[,1] Trieu E,[2] Horiuchi W,[3] Kastury R,[4] Damle LF[3]. [1]Obstetrics and Gynecology, MedStar Washington Hospital Center, Washington, DC; [2]Medstar Washington Hospital Center, Washington, DC; [3]Obstetrics and Gynecology, MedStar Washington Hospital Center, Washington, DC; [4]Pediatric and Adolescent Gynecology, Children's National Medical Center, Washington, DC*
*Corresponding author.

Study Objective: To describe the etiology, presentation, as well as diagnostic and therapeutic approach to a unicornuate uterus with a non-communicating uterine horn and to illustrate appropriate surgical technique and intraoperative considerations.
Design: Video.
Setting: Hospital operating room.
Patients or Participants: 16 y.o. female presenting with chronic dysmenorrhea found to have a unicornuate uterus with an associated rudimentary horn.
Interventions: The patient had a laparoscopic excision of rudimentary horn.
Measurements and Main Results: After chromopertubation to confirm the right rudimentary horn and adjacent fallopian tube were not connected to the left hemiuterus, the rudimentary horn and fallopian tube were excised from the functional unicornuate uterus without entry into the endometrial cavity.
Conclusion: Laparoscopic excision of rudimentary horn can successfully treat dysmenorrhea in symptomatic patients.

Category: Research

SubCategory: Reproductive Medicine

10199 Predictive Accuracy of the American College of Surgeons Risk Calculator's in Gynecologic Surgery: A Meta-Analysis

Polanco E,[,1] Abdallah Y,*[,1] Goodwin A,[1] Hobson DTG[2]. [1]Wayne State University School of Medicine, Detroit, MI; [2]Obstetrics/Gynecology, Wayne State University School of Medicine, Detroit, MI*
*Corresponding author.

Study Objective: To determine the accuracy of the American College of Surgeons Surgical Risk Calculator (ACS-SRC) across postoperative complications in gynecologic surgery.
Design: Meta-analysis.
Setting: N/A.
Patients or Participants: Online databases were searched from inception to March 2023 for gynecological studies reporting on the efficacy of the ACS-SRC.
Interventions: Following PRISMA guidelines, all full-text articles reporting ACS-SRC utilization in gynecology with predicted and actual patient complication rates were included. Studies were individually and collectively assessed for methodological quality. If 3 or more studies

reported the same surgical complication outcome a meta-analysis was performed.

Measurements and Main Results: The search identified 53 studies, 5 of which were eligible for inclusion, examining ACS-SRC predictive accuracy in select complications in the following procedures: sacrocolpopexy, colpocleisis, uterosacral ligament suspension, sacrospinous ligament fixation, hysterectomy with bilateral salpingo-oophorectomy, cytoreduction surgery, and staging. Pooled data revealed the ACS-SRC to significantly underpredict serious complications (RD -0.125, 95% CI -0.171 to -0.078, $p < 0.001$), any complications (RD -0.247, 95% CI −0.308 to -0.187, $p < 0.001$), surgical site infection (SSI) (RD -0.100, 95% CI −0.121 to -0.080, $p < 0.001$), and urinary tract infection (UTI) (RD -0.068, 95% CI −0.112 to 0.025, p=0.002). There was no significant difference for discharge to a nursing facility, cardiac, readmission, venous thromboembolism (VTE), renal failure, return to operating room, and death. Prospective and retrospective studies assessed by their respective tools were generally deemed high quality with minimal risk of bias.

Conclusion: The ACS-SRC accurately predicts postoperative cardiac complications, death, VTE, and readmission, however, it underpredicts serious complications, any complication, UTI, and SSI after gynecologic surgery. To better predict these risks, a specialty prediction model may be needed for the gynecologic population.

Category: Laparoscopy

SubCategory: Other

10207 Accessible Alternatives for Laparoscopic Medical Devices in the Low Resource Setting

del Mazo N,[*,1] *Rivera Ortiz G,*[2] *Mourad J*[2]. [1]*Obstetrics and gynecology, University of Puerto Rico, San Juan, PR;* [2]*Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ*
*Corresponding author.

Study Objective: To demonstrate how to implement low-cost/easy accessed materials in laparoscopic gynecologic surgery, to provide reproducible surgical options/solutions for surgeons across the world and to decrease the cost of surgery.

Design: Video presentation.

Setting: The various clips of video were performed in an operating room with the patient in lithotomy position throughout the surgery.

Patients or Participants: Two patients that remained anonymous were included in this study.

Interventions: Usage of alternatives for laparoscopic medical devices in the low resource setting, including gloves as light covers, substitutes for endocatch, alternatives for administration of vasoconstricting agents, option for uterine manipulation, option for suction and irrigation and reusing instruments.

Measurements and Main Results: Procedures presented here completed uneventfully without complications. Postoperative period without complications.

Conclusion: While laparoscopy can confer the usual benefits of shortening hospital stay and reducing work absences, its use in developing countries can be especially useful as a diagnostic modality where imaging is limited, as well as reducing infection and hemorrhage, which are leading causes of morbidity. The specialized surgical techniques have to be reduced to their simplest form and made available to every surgeon, not time-consuming, reliable with a reduced potential of complications and able to be performed with a minimum of instrumentation. Key to success is the appropriate use of the local human and financial resources. Employing these methods resulted in preservation of resources and a reduction in surgical cost without impacting the quality of care for the patient.

Category: Endometriosis

SubCategory: Pelvic Pain

10217 IL-1 Antagonist Anakinra for the Treatment of Endometriosis: A Placebo Controlled, Randomized Pilot Study

Sullender R,[*,1] *Agarwal RK,*[1] *Jacobs MB,*[1] *Valentine H,*[1] *Foster L,*[2] *Agarwal SK*[1]. [1]*University of California at San Diego, La Jolla, CA;* [2]*AIMA Laboratories, Hamilton, Canada*
*Corresponding author.

Study Objective: To evaluate the impact of an interleukin-1 (IL-1) antagonist on endometriosis related quality of life (QoL) and pain.

Design: Single site, randomized, double blinded, placebo controlled, cross-over pilot clinical study.

Setting: Specialty clinic at an academic institution.

Patients or Participants: Eligible participants were females aged 18-45 years with menstrual cycles every 24-32 days and menstrual periods lasting no more than 10 days. Subjects had moderate to severe dysmenorrhea and either a surgical diagnosis of endometriosis or ultrasound evidence of endometrioma.

Interventions: Subjects were randomly assigned in a double-blind fashion to receive either the study drug (Anakinra) or placebo administered as daily injections during the first 3 periods and then the alternate intervention for the next 3 periods.

Measurements and Main Results: 15 subjects completed the 6 menstrual cycle study. After each period, they completed the Endometriosis Health Profile-30 (EHP-30) QoL questionnaire and an assessment of dysmenorrhea using a 0-100 Visual Analogue Scale (VAS). All domains of the EHP-30 showed a trend towards improvement with statistically significant improvements in powerlessness (54.5 vs. 63.3, $p = 0.04$) and self-image (58.1 vs. 66.7, $p = 0.03$) on the study drug compared to placebo. The mean dysmenorrhea VAS also trended toward improvement with a score of 37.5 during active treatment and 42.6 with placebo ($p = 0.26$). No difference in menstrual cycle length was detected (29.3 days vs 27.7 days, p=0.56).

Conclusion: With all domains of the EHP-30 and the dysmenorrhea VAS consistently showing either a statistical improvement or trend towards improvement, there is justification for a larger study. Furthermore, since no impact on menstrual cycles was detected, Anakinra may be a particularly impactful option for women desiring fertility.

Category: New Instrumentation or Technology

SubCategory: New Instrumentation or Technology

10225 High Jain Point in Large Masses

Jain N,[*,1] *Jain V,*[2] *Gupta S*[3]. [1]*Gynaecologist, Vardhman Hospital, Muzaffarnagar, India;* [2]*Gynecologist, Vardhman Hospital, Muzaffarnagar, India;* [3]*General Surgeon, Vardhman Hospital, Muzaffarnagar, Uttar Pradesh, India*
*Corresponding author.

Study Objective: To study the safety of the High Jain Point for first blind laparoscopic entry in cases of large masses with or without previous surgery.

Design: The High Jain Point is placed on a line going vertically upwards from the Jain Point to the subcostal margin. It is an extension of Jain Point to accommodate the first blind entry in large masses. The idea is to make a lateral, high port to remain outside and above the larger masses.

Setting: Tertiary referral centre.

Patients or Participants: We did 612 cases out of which one third had previous surgeries, with masses weighing above 500gms, and ovarian cyst more than 10cm.

Interventions: We made first blind entry in 612 patients from the High Jain Point. Veress needle is entered and then first blind 5mm trocar is introduced. A 360◦ Check of the large masses and upper abdominal structures is done. Then the 10mm port is introduced according to the size of the mass. This High Jain Point remains outside the surgical field much laterally and is used as an ergonomic main working port throughout the surgery.
Measurements and Main Results: We did 612 cases of big masses, out of which 195 had previous surgeries ranging from previous one to six surgeries. No visceral or bowel injury noted. No adhesions were noted below the High Jain Point.
Conclusion: A High Jain Point port makes a safe first blind entry for larger masses with or without previous surgeries and is found to be ergonomic.

Category: Robotics

SubCategory: Urogyn/Pelvic Floor Disorders

10229 Surgical and Patient Reported Outcomes of Robotic-Assisted Sacro-Colpopexy and Sacro-Cervicopexy Using Autologous Rectus Fascia

Chan FK,[*,1] Carruthers G,[2] Lee D,[3] Lynn A,[3] Johansson CY*[4].
[1]*Gynaecology and Gynaecological Oncology, Macquarie University Hospital, Sydney, NSW, Australia;* [2]*Anaesthetic, Macquarie University Hospital, Macquarie Park, NSW, Australia;* [3]*Women's Health, Macquarie University Hospital, Macquarie Park, NSW, Australia;* [4]*Minimally Invasive Gynaecology Unit, Liverpool Hospital, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: To define the surgical and patient-reported outcomes of robotic-assisted sacrocolpopexy using autologous rectus fascia graft (SCARF) for the treatment of apical vaginal prolapse.
Design: Prospective observational study.
Setting: 15 degrees Trendelenburg with 5 degrees left lateral tilt to harvest rectus fascia. 25 degrees Trendelenburg for sacrocolpopexy.
Patients or Participants: 40 patients referred with advanced apical POP from April 2021 to April 2023. Median follow-up of 12 months.
Interventions: Robotic-assisted SCARF or supracervical hysterectomy with sacro-cervicopexy (SCCARF) using a posterior rectus sheath graft harvested and fashioned during the same procedure.
Measurements and Main Results: POP-Q scores were assessed pre-operatively and at 3 and 6 months post-operatively. Subjects' quality of life, bladder, bowel and sexual function were recorded using Pelvic Floor Disability Index (PFDI-20), Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12), and Patient Global Impression of Improvement (PGI) survey. 52% of patients had SCARF and 48% had supracervical hysterectomy with SCCARF. 45% had previous prolapse surgery. The average operating time for SCARF was 101 mins (range 70 -180 mins) and for SCCARF was 105 mins (range 74- 140). The average time to harvest graft was 12 mins (range 7.5 − 19 mins).
There were no blood transfusions, re-operations, adverse surgical outcomes or prolapse recurrence. The average hospital stay was 1.15 days.
POP-Q stage improved from 3.225 to 0.1, $p<0.0005$.
PFDI-20 improved from 141.8 to 14.66, $p<0.0005$. PISQ12 showed statistically significant improvement in all sexual function, urinary and faecal continence measures, and PISQ Total Score improved from 31.03 to 17.30, $p<0.0005$. PGI-I scores were high, showing high levels of satisfaction.
Conclusion: This is the first report of patients with apical POP managed with autologous rectus fascia for sacrocolpopexy/sacrocervicopexy performed robotically. This procedure produces acceptable anatomical and patient-reported outcomes whilst avoiding mesh-related complications. Larger study size and long-term follow up are needed to establish rectus fascia as a standard graft material for sacrocolpopexy.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Urogyn/Pelvic Floor Disorders

10231 Pectopexy for Recurrent Vault Prolapse

Jain N,[*,1] Jain V*[2]. [1]*Gynaecologist, Vardhman Hospital, Muzaffarnagar, India;* [2]*gynecologist, Vardhman Hospital, Muzaffarnagar, India*
*Corresponding author.

Study Objective: To study the feasibility of pectopexy in the management of vault prolapse.
Design: It is Retrospective in nature, patients were interviewed at post-operative 6 weeks and then 3 months, 6 months and 1 year post operatively.
Setting: Conducted at a tertiary referral center specializing in laparoscopic pelvic floor repair.
Patients or Participants: All patients were in the age group 45-76 years, BMI, 16-40, with complaints of vault prolapse, primary or recurrent after failed Sacro-Colpopexy or site- specific- repair.
Interventions: Patients laid in modified lithotomy position, under general anesthesia. Laparoscopic pectopexy done after opening the peritoneum covering the vault. A Polypropylene mesh with a 6cm by 4cm centre piece, and side limbs of 2.5cm, width, was fashioned out from a 15 by 15 cm mesh. The centre piece was fixed to the vaginal apex and the side limbs were fixed to the pectineal ligaments, using two braided polyester sutures.
Measurements and Main Results: The case presented in the video had a pectopexy after a failed site-specific repair and burch colposuspension done seventeen years back. Good functional and anatomical correction achieved at the end. For other cases the follow up period ranges from 6 months to five years. No major complication was noted. Minor, lower dragging pain persisted in initial 3-4 weeks. Patients were satisfied with anatomical and functional correction achieved.
Conclusion: Sacrocolpopexy is the gold standard, but our study points that pectopexy a relatively newer procedure, is also a safe, feasible and effective way to treat vault prolapse.

Category: Laparoscopy

SubCategory: Endometriosis

10244 A Case of Appendiceal Endometriosis Resulting in Intussusception

Casas Diaz O,[*,1] Alzamora MC,[2] Robinson JK*[3]. [1]*Obstetrics and gynecology, MedStar Washington Hospital Center, Washington, D.C., DC;* [2]*Obstetrics and Gynecology, MedStar Washington Hospital Center, Washington, DC;* [3]*MedStar Washington Hospital Center, Washington, DC*
*Corresponding author.

Study Objective: To review the presentation of an inverted appendix as a result of endometriosis and discuss the potential benefits of concurrent prophylactic appendectomy at the time of endometriosis excision.
Design: N/A.
Setting: Academic Hospital System.
Patients or Participants: Our patient is a 49-year-old female with history of endometriosis status post prior hysterectomy and excision of endometriosis who was found to have an inverted appendix during work up for RLQ pain.
Interventions: Patient underwent laparoscopic lysis of adhesions, appendectomy and partial cecectomy. Extensive adhesiolysis was first performed in order to free the small bowel and mobilize the right cecum and appendix. The laparoscopic automatic GIA stapler was used to remove the inverted appendix and a small portion of cecum. The laparoscopic Endo-Catch bag was used to retrieve specimens from the abdomen.
Measurements and Main Results: Patient underwent an uncomplicated laparoscopic lysis of adhesions, appendectomy and partial cecectomy. She was recovering well at their 2-week follow-up visit. Pathologic evaluation of the inverted appendix was consistent with endometriosis.

Conclusion: Appendiceal endometriosis is a rare cause of intussusception. Its presentation can be acute or more commonly with chronic non-specific symptoms. When the appendix is not considered in disease pathology for endometriosis, patients are at increased risk of unresolved pain and, thus, further laparoscopic procedures. Performing prophylactic appendectomy in patients with chronic pelvic pain and endometriosis could potentially be beneficial but more research is needed to determine the benefits and risks associated with this practice.

Category: Reproductive Medicine

SubCategory: Hysteroscopy

10248 Fertility-Sparing Methods for Hysteroscopic Resection of Retained Products of Conception

Yuen M, Mohan S, Harris D, Gagliardi E. OBGYN, Beth Israel Deaconess Medical Center, Boston, MA*
*Corresponding author.

Study Objective: To highlight a case of a fertility-sparing, minimally invasive approach to resection of retained products of conception with hysteroscopy.
Design: Case Report.
Setting: This case took place at a large tertiary care academic teaching hospital.
Patients or Participants: A 32-year-old gravida 1 para 0 with abnormally rising beta human chorionic gonadotropin (bHCG) after presumed spontaneous abortion who received care at the OBGYN practice of this large tertiary care academic teaching hospital.
Interventions: A minimally invasive approach of resection of retained products of conception with a diagnostic hysteroscope and hysteroscopic scissors and graspers.
Measurements and Main Results: Hysteroscopic scissors and graspers were used to resect the retained products of conception in their entirety. The final pathology report was consistent with retained products of conception and the patient's bHCG decreased to zero. Three months later, the patient became pregnant and went on to have a successful pregnancy delivered at term.
Conclusion: Hysteroscopy is a minimally invasive, fertility-sparing approach for both diagnosis and treatment of retained products of conception with a higher likelihood of success compared to other methods of removal given the direct visualization of the uterine cavity.

Category: Fibroids

SubCategory: Research

10251 The M a V S Trial: A Randomized Controlled Trial Comparing Morcellation Via Abdominal Vs. Vaginal Route during Laparoscopic Hysterectomy

Chen J,[1] Wang E,[2] Lin E,[3] Shields JK,[3] Chao L,[3] Chang S,[3] Weix P,[3] Latham M,[3] Pruszynski J,[3] Smith K,[3] Kho KA[3]. [1]Kaiser Oakland Medical Center, Oakland, CA; [2]Montefiore Medical Center, New York, NY; [3]Obstetrics & Gynecology, UT Southwestern Medical Center, Dallas, TX*
*Corresponding author.

Study Objective: To compare perioperative and patient-centered outcomes in patients undergoing abdominal vs vaginal morcellation during total laparoscopic hysterectomy for benign indications.
Design: Randomized-Controlled Trial.
Setting: Tertiary care academic medical center.
Patients or Participants: All individuals over 18 years of age undergoing conventional laparoscopic (TLH) or robotic-assisted (RA-TLH) for benign indications from June 2020 to July 2022 were offered enrollment. Patients with uterine size <10 weeks and those undergoing concurrent procedures (i.e., pelvic organ prolapse procedure, bowel or hernia-related surgeries) were excluded (See exclusion criteria). A total of 46 participants were enrolled, 34 completed randomization.
Interventions: Participants were randomized between abdominal mini-laparotomy versus vaginal morcellation at time of colpotomy.
Measurements and Main Results: Participants were randomized to either abdominal or vaginal route of contained manual morcellation at the time of colpotomy creation; 18 were randomized to the vaginal route, 16 to morcellation via an abdominal mini-laparotomy incision. There were no significant differences in perioperative and patient-centered outcomes observed between groups through follow up at 6 weeks postoperatively. Perioperatively, uterine weight, total operative time and morcellation time were similar between groups as were blood loss and complications. Length of hospital stay, time in PACU, narcotic use in PACU, and total narcotic use up to 6 weeks postoperatively were not different. There was a higher rate of containment bag perforation noted in the vaginal group (56% vs 11%, p=0.015). Amongst cases that failed the containment integrity test, there were no differences in the number nor size of defects note. There were no cases of unexpected pathology.
Conclusion: Contained manual morcellation for tissue extraction during TLH through vaginal and abdominal routes are comparable, except for a higher rate of containment bag compromise during vaginal morcellation. The areas of bag breakage occurred extraperitoneally, so the clinical significance of this is unclear.

Category: Endometriosis

SubCategory: Laparoscopy

10252 Evaluating the Quality of Endometriosis Operative Reports Among High Volume Endometriosis Surgeons

Kobylianskii A,[1,2] Blom J,[3] Horwood G,[4] Sarna N,[1,5] Rosenthal M,[6] Cybulsky M,[1,7] McCaffrey C,[1,8] McGrattan M,[1,2] Murji A[1,2]. [1]Division of Minimally Invasive Gynecologic Surgery, University of Toronto, Toronto, Ontario, Canada; [2]Department of Obstetrics and Gynecology, Mount Sinai Hospital, Toronto, Ontario, Canada; [3]Department of Obstetrics and Gynecology, Queen's University, Kingston, Ontario, Canada; [4]Department of Obstetrics and Gynecology, University of Ottawa, Ottawa, Ontario, Canada; [5]Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada; [6]Department of Obstetrics and Gynecology, North York General Hospital, Toronto, Ontario, Canada; [7]Departent of Obstetrics and Gynecology, Trillium Health Partners, Mississauga, Ontario, Canada; [8]Department of Obstetrics and Gynecology, St. Michael's Hospital, Toronto, Ontario, Canada*
*Corresponding author.

Study Objective: To evaluate the quality of surgical dictations for endometriosis surgeries performed by fellowship-trained, high-volume endometriosis surgeons.
Design: Retrospective review.
Setting: Canada.
Patients or Participants: Fellowship-trained surgeons who perform ≥2 endometriosis surgeries per month.
Interventions: N/A.
Measurements and Main Results: Five consecutive deidentified surgical reports per surgeon were evaluated by two reviewers. Each dictation was assigned a quality score (between 0-28), with points given based on the number of components from the American Association of Gynecologic Laparoscopists (AAGL) classification system that were documented. The primary outcome was the proportion of dictations for which endometriosis stage could be assigned. Secondary outcomes included mean dictation quality scores expressed in percentages, individual score components, and quality score variation between surgeons, institutions, and dictation approaches. Proportions were compared with Kruskal-

Wallis test, and quality score variation using ICC (Intraclass Correlation Coefficient).
52 dictations were reviewed from 11 surgeons across 5 sites. AAGL stage could be assigned in 28/52 (54%) of cases. The mean quality score was 53% (range 18-86%). Endometriosis was not documented most commonly for the small bowel/cecum (96%), right ureter (77%) and rectovaginal septum (73%). For a given surgeon, consistency between consecutive reports was poor (ICC 0.17, 95% CI -0.04 - 0.53). Quality scores did not significantly differ between surgeons, institutions, trainee vs. staff, template vs free-style dictation.
Conclusion: There is significant variability and inconsistency in endometriosis surgery documentation, with accurate disease staging only possible in half of dictations. There is a need to standardize surgical documentation for endometriosis surgeries, enhancing communication and ultimately patient care.

Category: Endometriosis

SubCategory: Laparoscopy

10255 A Sustainable Approach for Navigating Complex Endometriosis: Bladder Peritonectomy of Deeply Infiltrative Endometriosis (DIE)

Manning CT,[*,1] Koi T,[1] Kapetanakis T,[2] Gagliardi E,[1] Thibeault E,[2] Mackenzie M[2]. [1]OBGYN, Beth Israel Deaconess Medical Center, Boston, MA; [2]OBGYN, Mount Auburn Hospital, Cambridge, MA*
*Corresponding author.

Study Objective: To showcase a safe, sustainable, stepwise approach to navigating complex endometriosis using a high-power noncontact monopolar scissor electrosurgery dissection for a complete radical wide field peritonectomy in stage IV endometriosis, highlighting the resection of a deeply infiltrative endometriosis lesion (DIE) overlying the bladder.
Design: Operative video/retrospective case study.
Setting: An academic-affiliated community teaching hospital.
Patients or Participants: A single patient who underwent laparoscopic surgery for symptoms of pelvic pain with stage IV endometriosis.
Interventions: Laparoscopic complete radical wide field peritonectomy and endometriosis excision.
Measurements and Main Results: This case was selected retrospectively based on intraoperative footage of stage IV endometriosis, including a DIE lesion overlying the bladder, and use of high-power noncontact monopolar scissor electrosurgery for an optimal endometriosis resection. Specimens were meticulously labelled based on anatomic location and sent to pathology. Biopsy results were compared to operative footage to confirm sites of biopsy-proven endometriosis including the bilateral pelvic sidewalls, anterior cul-de-sac, and right pararectal peritoneum. Operative video was edited to show our standard approach to navigating complex endometriosis, as well as the utility of this method for complete peritonectomy and endometriosis resection in challenging anatomic locations.
Conclusion: Here we demonstrate a safe, easy, and versatile approach to laparoscopic radical wide field peritonectomy for complex endometriosis. Fine dissection with high-wattage noncontact monopolar electrosurgery, when applied correctly, is a safe method of endometriosis excision, which minimizes tissue trauma and enables surgeons to more completely resect complex lesions over critical structures. Research shows peritonectomy improves patients' pain, therefore it's important to promote methods to achieve this safely. This patient reported significantly decreased pain post-op following a complete radical pelvic peritonectomy and endometriosis excision. Finally, the instruments used in this video are all inexpensive, reusable, and widely available; making this technique a sustainable and translatable approach across institutions.

Category: Endometriosis

SubCategory: Endometriosis

10258 Use of Multidisciplinary Approach for the Treatment of Pain Related Symptoms in Endometriosis – a Systematic Review

Fernando DG,[*,1] Buerkley KC,[2] Schmidt Oliver KA,[1] Beran B[3]. [1]Obstetrics and Gynecology, Aurora Sinai Medical Center, Milwaukee, WI; [2]Obstetrics and Gynecology, UW School of Medicine and Public Health, Milwaukee, WI; [3]Medical College of Wisconsin, Milwaukee, WI*
*Corresponding author.

Study Objective: Endometriosis is a chronic, inflammatory, benign gynecologic condition characterized by the presence of endometrial-like glands and stroma outside the uterus, associated with severe, life-impacting symptoms. Given the complexity of the disease and the broad spectrum of symptoms, a multi-disciplinary treatment approach should be implemented for patients. Using a systematic review, this study aims to evaluate the current trends in research for endometriosis, mainly regarding whether multi-modal approaches are being used or not, and which patient outcomes are improved by each therapy.
Design: A systematic literature search was performed using PubMed and MEDLINE following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for studies published 2009-2023. Search terms included Endometriosis, Treatment/Management, Dysmenorrhea, Dyspareunia, and Chronic Pelvic Pain, and was limited to prospective studies.
Setting: Systematic review.
Patients or Participants: None.
Interventions: Medical, surgical and combined management.
Measurements and Main Results: 91 studies of 241 found were included in the analysis. There were 62(68%) randomized controlled studies. 32 (35.2%) studies used multimodal treatments, 29 (32%) used hormonal medications only, 8 (8.7%) used surgery alone and 8 (8.7%) used dietary/nutritional therapy. Among the analyzed studies dysmenorrhea improved in 25 (86%) hormonal medication-only studies, 4 (50%) with surgery only, 11 (73%) with hormones and surgery dual therapy. Non-cyclic pelvic pain improved in 22 (76%) in hormonal medication-only studies, 2 (25%) in surgery only, 10 (66%) with hormones and surgery dual therapy. Dyspareunia improved in 14 (48%) with hormones only, 4 (50%) with surgery only and 10 (66%) with surgery and hormones.
Conclusion: The systematic review of studies for endometriosis related pain revealed that the minority of research are multi-modal, which is not in alignment with recognizing endometriosis is best managed as a multidisciplinary condition. Dysmenorrhea and non-cyclic pain seem best managed with hormonal treatment whereas dyspareunia seems best managed with combined hormones and surgery.

Category: Reproductive Medicine

SubCategory: Other

10264 The Association between Uterine Septum and Undescended Ovaries

Merida MA,[*,1] Hudson M,[1] Brown J,[1] Youssef Y,[1] Young OJ,[2] Akinpeloye A,[3] Abuzeid MI[1]. [1]Obstetrics and Gynecology, Hurley Medical Center/ Michigan State University, Flint, MI; [2]Obstetrics and Gynecology, Hurley Medical Center/ Michigan State University, Flint, MI; [3]Obstetrics and gynecology, Hurley Medical Center/ Michigan State University, Flint, MI*
*Corresponding author.

Study Objective: To describe the pathology of undescended ovaries and its association with Mullerian abnormalities such as uterine septum, and

the importance of acknowledging this correlation in women with recurrent pregnancy loss, infertility, and pelvic pain.
Design: This is a case series and review of the literature on undescended ovaries.
Setting: University-associated community hospital, infertility clinic.
Patients or Participants: Three patients with history of uterine septum.
Interventions: Transvaginal ultrasound, hysterosalpingography, saline infusion hysterosonogram, computerized tomography scan, laparoscopy, hysteroscopy, hysteroscopic metroplasty, hysteroscopic myomectomy.
Measurements and Main Results: Patients with an unexpected diagnosis of undescended ovaries were studied for the presence of uterine septum in the setting of recurrent early pregnancy loss, infertility, and pelvic pain. Infertility workup was positive for two patients with left undescended ovary associated with incomplete and complete uterine septum respectively, and one patient with bilateral undescended ovaries associated with an incomplete uterine septum.
Conclusion: An incidental and isolated finding of abnormally located ovaries at the pelvic brim should prompt the healthcare provider to evaluate for possible undescended ovaries, especially in the presence of Müllerian anomalies such as the uterine septum. Awareness of this pathology among practitioners is important as it affects various phases of evaluation and treatment of the infertile and gynecologic patient such as sonographic evaluation, follicular growth monitoring, or oocyte retrieval, thus appropriate medical and surgical planning should be performed to avoid complications related to infertility treatment.

Category: Laparoscopy

SubCategory: Other

10265 To Compare Efficacy of Vaginal Versus Laparoscopic Peritoneal Vaginoplasty in Women with MRKH Syndrome

Kachhawa G,[*,1] Deoghare M,[2] Mahey R,[2] Sharma JB,[1] Bhatla N[2].*
[1]*Obstetrics and Gynaecology, All India Institute of Medical Sciences, New Delhi, New Delhi, India;* [2]*Obstetrics and Gynaecology, All India Institute of Medical Sciences, New Delhi, New Delhi, India*
*Corresponding author.

Study Objective: To compare the efficacy of vaginal (McIndoe's) and laparoscopic peritoneal (Davydov's) vaginoplasty to create neovagina in MRKH patients.
Design: This was a retrospective clinical study carried out at tertiary care center, done over a period of 3 years (Aug 2018 to Aug 2021), with average follow up of 1-3 years.
Setting: In both procedures, patients were positioned in lithotomy position, with McIndoe's vaginoplasty under spinal anaesthesia and Davydov's under general anaesthesia.
Patients or Participants: 27 patients with MRKH syndrome were taken, 11 underwent McIndoe's vaginoplasty and 16 had laparoscopic Davydov's vaginoplasty.
Interventions: Mcindoe's vaginoplasty was done by creating a space between bladder and rectum and mold covered with amnion put. In Davydov's procedure, patient's own peritoneum was used for lining neovagina.
Measurements and Main Results: Operating time, post-op vaginal length and coital dysfunction postoperatively were compared.
All had primary amenorrhea with absent vagina. Mean age at presentation was similar in both groups (16.6 years) while age at surgery (21.7 years vs 23.9 vs years) was higher in Davydov's as compared to McIndoe's group, the difference was not statistically significant (p=0.27). Duration of surgery was more in laparoscopic Davydov's as compared to McIndoe's vaginoplasty group (101.33 +/- 19.80 min vs and 33.88 +/- 7.20 p <0.001). Neovaginal length was similar in both groups (6.7 cm vs 6.5 cm), p =0.6. Of 27 patients, 26 (96.2%) used mould at night for 6 weeks. One woman developed vaginal stenosis following McIndoes vaginoplasty. Before surgery, 3 patients were married and during an average follow up of 1-3 years, 13 more got married. Of 16 married women (59.25%), all reported satisfactory sexual intercourse.
Conclusion: Both the procedures are safe and effective surgical methods for neovaginal creation. Davydov's peritoneal vaginoplasty has the advantage that native tissue is used to cover the vagina, but it requires surgical expertise and more operating time as compared to McIndoe's technique.

Category: Natural Orifice Surgery

SubCategory: Other

10275 Transvaginal Laparoscopic Surgery: Our Techniques and Experience.

Andou M, Yanai S, Sakate S, Kanno K, Sawada M, Ochi Y. Kurashiki Medical Center, Kurashiki, Japan*
*Corresponding author.

Study Objective: To describe techniques for transvaginal laparoscopy for benign and malignant pathology cases. Tools and instrumentation with be described along with our experience with various transvaginal surgical techniques.
Design: Technique described using video.
Setting: Urban general hospital in Japan.
Patients or Participants: Data on 305 cases who underwent our transvaginal laparoscopic surgery which include hysterectomy, myomectomy, retroperitoneal lymphadenectomy and adnexectomy will be presented. Case studies of techniques will be presented from these cases.
Interventions: A number of variations of transvaginal laparoscopic surgery will be presented. Cases will show the use of different surgical instruments as well as the use of a transvaginal platform. Techniques will be described step-wise.
Measurements and Main Results: The recovery rate of patients was quick and no patient required a conversion to laparotomy. No cases suffered from post-operative severe complications or blood transfusion.
Conclusion: Transvaginal laparoscopic surgery is a patient friendly alternative for selected cases. Although such ultra-minimally invasive techniques can be challenging, the almost scarless result makes it attractive to patients.

Category: Robotics

SubCategory: Pelvic Pain

10276 Quadratus Lumborum Block and Quality of Recovery Following Minimally Invasive Hysterectomy: A Randomized Double-Blind, Controlled Trial

Hui M,[*,1] Mohr-Sasson A,[1] Hernandez N,[2] Bhalwal A,[1] Montealegre A,[1] Leon MG,[1] Dziadek O,[3] Sadek S,[2] Ghorayeb T,[2] Bravo R,[2] Jalloul R*[*,4].*
[1]*Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX;* [2]*The University of Texas Health in Houston, Houston, TX;* [3]*Obstetrics, Gynecology and Reproductive Sciences, UTHealth Houston, Houston, TX;* [4]*Department of Obstetrics, Gynecology and Reproductive Sciences, The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: To assess the effect of preoperative bilateral ultrasound-guided quadratus lumborum (QL) nerve block on quality of recovery after laparoscopic and robotic hysterectomy, in an ERAS setting (opioid sparing regimen).
Design: Randomized, controlled, double-blinded trial.
Setting: University affiliated tertiary medical center.

Patients or Participants: All women undergoing an elective Robotic or Laparoscopic hysterectomy. Women with chronic pain, chronic anticoagulation and Body Mass Index (BMI) > 60 kg/m^2 were excluded.
Interventions: Randomization with a 1:1: allocation:
• QL block with Bupivacaine (0.25%, 20 ml) with saline local trocar sites infiltration
• QL block with saline with Bupivacaine (0.25%, 20 ml) local infiltration.
Stratification by Robotic and Laparoscopic approach was done.
Measurements and Main Results: Primary outcome was defined as the quality of recovery score based on (QOR-40) validated questionnaire completed 24 hours postoperatively. Secondary outcome included: dynamic pain scores, accumulated opioid consumption up to 24 hours, post-operative nausea and vomiting, surgical complications, length of hospital stay, time to first pain medication administration in PACU and adverse events. 76 women were included in each arm. Demographics characteristics were similar in both groups. Median age was 44 (IQR39-50) years, 50% of the participants were African American and median BMI was 32.8 (IQR26.5-38.5) kg/m^2. The mean (SD) QOR-40 was 184.4 (±10.3SD) in the QL block and 180.4 (±9.9SD) for the Local anesthesia group. Although no significant difference was found between groups using the frequentist analysis, the probability of benefit from the block was noted to be 92.7% using Bayesian analysis. All secondary outcomes were comparable between groups. Interestingly, patients undergoing the laparoscopic approach had lower QOR-40 scores compared to the robotic approach and did not seem to benefit from the QL blocks.
Conclusion: QL blocks do not significantly improve quality of recovery after elective robotic or laparoscopic hysterectomy compared to local anesthetic infiltration.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Urogyn/Pelvic Floor Disorders

10282 Anatomical Considerations for Midurethral Sling and Hernias

Clarke B,[*,1] Shaprio D,[2] Sokol A*[1]. [1]*Female Pelvic Medicine and Reconstructive Surgery, MedStar Washington Hospital Center, Washington, DC;* [2]*Georgetown University School of Medicine, Washington, DC*
*Corresponding author.

Study Objective: This video will review the anatomy and location of groin hernias and their relationship to the different types of midurethral slings.
Design: Video.
Setting: Urban academic teaching hospital.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: Direct inguinal hernias occur medial to the inferior epigastric vessels and protrude through Hesselbach's triangle. Indirect inguinal hernias originate lateral to the inferior epigastric vessels and protrude through the inguinal canal and into the labia. Femoral hernias occur inferior to the inguinal ligament and protrude through the femoral ring. The path of a retropubic trocar could potentially cross through a direct hernia, but is more medial than an indirect or femoral hernia. The transobturator sling travels behind the pubic rami and exits lateral to the labia, avoiding the potential path of any groin hernia. The single-incision sling does not interact with any type of hernia.
Conclusion: If a hernia is suspected pre-operatively, a full evaluation with an ultrasound or referral to a general surgeon should be considered before sling placement. In the case of a direct inguinal hernia, or if there is a concern that the retropubic space may contain bowel, the transobturator or single incision sling is favored over the retropubic sling. Any approach may be used in the case of an indirect inguinal or femoral hernia or if there was a previous repair.

Category: Oncology

SubCategory: Laparoscopy

10289 Hyperthermic Intraperitoneal Chemotherapy (HIPEC) in Ovarian Cancer

Puntambekar S,[*,1] Inampudi S,[2] Puntambekar A,[2] Patil M,[3] Chitale M*[1]. [1]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India;* [2]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India;* [3]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, Maharashtra, India*
*Corresponding author.

Study Objective: Hyperthermic Intraperitoneal Chemotherapy in Ovarian Cancer.
Design: Case Report.
Setting: Surgery done using 3D laparoscopy and HIPEC apparatus (BELMONT Medical technologies, USA). Entire procedure done by qualified and experienced team.
Patients or Participants: 58-year-old female, post hysterectomy status and post 12 cycles chemotherapy for Papillary serous Adeno-carcinoma ovary with recurrence.
Interventions: Diagnostic Laparoscopy with excision of nodules larger than 2.5cm followed immediately by HIPEC.
Measurements and Main Results: 58-year-old female who underwent Total Abdominal Hysterectomy for fibroid uterus in 2010, presented in 2018 with right adnexal complex cyst for which she underwent oopherectomy and biopsy was s/o Papillary Serous Adenocarcinoma ovary. She underwent completion surgery later. She received 12 cycles chemotherapy (Paclitaxel and Carboplatin) Repeat PET CT s/o Peritoneal Carcinomatosis. She underwent Diagnostic Laparoscopy with excision of nodule larger than 2.5cm and laparoscopic HIPEC on 10/04/2023.
Under vision 4 drains positioned (2 inflow and 2 outflow) and connected to closed extracorporeal sterile circuit which is further connected to heating circuit. Around 4-6L perfusate circulated with help of peristaltic pump. Flow rate of 1000ml/min maintained. Temperatures kept between 42-43 degrees C. Total duration was 90min and Cisplatin injected at a dose of 75mg/m2. Trendelenberg and Latero-Lateral inclinations of patient was done every 10min to make sure that entire endo- abdominal surface was perfused. Post op patient was kept in ICU for monitoring for 12 hours. Post surgery period was uneventful and she was discharged on Post operative day 5. On follow up patient was comfortable.
Conclusion: Among patients with advanced and recurrent ovarian cancer, addition of HIPEC to cytoreductive surgery results in a longer recurrence free survival and overall survival with a better quality of life and lesser side effects.

Category: Oncology

SubCategory: Laparoscopy

10292 Paratubal Borderline Tumor in Adolescence - A Case Report and Review of Literature.

Saad A,[*,1] Alameri S,[2] Ricci S*[3]. [1]*Gynecology, Cleveland Clinic Abu Dhabi, Abu Dhabi, United Arab Emirates;* [2]*Pathology & Laboratory Institute, Cleveland Clinic Abu Dhabi, Abu Dhabi, United Arab Emirates;* [3]*Oncology institute, Cleveland Clinic Abu Dhabi, Abu Dhabi, United Arab Emirates*
*Corresponding author.

Study Objective: Review the incidence, clinical presentation, diagnosis and treatment of Para-tubal borderline tumors in adolescent patients.
Design: Case report and review of the literature.
Setting: Patient in lithotomy position, both arms tucked. No uterine manipulator was used.

Patients or Participants: Single patient selected retrospectively after the final pathology result was obtained.
Interventions: Patient underwent laparoscopic cystectomy of a 6 cm complex cyst of the right mesosalpinx. Peritoneal washings were obtained. No peritoneal or omental implants were seen & appendix looked normal and was not removed.
Measurements and Main Results: N/A.
Conclusion: Para-tubal borderline tumors are extremely rare. Including our case presentation, a total of twelve are reported; six in adolescent patients. In patients younger than eighteen, all tumors were serous. There is no consensus or guidelines on how to diagnose or manage these tumors. Further follow-up is required and studies to compare para-tubal to ovarian borderline tumors could be beneficial.

Category: Research

SubCategory: Laparoscopy

10299 "Gyn/MIS Back up" System: How a Large Medical Practice Serving 8 Hospitals Does It. A Step Towards Separating the "O" from the "G"

Jalloul R,[*,1] *Leon MG,*[2] *Bhalwal A,*[2] *Montealegre A,*[2] *Dziadek O*[3].
[1]*Department of Obstetrics, Gynecology and Reproductive Sciences, The University of Texas Health Science Center at Houston, Houston, TX;* [2]*Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX;* [3]*Obstetrics, Gynecology and Reproductive Sciences, UTHealth Houston, Houston, TX*
*Corresponding author.

Study Objective: To describe our "Gynecology/MIS Back-Up Call" system providing supplemental services for Gynecologic Emergencies and Minimally Invasive Surgery.
Design: Retrospective analysis of Prospectively collected data from a System-Based intervention.
Setting: Large metropolitan city.
Patients or Participants: Medical practice comprising 185 faculty.
Interventions: Mandated, fee-for-service, separate Gyn/MIS Back-Up call schedule.
Measurements and Main Results: In the past 10 years, our academic and community ObGyn practice has expanded to cover 8 Hospitals including academic, community and county centers. We anticipated the challenges of the increase in patient volumes and call burden, and we committed to provide safe, quality care while reducing liability. A Hospitalist/Gynecologist-MIS Back up program was created.
In addition to the hospitalists focusing on Ob triage/L&D and emergencies, 20 Gynecologists, available within 20 min, rotate to cover weekly back up nights. Compensation for each encounter/surgery is equal to 12 hours of in-hospital call. 240 gyn back up encounters occurred within 2.5 years (at full expansion). The mean monthly number of calls was 8 calls (SD = 4). Of 206 gynecologic surgeries, 89% were done via the minimally invasive route (153 laparoscopies, 30 vaginal surgeries). The most common indication for surgery was laparoscopic management of ectopic pregnancy (38%) followed by ovarian torsion (25%). Laparoscopic procedures also included treatment of complex cases that would have otherwise had open surgery (ruptured tubo-ovarian abscesses, endometriomas and ectopic pregnancies with over 1500 mls of hemoperitoneum). 13% of the back-up calls were made to assist the hospitalist in case of complex obstetrical surgeries (cesarean hysterectomy for abnormal placentation and hemorrhage).
Conclusion: Our Gynecology/MIS Back Up call system covering 8 hospitals, provided Quality and Safe care for women, while assuring minimally invasive gynecologic services in a large academic and community medical practice.

Category: Robotics

SubCategory: Vaginal Aesthetic and Rejuvenation

10300 Robotic Vaginoplasty in MRKH Patient

Puntambekar S,[*,1] *Patil M,*[2] *Puntambekar A,*[3] *Puntambekar S*[1]. [1]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India;* [2]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, Maharashtra, India;* [3]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India*
*Corresponding author.

Study Objective: Robotic Vaginoplasty.
Design: Case Report.
Setting: Patient underwent Robotic (CMR Robotic system) vaginoplasty. Patient in lithotomy position under anaesthesia. Procedure done by Experienced & Qualified team.
Patients or Participants: 7-year unmarried patient came with primary amenorrhea with MRKH syndrome blind vaginal pouch, karyotyping 46XX with normal secondary sexual charecters.
Interventions: Robotic vaginoplasty by using peritoneum over rectum to create a neo-vagina
Measurements and Main Results: In modern era, minimal invasive procedure (laparoscopy, robotic) has replaced abdominal and vaginal approach of vaginoplasty. In this patient peritoneal flap is raised from rectum by staying in between the uterosacral ligament. Always remember fact "FAT BELONGS TO RECTUM IS DICTUM". Bladder dissected. Perineum opened at vaginal dimple making hole and peritoneal flap pulled below & sutured at mucocutaneous junction at introitus at 3, 5, 7, 9, clock position. Purse string suture then taken to close the peritoneum and it act as apex of neo-vagina. Mould is kept for 7 days, after 7 days mould exercise explained to patient. With no complications. With long term follow up, patient had good anatomical and functional vagina of length 8cm.
Conclusion: Robotic Vaginoplasty is easy, duplicable modality in modern world with less morbidity.

Category: Laparoscopy

SubCategory: Oncology

10302 Role of Laparoscopy Post NEO-Adjuvant Chemo-Therapy in Ovarian Cancer

Puntambekar S,[*,1] *Patil M,*[2] *Puntambekar A,*[3] *Inampudi S*[3]. [1]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India;* [2]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, Maharashtra, India;* [3]*Galaxy CARE Multispeciality Hospital Pvt. Ltd, Pune, India*
*Corresponding author.

Study Objective: Laparoscopy Post Neo-adjuvant Chemo-Therapy in Ovarian Cancer.
Design: Case Report.
Setting: Patient underwent 3D Laparoscopy. Patient in lithotomy position under anaesthesia. Procedure done by Experienced & Qualified team.
Patients or Participants: 55-year-old female, postmenopausal with stage IIIC ca ovary was received NACT (3 cycles of paclitaxel +Carboplatin) proceed to laparoscopic Debulking surgery.
Interventions: Diagnostic laparoscopy + debulking surgery (TLH +BSO+ OMENCTOMY + PARA-AOTIC LYMPH NODE DISSECTION + B/L PELVIC LYMPH NODE DISSECTION + APPENDICTOMY).
Measurements and Main Results: Following 3 cycles of NACT in ca ovary patient, debulking surgery can be possible by laparoscopy replacing open method. Patient followed up by 3 monthly intervals with ca 125 level & 3 monthly USG (A+P). PET scan done at the end of 6 month does not reveal any evidence of recurrence. Median follow up 18 months.
Conclusion: Optimal debulking can be achieved by laparoscopy. It improves surgical quality. Improves survival.

Category: Basic Science/Education

SubCategory: Other

10305 Approaching Surgery as a Left-Handed Surgeon: Tips & Tricks for Learning Surgery As a Leftie

Pierpoint SC,[*,1] *Miles S,*[2] *Homewood L*[3]. [1]*Obstetrics & Gynecology, University of Virginia, Charlottesville, VA;* [2]*Gynecologic Surgery and Obstetrics, Mike O'Callaghan Military Medical Center, Nellis Air Force Base, NV;* [3]*Minimally Invasive Gynecologic Surgery, University of Virginia, Charlottesville, VA*
*Corresponding author.

Study Objective: Identify and discuss the specific challenges faced by left-handed medical students and beginner surgeons, and review tips for success.
Design: Educational Video.
Setting: N/A.
Patients or Participants: N/A.
Interventions: N/A.
Measurements and Main Results: N/A.
Conclusion: Left-handed medical students and residents face increased anxiety and cognitive load around surgical training. There are also technical challenges that left-handed surgeons face and can lead to disadvantage in the OR. Focused preparation with instrument handling, mirror-video techniques, and post-operative review and feedback can help lead to increased success.

Category: Laparoscopy

SubCategory: Pelvic Pain

10310 Stepwise Approach to Laparoscopic Trachelectomy Following Supracervical Hysterectomy

Lin E, Sendukas E, Young R, Chao L. Obstetrics & Gynecology, UT Southwestern Medical Center, Dallas, TX*
*Corresponding author.

Study Objective: To demonstrate steps for safely performing a laparoscopic trachelectomy.
Design: A single case of a patient undergoing laparoscopic trachelectomy for cyclic pelvic pain after supracervical hysterectomy.
Setting: The patient underwent her planned surgery at a large-volume county hospital. Video footage was obtained during this procedure.
Patients or Participants: A 49-year-old woman who had undergone a prior abdominal supracervical hysterectomy, presented with cyclic pelvic pain for several years. Pelvic ultrasound and MRI demonstrated a 5cm mass at the vaginal cuff, concerning for a cervical remnant. The patient elected to undergo a laparoscopic trachelectomy.
Interventions: Safe laparoscopic trachelectomy can be achieved by following these steps:
1. Lyse any adhesions to the cervical stump and surrounding anatomy.
2. Backfill the bladder to delineate the bladder borders.
3. Begin making the bladder flap to allow for safe cervical dilation.
4. Dilate the cervix under direct visualization.
5. Place a manipulator with colpotomy cup if able; alternatively, Breisky Navratil retractors can be placed in the anterior and posterior vaginal fornices to assist with manipulation and colpotomy.
6. Complete the bladder flap and safely dissect the bladder below the colpotomy cup.
7. Continue this peritoneal excision circumferentially around the cervical stump.
8. Identify critical adjacent structures, such as the ureter; ureterolysis is often necessary due to ureteral proximity to the cervical stump.
9. Ligate and lateralize the uterine vessel "pedicle" remnants bilaterally.
10. Complete the circumferential colpotomy.

Measurements and Main Results: The presented case demonstrates successful execution of the above steps and ultimately safe completion of laparoscopic trachelectomy.
Conclusion: Though the reported incidence of trachelectomy following a supracervical hysterectomy is low (2%), it is important for the gynecologic surgeon to be prepared to perform this procedure for this subset of patients. Here we demonstrate a clear, stepwise approach for completing a laparoscopic trachelectomy, providing gynecologic surgeons with a strategy to safely manage the unique challenges presented by the cervical stump and maintain a minimally invasive approach.

Category: Basic Science/Education

SubCategory: Endometriosis

10318 Effective Education - Preparing Patients for Endometriosis Surgery

Young RJ, Muir T, Shields JK, Lin E, Kho KA. Obstetrics & Gynecology, UT Southwestern Medical Center, Dallas, TX*
*Corresponding author.

Study Objective: To review strategies for effective patient education and demonstrate a high quality, level-appropriate patient education video on the surgical management of endometriosis.
Design: 1. Review of current literature and strategies for effective patient education.
2. Exemplify a patient educational video on minimally invasive endometriosis surgery with narrated surgical footage.
Setting: Personal health literacy is the degree to which individuals have the ability to find, understand, and use information to inform health-related decisions and actions. Oftentimes, patients feel that their doctor does not supply them with adequate information. Therefore, patients turn to online resources and social media, which are often not at an appropriate understanding level and lack direct physician involvement. Studies have found that using effective patient educational videos can improve patient understanding, satisfaction, and reduce physician consent time.
Patients or Participants: A combination of medical illustrations, surgical photos, and surgical video footage were used to describe endometriotic implants and their common locations as well as demonstrate different techniques used for endometriosis surgery.
Interventions: All patient education materials, including videos, should be approached with the following key strategies:
1. Provide information at the 5th-6th grade level using simple words and short sentences with a focused scope.
2. Incorporate education at every patient interaction.
3. Use alternatives to written information such as audio or video with basic visual aids.
4. Assess and reassess patient understanding and beliefs.
5. Involve a patient educator in the development of materials.

Measurements and Main Results: The aforementioned strategies were implemented in the development of a patient educational video focusing on surgery for endometriosis.
Conclusion: Creation of patient-centered educational materials is essential to patient understanding and participation in decision-making for complex gynecologic conditions and surgical management, including endometriosis.

Category: Adenomyosis

SubCategory: Research

10322 Use of Ultrasound Shear-Wave Elastography to Detect Adenomyosis: A Pilot Study to Characterize Young's Modulus

Lee EM,[*,1] *Mansuria S,*[2] *Kim K,*[3] *Elishaev E,*[4] *Soong TR,*[4] *Skvarca L,*[4] *Guido R*[5]. [1]*Obstetrics, Gynecology, and Reproductive Sciences, UPMC-Magee Womens Hospital, Pittsburgh, PA;* [2]*Obstetrics, Gynecology, and Reproductive Sciences, University of Pittsburgh, Pittsburgh, PA;* [3]*Biomedical Engineering, University of Pittsburgh - Swanson School of Engineering, Pittsburgh, PA;* [4]*Pathology, University of Pittsburgh, Pittsburgh, PA;* [5]*Obstetrics, Gynecology and Reproductive Sciences, UPMC Magee Womens Hospital, Pittsburgh, PA*
*Corresponding author.

Study Objective: Ultrasound shear-wave elastography (USE) is an emerging technology used to measure the stiffness of tissues using acoustic pulse waves. There are pathologic changes to an adenomyotic uterus that may alter myometrial stiffness. We conducted a pilot study to investigate the properties of USE on uterine specimens from patients with clinically suspected adenomyosis.
Design: IRB-approved prospective observational cohort study.
Setting: Tertiary academic center.
Patients or Participants: We recruited 20 patients with clinically suspected adenomyosis planning hysterectomy. We excluded patients with known uterine fibroids that may interfere with the assessment of the uterine corpus.
Interventions: Following hysterectomy, the specimen was scanned using USE. To standardize measurements, an ultrasound probe was held on a ring stand, and measurements were taken from the anterior and posterior aspects on the right and left sides of each uterus at the level of the fundus, mid-uterine corpus, and lower uterine segment. The specimen was then divided into segments and grossly examined for evidence of adenomyosis. Pathology slides were created from several areas of interest based on elastography measurements. Slides were also taken from multiple standardized areas of the uterus.
Measurements and Main Results: We collected demographic, pregnancy, surgical, and hormone-use history. On elastography, we measured Young's (E) modulus, which is a measurement of tensile elasticity (kPa). Four measurements were taken from each location, and this was used to generate a median value. We also measured the time elapsed between retrieval of the specimen from the body to ultrasound evaluation, as well as the time between radiographic and gross pathologic assessment. All data points have been collected but analysis is ongoing.
Conclusion: Preliminary results from our pilot study confirms the feasibility of our protocol using ultrasound elastography on ex-vivo uterine specimens. Our data suggest that ultrasound elastography may be a tool to evaluate for adenomyosis and provides general threshold values that warrant further investigation with a full in-vivo study.

Category: Tissue Containment & Extraction Technologies

SubCategory: Laparoscopy

10327 Laparoscopic Direct Trocar Technique for Controlled Drainage of Large Benign Ovarian Cysts

Gao TY, Suen MW. Obstetrics and Gynecology, University of British Columbia, Vancouver, BC, Canada*
*Corresponding author.

Study Objective: To demonstrate a minimally invasive, easy to perform direct trocar technique for controlled drainage of large benign ovarian cysts with no spillage.
Design: N/A.
Setting: OR setting involved both patients in dorsal lithotomy, arms tucked. The primary surgeon was on the patient's right side, the first assist on the patient's left side. The second assist was driving the uterine manipulator.
Patients or Participants: 2 patients were part of this video. They were seen through our clinic, and were deemed suitable candidates for this procedure. They had pre-operative imaging, bloodwork, and tumor marker screening, and were both suspected to have benign cysts.
Interventions: Both patients underwent a laparoscopic direct trocar drainage of their benign cyst successfully. Patient #1 then underwent a laparoscopic right salpingo-oophorectomy. Patient #2 underwent a laparoscopic bilateral salpingo-oophorectomy.
Measurements and Main Results: No cyst spillage was noted in either of the cases. No conversion to laparotomy was required. Both patients recovered well and had an uncomplicated post operative course.
Conclusion: The direct trocar technique through a laparoscopic approach is a simple, effective, and rapid way of large cyst decompression and drainage without spillage. Compared to other techniques, this technique is cost effective, quick, and prevents an open laparotomy. This technique can be used safely for patients with large benign adnexal masses.

Category: Endometriosis

SubCategory: Pelvic Pain

10332 Association of Norethindrone Treatment Duration and Patient Characteristics with Improvement of Endometriosis-Associated Pain

Rosario SA,[1] Al Jumaily M,[2] Tanner J,[3] Mikhail E[4]. [1]University of South Florida, Tampa, FL; [2]Obstetrics and Gynecology, University of South Florida, Tampa, FL; [3]College of Public Health, University of South Florida, Tampa, FL; [4]Minimally Invasive Gynecologic Surgery, University of South Florida, Tampa, FL*
*Corresponding author.

Study Objective: To identify risk factors of poor response in pain improvement in endometriosis patients who were prescribed norethindrone.
Design: This study is a retrospective analysis of patients who were prescribed norethindrone for endometriosis. We examined associations between pain improvement and sociodemographic and clinical characteristics, including patient age, race, phenotype of endometriosis, treatment duration, body mass index (BMI), and surgical history. Chi-square and Fisher's exact tests were used to assess statistically significant differences between patient characteristics and pain improvement. Log binomial regression was used to estimate risk ratios (RR) and 95% confidence intervals (CI) representing the association between patient characteristics and pain improvement.
Setting: Academic referral center for endometriosis.
Patients or Participants: This study was conducted on all patients who presented to our center from 2016-2022 and were prescribed norethindrone. Patients who had missing pain and length of treatment data, a treatment duration of <4 months, and/or other concurrent medical treatments were excluded. A total of 145 patients were included in the final analysis.
Interventions: N/A
Measurements and Main Results: 120 patients (84%) reported improvement of pain with norethindrone. Patient age, race, and BMI were not associated with significant decrease in treatment response. A length of treatment of ≤ 6 months was significantly associated with no pain improvement (RR:5.40, 95%CI:1.62-18.00). Phenotype of endometriosis, and concomitant fibroids or adenomyosis were not associated with a significant difference in treatment response. Patients with a history of excision of endometriosis were also at a higher risk of no pain improvement, though not statistically significant (RR:3.00, 95%CI:0.74-12.19).
Conclusion: Norethindrone was associated with pain improvement in most patients in this study. Norethindrone may be an effective treatment for endometriosis patients with different phenotypes, as well as those with concomitant fibroids and adenomyosis. This study elucidates patient characteristics that may be associated with pain improvement with norethindrone; this can aid clinicians in formulating treatment plans for patients with endometriosis.

Category: Adenomyosis

SubCategory: Pelvic Pain

10333 Utilization and Validation of a New Ultrasound Staging System for the Diagnosis of Adenomyosis in Premenopausal Women with Pelvic Pain/AUb

White K,[1] Kalyanaraman R,[1] Newmark A,[2] Flynn K,[1] Morgan M,[1] Nilsson W,[2] Luciano D,[2] LaMonica R[1]. [1]OB/GYN, St. Francis Hospital, Hartford, CT; [2]OB/GYN, UConn Health, Farmington, CT*
*Corresponding author.

Study Objective: The true incidence of adenomyosis has been difficult to determine given the lack of standardization of diagnostic criteria, however over the past decade imaging modalities have made strides at diagnosing adenomyosis non-invasively through MRI, 2D and 3D ultrasounds. Our goal is to utilize a recently validated ultrasound staging system in our patient population to correlate ultrasound staging of adenomyosis with

clinical symptoms and validate this scoring system through comparison using two blinded providers.
Design: Prospective observational study.
Setting: Three non-affiliated outpatient facilities.
Patients or Participants: 92 premenopausal women ages 18-55 presenting for ultrasounds indicated by abnormal uterine bleeding, dysmenorrhea, dyspareunia, pelvic pain or infertility.
Interventions: All patients completed a written survey about their symptoms utilizing the VAS scale to score symptoms of pelvic pain, dysmenorrhea, dyspareunia, bowel, and bladder symptoms, and a PBAC survey to assess their menstrual blood loss. Pelvic ultrasounds were assessed blinded by two researchers utilizing a recently validated ultrasound staging system for non-invasive diagnosis and staging of adenomyosis.
Measurements and Main Results: 92 patients met inclusion criteria with a mean age of 38. Patients were predominantly white, non-hispanic. 29.3% of women were nulliparous. The mean BMI was 29.8. When looking at dysmenorrhea, abnormal uterine bleeding, pelvic pain, dyspareunia, and/or infertility, there does not appear to be any statistically significant difference between women scored mild, moderate or severe disease in relation to their VAS score, however there is a trend towards higher PBAC scores in women that scored with moderate to severe disease. There appears to be strong interrater reliability between two blinded researchers when comparing the ultrasound staging system.
Conclusion: Our study revealed that the extension of disease appears to correlate more with bleeding scores however it does not have a correlation with severity of symptoms. Larger studies may show a stronger association, however there appears to be good interrater reliability with the ultrasonographic scoring system.

Category: Fibroids

SubCategory: Robotics

10348 Rapidly Growing Uterine Fibroid While on Biologic Immunosuppressive Therapy: A Case Report on Belimumab

Mann P, Reinert A. OB/GYN, LAC+USC, Los Angeles, CA*
*Corresponding author.

Study Objective: Median growth of fibroids has been estimated at 9.0% per 6 months, varying from 18% to 120% per year. Here, we describe a case report of a patient who presented with much more rapid growth in fibroid volume in a shorter period of time while on the biologic immunosuppressant belimumab.
Design: Case report.
Setting: Outpatient/inpatient.
Patients or Participants: 32 y.o. G0 with new onset, heavy menses.
Interventions: 6 months after initiation of belimumab therapy.
Measurements and Main Results: An ultrasound done 9 months after initiation showed a fibroid measuring $8.9 \times 6.9 \times 8.0$ cm (ellipsoid volume 2053cm^3). At 13 months after initiation, it measured $13.2 \times 9.8 \times 9.1$cm (4931cm^3; 140% increase in 4 months). During an emergency vaginal myomectomy, a $5.0 \times 3.0 \times 1.0$ cm mass and additional 247g of benign leiomyoma was removed. Within 2 months thereafter, at 15 months after initiation of belimumab, the fibroid was even larger, measuring $17.0 \times 8.5 \times 8.8$ cm (5326 cm^3). This represents an 8% increase in size from the second ultrasound.
Conclusion: As belimumab is a biologic immunosuppressant, this case report suggests an immune-related component of fibroid growth. Belimumab is an antibody that specifically binds the soluble form of B lymphocyte stimulator (BLyS), but it may also have affinity for other receptors and have downstream cell-signaling effects in pathways related to uterine fibroids. For example, both B lymphocytes and endometrial cells are known to utilize estrogen receptors and signaling via IL-6, offering potential mechanisms of interaction. Among other possible pathways, PI3K/AKT-mTOR has been shown in human and rat models to be significantly upregulated in the pathogenesis of uterine fibroids. Theoretically, belimumab may be implicated in fibroid growth if it were to directly activate this pathway or indirectly cause expression of G-protein-coupled-receptor 10 or loss of tumor suppressor NRSF/REST.
Further research regarding belimumab and fibroid cell-signaling pathways must be done. Advances may provide potential immunologic, non-hormonal, and non-surgical treatments that target fibroid growth.

Category: Laparoscopy

SubCategory: Reproductive Medicine

10349 Pregnancy Outcomes Following Abdominal Laparoscopic Surgeries during Pregnancy

Watad H,[1] Patt Y,[2] Ohayon A,[3] Bart Y,[4] Meir R,[2] Cohen SB[2]. [1]Sheba Medical Center, Ramat Gan, Israel; [2]Sheba Medical Center, Ramat Gan, Select, Israel; [3]Sheba Medical Center, Ramat-Gan, Israel; [4]Obstetrics & Gynecology, Sheba Medical Center, Tel-Hashomer, Israel*
*Corresponding author.

Study Objective: The aim of our study was to compare obstetric and neonatal outcomes of laparoscopic abdominal surgeries performed during pregnancy according to trimester.
Design: A retrospective cohort study between April 2011 and March 2020.
Setting: A single tertiary affiliated medical center.
Patients or Participants: All patients who underwent laparoscopic abdominal surgery during pregnancy and delivered at our hospital were included, 191 patients were included.
Interventions: Laparoscopic abdominal surgery.
Measurements and Main Results: A total of 191 women underwent laparoscopic surgery during pregnancy: 95 (50%), 82 (43%) and 14 (7%) at first, second and third trimester respectively. Baseline characteristics and obstetric history were comparable between groups. More patients underwent adnexal surgery at first and third trimester compared to mid trimester (62.1%, 50% and 41.5% respectively; p=0.02). There was increasing trend of using Hasson entry technique at second and third trimesters compared to first trimester (55.3%, 72.7% and 5.9% respectively; p<0.001). Conversion to laparotomy and post operative ileus rates were higher at third trimester, however rates of other intraoperative and postoperative complications were comparable. Pregnancy and neonatal outcomes were also comparable. Rate of preterm labor (PTL) was 15.7%, in multivariate regression analysis multifetal pregnancy (aOR 95% CI 16.6, 4.97-55.69) and adnexal surgery (aOR 95% CI 0.31,0.12-0.79) were independently associated with PTL.
Conclusion: Laparoscopic abdominal surgery during pregnancy is feasible and relatively safe regardless of pregnancy trimester. Hasson technique was more used during third trimester compared to first and second trimesters, and rates of conversion to laparotomy and post operative ileus were higher at third trimester compared to first and second trimesters. However, pregnancy outcomes following surgery were comparable between the three trimesters.

Category: Research

SubCategory: Other

10357 Does Sexual Function Prior to Hysterectomy Impact Post-Operative Regret?

Shalabi F,[1] Novoa V,[2] Bossick A,[3] Su WT,[3] Sitarik A,[3] Wegienka G,[3] Vilkins A,[1] Abood J[1]. [1]Obstetrics and Gynecology, Henry Ford Health, Detroit, MI; [2]Henry Ford Hospital, Detroit, MI; [3]Department of Public Health Sciences, Henry Ford Health, Detroit, MI*
*Corresponding author.

Study Objective: To investigate the pattern of regret after hysterectomy as it relates to sexual function.

Design: Prospective cohort study of women undergoing hysterectomy.
Setting: Academic tertiary medical center.
Patients or Participants: 456 women who underwent hysterectomy for benign indications.
Interventions: None.
Measurements and Main Results: Participants undergoing hysterectomy for benign indications and without concurrent urogynecologic surgery were recruited and asked to complete a baseline survey 2-weeks prior to their scheduled procedure, as well as seven follow-up surveys up to 12-months post-operatively. Using latent class analysis, overall regret scores were derived from five validated survey questions and were used to determine patterns of regret following hysterectomy. Three classes were identified: high regret that remained high over time (Class 1); high regret that lowered over time (Class 2); and low regret that remained low (Class 3). Women who reported they were moderately dissatisfied with their sexual life prior to surgery were more likely to be in Class 1 relative to the Class 3 compared with women who were very satisfied with their sexual life (multinomial logistic regression, risk ratio=4.92, 95% CI: 1.48, 16.31).
Conclusion: Self-reported sexual dissatisfaction prior to surgery is associated with postoperative regret. Gynecologists and their patients may take this into consideration during preoperative counseling.

Category: Laparoscopy

SubCategory: Other

10367 The Role of Intraoperative Tranexamic Acid in Hysterectomy

Davis Rivera LB, Myers E, Hoffman MK. Obstetrics and Gynecology, Christiana Care, Newark, DE*
*Corresponding author.

Study Objective: Determine associations between intraoperative administration of Tranexamic Acid (TXA) during hysterectomy and postoperative blood transfusion as a surrogate marker for blood loss. The long-term aim is to identify methods to reduce clinically significant blood loss.
Design: Retrospective cohort study at a single institution using a database of all hysterectomies over a 1-year period from 2020-2021 created using procedure codes for laparoscopic, robotic assisted, and vaginal hysterectomy.
Setting: A community based tertiary care hospital.
Patients or Participants: 1152 patients undergoing hysterectomies for both benign and oncologic indications were performed over the study year. 62 patients met inclusion criteria in the treatment arm and 62 patients were matched by age, BMI, race, and starting hemoglobin level for a total of 124 patients.
Interventions: Treatment arm received intraoperative TXA; the matched cohort did not.
Measurements and Main Results: The primary outcome studied was the incidence of transfusion within 30 days of surgery amongst patients who did vs. did not receive TXA at the time of surgery. Secondary outcomes included readmission rates, length of hospital stay, and estimated blood loss. Baseline characteristics between the treatment and control groups were well matched. There was no significant difference in transfusion with 25.8% of the treatment arm receiving blood vs. 33.9% in the control arm (95% CI 0.68-3.19, P=0.33). TXA administration was associated with a higher median estimated blood loss (400 mL in treatment vs. 300 mL in control, P=0.002). No differences were seen between groups with regards to operative time, or length of hospital stay. Independent factors significantly associated with transfusion were preoperative hemoglobin of <9 and public insurance.
Conclusion: Intraoperative TXA was associated with a modest increase in estimated blood loss, but was not associated with a significant difference in the rate of blood transfusion. This likely reflects surgeon preferences in managing increases in subjective blood loss. Prospective studies are necessary for standardization.

Category: Fibroids

SubCategory: Laparoscopy

10374 Laparoscopic Myomectomy of Torsed Leiomyoma in Pregnancy

Koi TG,[1] Manning CT,[2] Joshi A,[3] Farrell AS,[2] Wang CF,[3] Gagliardi E[2]. [1]Minimally Invasive Gynecologic Surgery, Newton-Wellesley Hospital, Massachusetts General Hospital, Newton, MA; [2]OBGYN, Beth Israel Deaconess Medical Center, Boston, MA; [3]OB/GYN, Beth Israel Deaconess Medical Center, BOSTON, MA*
*Corresponding author.

Study Objective: To demonstrate the diagnosis and management of a torsed leiomyoma in pregnancy.
Design: Surgical video.
Setting: Operating room at academic facility, patient placed in lithotomy position under general anesthesia.
Patients or Participants: Single patient case study.
Interventions: Diagnostic laparoscopy, laparoscopic resection of leiomyoma.
Measurements and Main Results: Pathology report consistent with degenerating leiomyoma, post operative clinical visit with resolution of pain.
Conclusion: Imaging is often insufficient to definitely diagnose or rule out torsion of fibroids. Surgical exploration is indicated when torsion of leiomyomas is suspected due to the risk of necrosis and sepsis.

Category: Endometriosis

SubCategory: Robotics

10375 Pelvic Sidewall Peritonectomy for Superficial Endometriosis

Mian S,[1] Klebanoff J,[2] Lee E,[1] Gobern J[3]. [1]Obstetrics and Gynecology, Mainline Health- Lankenau Medical Center, Wynnewood, PA; [2]Main Line Health, Wynnewood, PA; [3]Obstetrics & Gynecology, Mainline Health-Lankenau Medical Center, Wynnewood, PA*
*Corresponding author.

Study Objective: The objective of this video is to demonstrate a reproducible approach to performing a pelvic sidewall peritonectomy for the management of superficial endometriosis.
Design: Educational surgical video.
Setting: Community based hospital system.
Patients or Participants: Patients undergoing surgery for excision of superficial endometriosis. This is a case of a 27-year-old female with a history of pelvic pain, dysmenorrhea, high-tone pelvic floor dysfunction, dyspareunia, and dyschezia undergoing a robotic excision of endometriosis.
Interventions: This educational video reviews a step-by-step approach to performing a pelvic sidewall peritonectomy. It offers a surgical approach aimed at optimizing ease and efficiency, while also highlighting pertinent anatomy and surgical landmarks. We aim to provide a tutorial for an effective, safe, and reproducible approach to surgically excising endometriosis from its most common location which is the pelvic sidewall. Recognition of key anatomical structures is paramount to optimizing good clinical outcomes. It leads to sound surgical technique which can allow gynecologic surgeons to provide minimally invasive surgical care in complex and technically challenging endometriosis cases.
Measurements and Main Results: N/A.
Conclusion: Endometriosis is a chronic estrogen-dependent, inflammatory disease that is most commonly found in the pelvis. The standard of care for most gynecologic surgeons is treatment of endometriosis lesions through surgical excision whenever feasible. Studies have demonstrated improved outcomes in pain, quality of life, and infertility with the surgical excision of endometriosis. This educational video highlights a reproducible approach to safely and effectively performing a pelvic sidewall peritonectomy in the setting of superficial endometriosis. Mastering these skills

will allow surgeons to offer minimally invasive surgery in even the most complex endometriosis cases.

Category: Basic Science/Education

SubCategory: Endometriosis

10380 The Self-Perceived Readiness of Learners to Surgically Treat Endometriosis

Sarna N,[*,1] Kroft J*[2]. [1]*Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre, Toronto, ON, Canada;* [2]*Obstetrics & Gynaecology, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: To evaluate the comfort of trainees in surgically treating endometriosis.
Design: A survey was electronically distributed to 22 Canadian minimally invasive gynaecologic surgery (MIGS) fellows by the Canadian Society for the Advancement of Gynaecologic Excellence (CanSAGE). The questionnaire was modified from a pre-validated survey used to assess practicing gynaecologists' comfort in surgically managing endometriosis.
Setting: N/A.
Patients or Participants: MIGS fellows in Canada.
Interventions: A pre-validated questionnaire.
Measurements and Main Results: The survey response rate was 77% (17/22). All fellows felt that they were adequately trained to treat endometriosis medically. Only 75% felt that their training adequately prepared them to offer surgical management of endometriosis. Surgically, 87.5% and 75% of MIGS fellows felt comfortable offering surgery to patients with stage 1-2 disease and stage 3-4 disease respectively. Of those who did not feel comfortable performing excision for stage 3-4 disease, 25% did not plan to refer to someone trained in advanced excision of endometriosis. All respondents planned to treat endometriosis laparoscopically via excision. The most common barriers that were identified in offering complete laparoscopic treatment of endometriosis include a lack of OR time, lack of access to consulting services (general surgery and urology), lack of access to adequate preoperative imaging, and inadequate surgical fees.
Conclusion: Not all Canadian MIGS fellows are comfortable in the surgical management of endometriosis, indicating intrinsic differences between programs. Further research is required to determined how training can be improved so that Canadian patients with endometriosis can receive optimal surgical management.

Category: Hysteroscopy

SubCategory: New Instrumentation or Technology

10381 Is Nanoscope Technology the Future of Hysteroscopy? – A Video Case Series

Rook C, Lam A. Centre for Advanced Reproductive Endosurgery (CARE), Sydney, NSW, Australia*
*Corresponding author.

Study Objective: To evaluate the performance of arthroscopic "NanoScope" technology when adapted for gynaecological endoscopy (vaginoscopy and hysteroscopy), and consider its potential application in the gynaecological space.
Design: 6 patient video case series (4 included for video abstract).
Setting: Despite reportedly high patient acceptability rates, outpatient hysteroscopy has very low uptake in Australia. Reasons for this might include concern for patient discomfort, poor access, and resource/equipment requirements.
Our case series examined the usability and image quality of compact, portable, ultra-thin NanoScope technology as a substitute for standard hysteroscope under general anaesthetic.
Patients or Participants: Patients already undergoing diagnostic or therapeutic hysteroscopy were recruited for optical endometrial evaluation using NanoScope. Standard hysteroscopic examination was also used to ensure equivalence of findings.
Interventions: The 1.9mm (0.07in.) diameter NanoScope with handpiece contains a fibre optic bundle with LED light and high-resolution camera sensor which connects to a laptop-style hard drive and display console. The scope was introduced into the uterine cavity using a 2.2mm (0.09in.) diameter fluid-introducing sheath for saline hydrodistension. Still and video images were obtained for quality evaluation.
Measurements and Main Results: Images obtained via NanoScope (as per accompanying video abstract) were of equivalent diagnostic utility to standard hysteroscope. NanoScope was readily adaptable to vaginoscopy and hysteroscopy, easy to use and produced high-quality images for intracavitary diagnosis. It passed easily into the cervical canal and uterine cavity without need for cervical clamping or dilatation.
Conclusion: NanoScope technology offers an exciting potential alternative to traditional inpatient or hospital-based diagnostic hysteroscopy. The compact system and ultra-thin scope may have a place in office-based point-of-contact hysteroscopy in future practice. Potential benefits include improved patient comfort, reduced demand on hospital resources and cost-savings to both patients and the healthcare system.
Further research is needed to study patient acceptability and feasibility of the device in the outpatient hysteroscopy setting.

Category: Reproductive Medicine

SubCategory: Oncology

10384 Ovarian Cryopreservation – The Time Is Now: A Laparoscopic Approach to Tissue Harvesting.

Sarna N,[*,1] Glass K,*[2] Kroft J*[2]. [1]*Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre, Toronto, ON, Canada;* [2]*Obstetrics & Gynaecology, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: To review an approach to ovarian tissue cryopreservation. Specifically, we demonstrate a surgical approach for ovarian sampling that maximizes number of primordial oocytes retrieved and minimizes native ovarian damage.
Design: N/A.
Setting: Advances in oncologic treatments have increased survival times of patients with malignancies thus resulting in a strong interest in fertility preservation for these patients. Treatments offered include GnRH agonist use prior to the commencement of chemotherapy, a method now considered insufficient by the ASRM[1]; relocation of the ovaries outside of the pelvis in those undergoing radiotherapy, and ovarian stimulation followed by oocyte retrieval. Ovarian relocation only benefits those undergoing pelvic radiation; ovarian stimulation can result in treatment delays and is not an option for prepubertal girls. Ovarian tissue cryopreservation is thus a fast and safe approach that should be explored.
Patients or Participants: Patients being treated for malignancy who are needing an expedited way to preserve fertility and prevent delays in oncologic treatment.
Interventions: We present our laparoscopic approach to ovarian biopsy in the context of ovarian tissue cryopreservation.
Measurements and Main Results: N/A.
Conclusion: Over 130[2] live births have been reported in women completing ovarian cryopreservation. Accordingly, it should be offered to patients as it can be completed expeditiously, reducing delays in oncologic management; additionally, it can be offered to prepubertal girls. Ovarian cryopreservation remains underutilized however is a safe, efficient, and feasible form of fertility preservation.

Category: Reproductive Medicine

SubCategory: Robotics

10387 Robotic Assisted Laparoscopic Tubal Reanastomosis

Duarte MG,[*,1] *Dadrat ACE,*[*,2] *Borovich A,*[2] *Bral P*[2]. [1]*Department of Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY;* [2]*Obstetrics and Gynecology, Maimonides Medical Center, Brooklyn, NY*
*Corresponding author.

Study Objective: This video highlights the technique for robotic-assisted laparoscopic tubal reanastomosis.
Design: Surgical video.
Setting: This surgery was performed at a tertiary teaching hospital.
Patients or Participants: 38-year-old gravida 2 para 2 with prior bilateral tubal ligation at the time of her second cesarean delivery, now desiring future fertility.
Interventions: The patient underwent robotic-assisted laparoscopic bilateral tubal re-anastomosis and myomectomy. Two posterior pedunculated fibroids were excised. The proximal and distal ends of the fallopian tubes were cut transversely. Fine dissection was performed to ensure the muscularis layer was opened. Chromopertubation with methylene blue was performed to confirm patency from the proximal ends. A 5-French Neonatal feeding tube was used to confirm patency from the distal ends. One stay suture was placed at the junction between the mesosalpinx and the 6 o'clock portions of the tubes that were to be approximated. The fallopian tubes were then reapproximated using a 2-layer technique: sutures were placed incorporating the muscularis layer at 3, 9, 12 and 6 o'clock with 6-0 polyglactin 910. The serosal layer was reapproximated in a circumferential manner using 6-0 poliglecaprone-25 suture. The stay suture was then removed. This was performed bilaterally.
Measurements and Main Results: Chromopertubation with methylene blue was performed and patency of the fimbriated ends was confirmed with no spillage at the anastomotic sides.
Conclusion: Optimal exposure, decreased blood loss, ease of suturing, and comparable rates of pregnancy to laparoscopic surgery, make robotic assisted laparoscopic technique an excellent option for tubal reanastomosis.

Category: Gender Reassignment Surgery

SubCategory: Laparoscopy

10392 Vaginal Cuff Closure in Transgender Men Undergoing Total Laparoscopic Hysterectomy: Comparing Postoperative Pain and Gender Dysphoria

Marbin SJ,[*,1] *Barnett RL,*[2] *Hinkes S,*[2] *Lubarsky M,*[2] *Fein LA*[1]. [1]*Obstetrics, Gynecology, and Reproductive Sciences, University of Miami/Jackson Memorial Health System, Miami, FL;* [2]*University of Miami, Miami, FL*
*Corresponding author.

Study Objective: Total laparoscopic hysterectomy (TLH) is the preferred surgical approach for transgender men (TGM). Pain associated with TLH has been studied in TGM, though unrelated to vaginal cuff closure (VCC) technique. Gender dysphoria (GD), distress associated with discordance between assigned sex and identified gender has also not been assessed with relation to TLH. We assessed post-operative pain and GD following TLH in TGM using two VCC methods.
Design: Adult TGM underwent TLH between September 2020 and March 2023. Demographic, medical (i.e., years on testosterone), and surgical data (i.e., procedure time) were collected (IRB#20200965). Pain and GD were surveyed pre-operatively and on postoperative days one, 14, and 42. General, abdominal, and genital pain, and general and genital GD were assessed with visual analogue scales from 0-10. Changes in mean pain and GD were calculated using ANOVA with repeated measures.
Setting: Hysterectomies were performed using standard laparoscopic technique by the same surgeon at a university hospital.
Patients or Participants: Thirteen participants ages 18-67 (mean=31) were included. Sixty-two (n=8) percent and 38% (n=5) of participants underwent VCC via laparoscopic or vaginal approaches.
Interventions: VCC was performed vaginally or laparoscopically using Endostitch device or via robotic approach.
Measurements and Main Results: Mean years on testosterone were 3.25 and 5.4 and mean procedure time was 125 and 113 minutes in the laparoscopic and vaginal groups, respectively (p= 0.339, p =0.292). Mean scores for general, abdominal, and genital pain were not significantly different between groups (p=.492, p=.255, p=.476). Mean scores for general and genital GD were not significantly different between groups (p=.454, p=.347).
Conclusion: Our results suggest either VCC method can be performed during TLH for TGM without differences in postoperative pain or GD, though a larger sample is needed. Surgical planning need not be limited by resource availability, surgeon experience, or cost.

Category: Natural Orifice Surgery

SubCategory: Laparoscopy

10393 Alternate Approach to Anterior Colpotomy Using vNOTES

Saba C, Warren L,* Tyler L. Sunrise Health GME Consortium, Las Vegas, NV*
*Corresponding author.

Study Objective: To present an alternate approach to completing the anterior colpotomy to obtain anterior peritoneal entry during vaginal surgery.
Design: The presented study includes a surgical video example to present this technique.
Setting: Patient was placed in dorsal lithotomy Trendelenburg position.
Patients or Participants: The presented case example is a patient who underwent vNOTES hysterectomy with history of cesarean section.
Interventions: Hysterectomy via a vNOTES approach.
Measurements and Main Results: The presented case began with dissection of the anterior and posterior colpotomies. Due to previous cesarean section and resulting scarred tissue, the anterior colpotomy was difficult to create. Rather than continuing the dissection with uncertainty, the Alexis retractor was inserted prior to completion of the anterior colpotomy. The posterior aspect of retractor was inserted intraperitoneally via posterior colpotomy. The anterior aspect was placed in the anterior superior portion of vaginal vault. The GelPoint was then attached, and insufflation obtained. With intraabdominal distension, the anterior peritoneal reflection becomes much clearer, allowing for differentiation of peritoneum from bladder. The anterior colpotomy is then completed without hesitation or concern for possible injury. The remainder of the hysterectomy is completed in the usual fashion.
Conclusion: In conclusion, in cases of difficult anterior colpotomy, this can be delayed until after abdominal insufflation to aid in detection of peritoneal reflection and allow easier and more certain anterior peritoneal access during vaginal surgery.

Category: Urogyn/Pelvic Floor Disorders

SubCategory: Laparoscopy

10399 An Approach to Apical Support: Laparoscopic McCall's Culdoplasty

Shishkina A,[*,1] Shivji A,[2] Miazga E,[3] Simpson A,[2] Shore E[2]. [1]Obstetrics and Gynecology, University of Toronto, Toronto, ON, Canada; [2]Obstetrics and Gynecology, Unity Health − St. Michael's Hospital, University of Toronto, Toronto, ON, Canada; [3]Obstetrics and Gynecology, Unity Health − The Credit Valley Hospital, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: Prevalence of pelvic organ prolapse is 41%-50%. It negatively impacts quality of life due to associated urinary, ano-rectal, and sexual dysfunction. This educational video reviews pelvic support levels and pelvic organ prolaspe, demonstrates laparoscopic McCall's culdoplasty technique, and discusses possible intra- and post-operative complications.
Design: This video uses still images, video footage, and narration to review pelvic organ prolapse and laparoscopic McCall's culdoplasty. The technique is presented in five steps, addressing the advantages of this approach and possible surgical complications.
Setting: Tertiary hospital OR.
Patients or Participants: Patients undergoing total laparoscopic hysterectomy and prophylactic laparoscopic McCall's cordocentesis.
Interventions: Prophylactic laparoscopic McCall's culdoplasty.
Measurements and Main Results: Vaginal apical suspension is recommended at the time of hysterectomy to prevent future vault prolapse. The five steps of Laparoscopic McCall's include (1) marking uterosacral ligaments, (2) vault closure with interrupted angle sutures, (3) vault hemostasis, (4) McCall's placement and (5).
Conclusion: Prophylactic McCall's culdoplasty at the time of hysterectomy is superior at preventing future prolapse compared with other techniques. Laparoscopic approach is efficient, safe and can be easily learned by surgeons.

Category: Basic Science/Education

SubCategory: Other

10400 Implementing Trauma-Informed Care in Gynecologic Surgery

Whitmore G,[*,1] Harrington L,[2] Orlando M,[1] Pettigrew J,[2] Tam J[1]. [1]Minimally Invasive Gynecologic Surgery, University of Colorado Hospital, Denver, CO; [2]Obstetrics and Gynecology, University of Colorado Hospital, Denver, CO*
*Corresponding author.

Study Objective: Traumatic experiences are highly prevalent and often cause longstanding impacts on individuals' mental and physical wellbeing. The six core principles for providing trauma-informed care (TIC) include 1) safety, 2) trustworthiness and transparency, 3) peer support, 4) collaboration and mutuality, 5) empowerment, voice, and choice, and 6) cultural, historical, and gender issues. Gynecologic TIC has been adopted in the outpatient setting, but not in perioperative care. We aim to review best practices related to TIC and provide strategies for implementation in the operating room.
Design: Descriptive video based on clinical experience and review of literature.
Setting: N/A.
Patients or Participants: Individuals who screen positive for history of trauma undergoing gynecologic surgery.
Interventions: We demonstrate perioperative strategies for providing TIC.
Measurements and Main Results: We recommend universal preoperative screening for history of trauma. Prior to surgery, identified individuals may be offered behavioral health consultation to review perioperative needs and perform imaginal exposure and grounding. Patients should be consented in clinic to minimize logistical stress in the surgical area. When patients arrive for surgery, they should present the care plan, created preoperatively, to notify perioperative staff members. Patients can be offered gowns and scrub pants to minimize bodily exposure and encouraged to utilize music and other comfort measures. In the operating room, we recommend doorway signage to minimize traffic, covering instrument tables, and dimming room lights. The surgical stirrups should be placed on the bed after the patient is asleep. Patients should be offered to place the safety strap and hold the oxygen mask themselves. Once in recovery, patients should be offered a private room, if feasible, and a support person can present to bedside early to help ease the transition to recovery.
Conclusion: Patients with a history of trauma, undergoing Gynecologic surgery, are at risk for re-traumatization. We demonstrate simple and supportive steps for advancing TIC practices before, during, and after gynecologic surgeries.

Category: Endometriosis

SubCategory: Pelvic Pain

10401 Incidental Finding of Acupuncture Needles in Uterosacral Ligaments at the Time of Endometriosis Resection

Shishkina A,[*,1] Shivji A,[2] McCaffrey C[2]. [1]Obstetrics and Gynecology, University of Toronto, Toronto, ON, Canada; [2]Obstetrics and Gynecology, Unity Health − St. Michael's Hospital, University of Toronto, Toronto, ON, Canada*
*Corresponding author.

Study Objective: Chronic pelvic pain affects up to 24% of women and accounts for 20% of gynecological clinic referrals. Common causes of chronic pelvic pain include adenomyosis, chronic pelvic inflammatory disease and endometriosis which is observed in up to 87% of cases.
Maibotsu-shin acupuncture is a unique technique that uses permanent needles, which may pose diagnostic challenges and cause complications, such as perforation of viscera, localized argyria, gold-induced toxicity. This video presents a case of incidentally found acupuncture needles in uterosacral ligaments at the time of laparoscopic endometriosis resection and present radiologic and intraoperative findings.
Design: This video uses images, video footage and narration to review chronic pelvic pain, endometriosis, Maibotsu-Shin acupuncture and presents a unique case of an incidental finding of permanent acupuncture needles in uterosacral ligaments.
Setting: Tertiary Hospital, minimally invasive gynecologic surgery operating room.
Patients or Participants: 28-year-old patient with a history of chronic pelvic pain undergoing laser-assisted laparoscopic endometriosis resection.
Interventions: Laser-assisted laparoscopic endometriosis resection.
Measurements and Main Results: Endometriosis management includes analgesia, hormonal suppression and surgical excision. Laparoscopic resection is the preferred surgical approach. Our patient underwent laser-assisted laparoscopic endometriosis resection. During the procedure, numerous acupuncture needles were removed from bilateral uterosacral ligaments.
Conclusion: Permanent needle acupuncture is a rare and unusual technique. In our patient, the finding of gold needles was incidental. Permanent needle acupuncture may pose diagnostic challenges and medical professionals should be familiar with possible imaging findings and complications.

Category: Laparoscopy

SubCategory: Pelvic Pain

10403 Laparoscopic Removal of Essure Fragments Seven Years after Vaginal Hysterectomy

Leon MG,[*,1] Hui M,[1] Mohr-Sasson A,[1] Gutierrez JF[2]. [1]Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX; [2]Obstetrics, Gynecology & Reproductive Sciences, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: To discuss device fragmentation as a possible cause of persistent pelvic pain following hysterectomy- bilateral salpingectomy and to demonstrate a laparoscopic technique to remove Essure® fragments.
Design: Surgical educational video.
Setting: Tertiary care center at an academic institution- Division of minimally invasive gynecologic surgery. Operating room procedure performed with the patient in a supine position with Trendelenburg tilt.
Patients or Participants: Case description of a 42-year-old patient who underwent vaginal hysterectomy and bilateral salpingectomy for Essure® removal 7 years before presentation. She had persistent symptoms and imaging suggested bilateral pelvic device fragments.
Interventions: Imaging including abdominal Xray and computed tomography were done for surgical mapping. Successful laparoscopic removal of bilateral Essure® fragments was performed. Intraoperative fluoroscopy revealed complete device removal with no remaining fragments. This video discusses a rare case of tubal micro-insert fragmentation after a hysterectomy resulting in persistent symptoms and requiring laparoscopic removal of fragments. Tips and tricks for successful removal are shared.
Measurements and Main Results: No specific measurements were taken or reported.
Conclusion: Essure® en-bloc removal is recommended as fragmentation of the device may lead to persistent symptoms. Laparoscopic removal of fragments is possible after imaging studies for surgical mapping. The use of intraoperative fluoroscopy is recommended to guarantee complete device removal.

Category: Laparoscopy

SubCategory: Basic Science/Education

10413 When the Going Gets Tough: Tips and Tricks to Employ in the Challenging Laparoscopic Case

Austin ET,[*,1] Norton TJ,[2] Mourad J[3]. [1]Obstetrics and Gynecology, University of Arizona College of Medicine - Phoenix, Phoenix, AZ; [2]Obstetrics and Gynecology, University of Arizona College of Medicine, Phoenix, AZ; [3]Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ*
*Corresponding author.

Study Objective: Minimally invasive surgery is a wonderful and increasingly first line option for many gynecologic conditions. However, it can often become challenging and inefficient when problems arise. When the going gets tough, it can be difficult to figure out what steps one should take, especially for physicians in training. The objective of this video is to demonstrate multiple tips and tricks surgeons can employ when approaching a challenging laparoscopic case.
Design: Surgical videos recorded from November 1, 2011 - March 30, 2023, and housed in our hospital's in house video library were reviewed.
Setting: All surgeries were performed at a large academic tertiary referral center.
Patients or Participants: 911 videos were reviewed.
Interventions: Screen recordings of videos demonstrating relevant tips or tricks were compiled into one review video.
Measurements and Main Results: Short clips of videos including the following were combined into one educational video: cleaning the camera, use of suction or irrigation, use of traction and counter-traction, use of Trendelenburg, utilizing another port, using a 30 degree laparoscopic camera, utilizing an endoscopic paddle retraction device, using an EEA sizer, use of temporary oophoropexy, use of indocyanine green, use of chromopertubation, use of a surgical glove for specimen extraction, use of suture to string together multiple specimens, and use of simultaneous hysteroscopy.
Conclusion: There are numerous strategies one can employ to return to a more desirable comfort level when performing a challenging laparoscopy. It is important for surgeons to have a wide and varied skill set to employ when approaching such challenging cases.

Category: Fibroids

SubCategory: Laparoscopy

10416 The Under-Utilisation of Laparoscopic Myomectomy for Surgical Management of Uterine Fibroids: Opportunities for Change and Levelling up

Cooper NAM, Daniels N, Magama Z, Aref-Adib M, Odejinmi J. Obstetrics and Gynaecology, Whipps Cross University Hospital, London, United Kingdom*
*Corresponding author.

Study Objective: Laparoscopic myomectomy is the gold standard procedure for properly selected women who need surgery for fibroids, however, it is not equally available across the UK. We reviewed 8 years of data from a large NHS trust in England, to examine what proportion of open myomectomy procedures could have been done laparoscopically.
Design: A trust-wide multicentre retrospective study.
Setting: Four secondary/tertiary care hospitals.
Patients or Participants: Women undergoing myomectomy via laparoscopy and laparotomy.
Interventions: A retrospective review was performed of all myomectomies performed across the trust from 2015 to 2022. We used previously published criteria to determine which open myomectomy cases could have been appropriate for laparoscopic myomectomy based upon the pre-operative imaging. The criteria were (i) that there were fewer than three fibroids, (ii) that the largest fibroid was no greater than 10cm in diameter and (iii) even if there was a solitary fibroid it should be no greater than 10cm in diameter. We estimated potential cost differences using Healthcare Resource Group (HRG) codes.
Measurements and Main Results: 855 abdominal myomectomies were performed across four hospital sites. 202 (24%) cases were performed laparoscopically. Of the 584 open myomectomies with scan data, 190 could have been performed laparoscopically. Across 4 hospital sites, the proportion of laparoscopic cases varied; site 1 = 4%, site 2= 53%, site 3 =20%, site 4 = 0%. By applying the scan criteria these proportions increase to 34%, 63%, 45% and 100% respectively. Overall, 46% of women could have had laparoscopic myomectomy versus 24%, with a potential cost saving of £74,000.
Conclusion: There is potential to increase the proportion of laparoscopic myomectomies performed. We hypothesise that the current dearth of laparoscopic cases reflects the lack of advanced laparoscopic training opportunities. We are doing women a disservice by being unable to offer gold standard treatment to all women, no matter where they live.

Category: Endometriosis

SubCategory: Robotics

10418 Excision of Ureteral Endometriosis with ICG Dye Injection and Low Anterior Resection for Stage IV Endometriosis

Lee B, Mahmoud M. Obstetrics and Gynecology, Rochester General Hospital, Rochester, NY*
*Corresponding author.

Study Objective: Highlight a surgical video for excision of ureteral endometriosis utilizing ICG dye retrograde injection and low anterior resection for rectosigmoid involvement in a patient with Stage IV endometriosis.
Design: Surgical video.
Setting: Academic hospital.
Patients or Participants: Single case report.
Interventions: Robotic-assisted total laparoscopic hysterectomy, bilateral salpingo-oophorectomy, cystoscopy, insertion of bilateral ureteral stents with ICG dye injection, and low anterior resection with colorectal anastomosis by colorectal surgery.
Measurements and Main Results: Surgical completion of a total laparoscopic hysterectomy, bilateral salpingo-oophorectomy, excision of ureteral endometriosis and low anterior resection. Steps reviewed for ICG dye injection. Instructional video on excision of ureteral endometriosis and low anterior resection.
Conclusion: Bilateral ureteral stents with retrograde injection of ICG can be helpful with rapid visualization of the ureters for Stage IV endometriosis surgery involving the rectosigmoid colon. Multidisciplinary care with colorectal surgery and urology is paramount for complex cases involving the rectosigmoid colon and ureter. Bowel segmental resection and anastomosis is a surgical option for deep infiltrating endometriosis involving the GI tract.

Category: Basic Science/Education

SubCategory: Laparoscopy

10421 Impact of Chlorhexidine Gluconate Versus Povidone-Iodine on the Vaginal Microenvironment as Vaginal Operative Preparation

Smith G,[1] Laniewski P,[2] Crossley P,[2] Farland LV,[3] Mahnert N,[1] Herbst-Kralovetz M[2]. [1]Obstetrics and Gynecology, University of Arizona College of Medicine Phoenix, Phoenix, AZ; [2]Basic Medical Sciences, University of Arizona College of Medicine Phoenix, Phoenix, AZ; [3]Epidemiology and Biostatistics, University of Arizona Mel and Enid Zuckerman College of Public Health, Tucson, AZ*
*Corresponding author.

Study Objective: To compare the effects on the vaginal microenvironment after preoperative treatment with 4% chlorhexidine gluconate (CHX) or 7.5% povidone iodine (PI) vaginal cleansing solutions.
Design: Prospective, observational pilot study.
Setting: Single-site academic tertiary care medical center.
Patients or Participants: Pre-menopausal women (age ≥18) undergoing laparoscopic (conventional or robotic) hysterectomy for benign conditions between February 2021 − June 2022 had cervicovaginal lavages and vaginal swabs collected preoperatively in the operating room and then 4 − 6 weeks postoperatively in clinic. Longitudinal patient-matched samples were utilized for analyses.
Interventions: Surgeon preference 4% chlorhexidine gluconate vs 7.5% povidone-iodine.
Measurements and Main Results: 41 patients were enrolled in the study. A total of 21 had pre- and post-op samples collected and were included for vaginal microbiome analysis. In the PI (n = 8) arm, microbiome richness significantly (p=0.04) decreased post-surgery compared to pre-surgery. No difference in microbiome richness was observed in the CHX (n = 13) group. CHX treatment resulted in significant (p<0.001) changes in bacterial profiles on the Bray Curtis ordination. For microbiome composition, prior to surgery, most women in both arms (75-77%) exhibited Lactobacillus dominance. PI did not change the overall profiles, whereas CHX impacted Lactobacillus iners-dominant profiles, which shifted to other lactobacilli (3/6) or bacterial vaginosis-associated bacteria (2/6). However, Lactobacillus crispatus-dominant profiles, which are optimal to vaginal health, were not impacted by either treatment. Vaginal pH did not significantly change after either treatment. Cervicovaginal immunoproteomic analysis and in-vitro testing of species-specific effects of CHX on vaginal lactobacilli growth are ongoing and findings will be reported at the time of the conference.
Conclusion: This pilot study suggests that there is no significantly increased postoperative dysbiosis with the use of CHX compared to PI as a vaginal preparation. Longitudinal studies with larger and diverse cohorts are needed to validate our findings.

Category: Laparoscopy

SubCategory: Other

10424 A More Sustainable Technique for Intraoperative Cystoscopy

DeLeeuw J, Rindos N. Allegheny Health Network, Pittsburgh, PA*
*Corresponding author.

Study Objective: The objective of this video is to review options for safely performing cystoscopy at the time of gynecologic surgery, using tools already on the surgical field including a laparoscopic suction irrigator and 5mm laparoscope.
Design: Not applicable.
Setting: In the operating room, the patient is positioned in dorsal lithotomy and Trendelenburg for laparoscopic gynecologic surgery. A 5mm laparoscopic scope, laparoscopic suction irrigator, and foley catheter are utilized both for intra-abdominal gynecologic surgery and cystoscopy. These tools are used in place of a traditional cystoscope.
Patients or Participants: Not applicable.
Interventions: With the foley catheter connected to the laparoscopic suction irrigator, the bladder can be backfilled with 200 to 300 milliliters of sterile saline solution. The foley balloon can then be deflated, catheter withdrawn, and the 5mm laparoscope that was previously used intra-abdominally can be inserted into the urethra, allowing for complete bladder survey at the end of the surgery.
Measurements and Main Results: Not applicable.
Conclusion: Using a laparoscopic suction irrigator and 5mm laparoscope for cystoscopy in place of a traditional cystoscopy set is a safe, effective, and efficient way to perform cystoscopy during gynecologic surgery.

Category: Basic Science/Education

SubCategory: Basic Science/Education

10433 Racial Discrimination and Bias in Gynecology: An AAGL Member Survey

Oshinowo A,[1,] Arvizo C,[2] Madueke-Laveaux S,[3] Ogunmuko K,[4,*] Picklesimer M,[4] Moss M[5]. [1]Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis, IN; [2]Obstetrics and Gynecology, Weill Cornell Medicine, New York, NY; [3]Obstetrics and Gynecology, University of Chicago Medicine, Chicago, IL; [4]Obstetrics and Gynecology, Indiana University School of Medicine, Indinapolis, IN; [5]Biostatistics and Health Data Science, Indiana University School of Medicine, Indianapolis, IN*
*Corresponding author.

Study Objective: To characterize racial discrimination and bias experienced by gynecologic surgeons.
Design: An anonymous cross-sectional survey was distributed using the Qualtrics electronic survey tool.
Setting: The survey was distributed to faculty and trainee members of an international gynecology society.
Patients or Participants: Gynecologic surgeons who identified as members of AAGL.
Interventions: AAGL members received an email notice about the survey, the QR code was posted on social media and the survey link was available on the AAGL website September 2022 through March 2023. The survey included questions on demographics, attitudes, experiences, and sequelae regarding racial discrimination and bias in the workplace. Survey themes were generated based on prior reported surveys evaluating discrimination in surgeon groups and author consensus.
Frequency distributions and nonparametric tests were performed to compare responses between those who did and did not identify as underrepresented in medicine (URiM and non-URiM).
Measurements and Main Results: Of the 286 responses, 145 (50.6%) completed the survey. Fifty-three (36.6%) identified as URiM, 84 as non-URiM (57.9%), and 8 (5.5%) preferred not to answer. Fifty-five questions were compared. The Bonferroni adjusted significant p-value was 0.0009. Most participants, regardless of URiM status (90.3%), thought racial discrimination was a problem in the workplace. Most URiM individuals experienced discrimination during their medical training and career vs. non-URiM (71.0% vs 23.6%, p<0.0001). URiM individuals were more likely to report observing avoidance of minority-persons by majority-persons in social settings in their training or workplace compared to their non-URiM counterparts (71.0% vs 34.8%, p<0.0001). URiM individuals felt unsafe bringing concerns about racism to all levels of leadership compared to their non-URiM (43.7% vs 13.1%, p<0.0002) colleagues.
Conclusion: URiM individuals are more likely to observe discriminatory behaviors and are more likely to feel unsafe bringing concerns to leadership. Regardless of URiM status, racial discrimination is considered a problem. National organizations should prioritize diversity, equity, and inclusion programs.

Category: Single-Port

SubCategory: Robotics

10453 Single-Port Robotic System Ovarian Cystectomy

Bhattacharyya E,[*,1] Wakabayashi G*[2]. [1]*Obstetrics, Gynecology, and Women's Health, University of Hawaii John A. Burns School of Medicine, Honolulu, HI;* [2]*Loyola University Chicago's Stritch School of Medicine, Maywood, IL*
*Corresponding author.

Study Objective: To demonstrate the first known video case, in the United States, of an ovarian cystectomy preformed using a single-port robotic system.
Design: A case study.
Setting: The patient was in a dorsal lithotomy position and a slight Trendelenburg position. The surgeon sat at a console remote from the operating table.
Patients or Participants: One patient was selected for the case study.
Interventions: Ovarian cystectomy.
Measurements and Main Results: One successful case of an ovarian cystectomy was performed using a single-port robotic system. The ovarian cyst was removed, and the patient tolerated the procedure well.
Conclusion: An ovarian cystectomy performed using a single-port robotic system is safe and effective.

Category: Endometriosis

SubCategory: Research

10456 Endometriosis or Chronic Pelvic Pain — Disparities in Inpatient Surgical Care on the National Level

Okorie CN,[*,1] *Meghan A,*[2] *Bejerano S,*[2] *Rodriguez A,*[3] *Sirota M,*[4] *Oskotsky T,*[5] *Giudice L,*[6] *Opoku-Anane J*[2]. [1]*Department of Obstetrics, Gynecology & Reproductive Sciences, University of California, San Francisco, San Francisco, CA;* [2]*Department of Obstetrics and Gynecology, Vagelos College of Physician and Surgeons, Columbia University, New York, NY;* [3]*St. George's University-School of Medicine, University Centre Grenada, West Indies, Grenada;* [4]*Bakar Computational Health Sciences Institute, University of California, San Francisco, San Francisco, CA;* [5]*School of Medicine, University of California, San Francisco, San Francisco, CA;* [6]*Department of Obstetrics, Gynecology & Reproductive Sciences, University of California, San Francisco, San Francisco, CA*
*Corresponding author.

Study Objective: Investigated racial and/or socioeconomic disparities for patients undergoing surgery for endometriosis and/or chronic pelvic pain (CPP).
Design: A retrospective study using the National Inpatient Sample Database (NIS) from 2009-13 comparing procedures, surgical routes, and postoperative complications by race/ethnicity, income, and payer.
Setting: The United States.
Patients or Participants: Amongst females (ages 7-65) diagnosed with endometriosis or CPP (n=125,213).
Interventions: Analyzed surgery outcomes by race, income(Q), and payer with surgical outcomes using multivariable logistic regression models. Adjusted odds ratios (aOR) were calculated with White, high median-income, or Medicaid-payer patients as the reference groups.
Measurements and Main Results: Adjusting for confounders, Black (aOR 1.48 [1.30, 1.68]), Hispanic (aOR 1.35 [1.18, 1.54]), and Asian (aOR 2.84 [2.30, 3.50]) patients, those with private insurance (aOR 1.68 [1.49, 1.89]), self-pay (aOR 1.71 [1.41, 2.07]), or other payers (aOR 1.82 [1.49, 2.22]), were more likely to have a laparotomy, but less likely for lower income patients (aOR 0.77 [0.67, 0.88]). Black (aOR 0.41[0.37, 0.45], Hispanic (aOR 0.59 [0.52, 0.67]), and Asian (aOR 0.31[0.26, 0.38]) patients and those with private insurance (aOR 0.73 [0.67, 0.81]) or self-pay (aOR 0.43 [0.37, 0.51]) were less likely to have a hysterectomy. Black (aOR 0.57 [0.51, 0.63]) and Hispanic (aOR 0.77 [0.69, 0.86]) patients were less likely to have an oophorectomy. Asian (aOR 1.57 [1.26, 1.96]) patients and those with private insurance (aOR 1.62 (1.41, 1.87)) were more likely to have an ablation/excision of endometriosis, but those with a lower income (Q1 aOR 0.70 [0.60, 0.81]) were less likely. Black patients (aOR 1.48 [1.15, 1.91]) were more likely to have complications.
Conclusion: In the United States, race, income, and payer are associated with the type of surgical care received in patients with endometriosis and CPP. Complications are significantly higher in Black patients. Supported by NIH NICHD P01 HD 106414.

Category: Basic Science/Education

SubCategory: Laparoscopy

10459 Bedside Ultrasound: Optimize Your Surgical Planning and Patient Safety

Burns J,[*,1] *Kammire LD*[2]. [1]*Ob/gyn, Atrium Health Wake Forest Baptist, Winston-Salem, NC;* [2]*OB-GYN, Wake Forest School of Medicine, Winston Salem, NC*
*Corresponding author.

Study Objective: Demonstrate how a gynecologic surgeon can use bedside (point of care) ultrasound for surgical planning in these situations:
- Determine safe laparoscopic entry sites in patients with prior abdominal surgeries.
- Assess cul de sac for safe entry for TVH or vNOTES cases.
- Determine safest hysterectomy route in patients with prior c-sections.
- assess ureteral patency with both transvaginal and transabdominal scanning for perioperative patients.

Design: Video with case examples.
Setting: Resident surgical clinic at academic medical center.
Patients or Participants: Patients undergoing laparoscopy, hysterectomy, or vNOTES cases.
Interventions: Ultrasound is routinely done at our preop clinic to assess patients in the above situations. Assessment of ureteral jets is also taught to be used intraoperatively and postoperatively to assess ureteral patency.
Measurements and Main Results: Ultrasound correctly predicted adhesions or cul-de-sac disease/obliteration in our surgical patients, allowing for safe, minimally invasive procedures.
Conclusion: Utilization of bedside ultrasound is an easily learned and cost-effective tool to optimize surgical planning and safety for GYN patients.

Category: Endometriosis

SubCategory: Other

10461 Feasibility and Inter-Reader Reliability of the 2021 Endometriosis Classification System Among Pre-Operative MRIs

Goldrath KE,[*,1] Dave HE,[2] Sonni I,[2] Raman S,[2] Burr TE,[2] Mehta RE,[2] Ginn D*[1]. [1]*OBGYN, UCLA, Los Angeles, CA;* [2]*Radiology, UCLA, Los Angeles, CA*
*Corresponding author.

Study Objective: To determine the feasibility and reproducibility of clinically staging endometriosis using the 2021 AAGL endometriosis classification in pre-operative MRI.
Design: This is a retrospective review of patients who underwent surgical management for endometriosis staged intraoperatively with the 2021 AAGL Endometriosis Classification. Pre- operative magnetic resonance imaging (MRI) of pelvis was performed and images were independently reviewed by two academic radiology fellows specializing in abdominal imaging. Endometriosis stage calculated by each physician were assessed with kappa statistics to identify variations in inter-reader reliability and ultimately impact on surgical planning.
Setting: Single academic institution.
Patients or Participants: A total of 79 charts were reviewed of patients who underwent surgical management for pre-operative concern of endometriosis by a single gynecologic surgeon between November 2021 and April 2023. Of these charts, 35 patients had both pre-operative MRIs performed and intraoperative endometriosis staging based on the 2021 AAGL Endometriosis classification.
Interventions: N/A.
Measurements and Main Results: Of the 35 patients, 16 (46%) patients had unanimous classification agreement between two readers and intraoperative staging, with 15 patients having stage IV endometriosis. 11 (31%) patients had one reader classification agreement with intraoperative staging. The sensitivities of detecting endometriosis from readers 1 and 2 were 77% and 94% respectively. Discrepancies between readers and positive operative findings with significant impact on surgical planning, including obliterated cul-de-sac and deep infiltrative endometriosis in the urologic or GI tract, were noted in 9 (26%) cases. Revised inter-reader reliability data will be presented.
Conclusion: There exists some limitations in feasibility and reproducibility when applying the AAGL Endometriosis Classification system to pre operative MRI. Continued use of the AAGL Endometriosis Classification intraoperatively may help optimize standardization and accuracy of MRI reporting among radiology specialists.

Category: Robotics

SubCategory: Reproductive Medicine

10464 Uterine Niche: Robotic Excision of Uterine Niche and Repair of Lower Uterine Segment

Mourad J,[1] Zeng K,[*,2] Norton TJ,[3] Luna Ramirez N*[4]. [1]*Division of Minimally Invasive Gynecologic Surgery, Banner University Medical Center, University of Arizona COM, Phoenix, AZ;* [2]*Gynecology, Banner University Medical Center - Phoenix, Phoenix, AZ;* [3]*Obstetrics and Gynecology, University of Arizona College of Medicine, Phoenix, AZ;* [4]*Department of Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ*
*Corresponding author.

Study Objective: Video demonstration of robotic resection of uterine niche with use of ICG for identification of uterine defect. Step by step demonstration of the lower uterine segment defect.
Design: N/A.
Setting: Academic Medical Center.
Patients or Participants: N/A.
Interventions: Robotic Assisted Resection and Repair of Niche.
Measurements and Main Results: Resolution of Niche as documented by Hysteroscopy.
Conclusion: Robotic assisted technology can be used in a safe and reproducible manner in resection and repair of uterine niche defects. Additionally, ICG can be used to aid the identification of the defect intra-operatively.

Category: Laparoscopy

SubCategory: Laparoscopy

10475 Laparoscopic Approach to Cornual Ectopic Pregnancy

Manek R. OBGYN, Kaiser Permanente, Los Angeles, CA*
*Corresponding author.

Study Objective: We present a rare case of a right cornual ectopic pregnancy at approximately 10 weeks gestation.
Design: An asymptomatic patient presented to the emergency room with concern for ectopic pregnancy from an outside clinic. Ultrasound demonstrated a right cornual ectopic pregnancy measuring 10 weeks gestation with cardiac activity. The patient was taken to the operating room for laparoscopic right cornual wedge resection and right salpingectomy which was performed without complication. The patient tolerated the procedure well and was discharged home the same day.
Setting: Dorsal lithotomy.
Patients or Participants: G3P2002 at 10wk0d.
Interventions: Laparoscopic right cornual wedge resection and right salpingectomy.
Measurements and Main Results: Successful completion of case laparoscopically.
Conclusion: Cornual ectopic pregnancy is a rare variant of ectopic pregnancies that can be difficult to manage and treat. Laparoscopic wedge resection for management of a cornual ectopic is an effective and safe treatment option.

Category: Pelvic Pain

SubCategory: Research

10484 Uterine Contractility during Intra-Uterine Device (IUD) Insertion and Patient Pain Experience

Rees CO,[1] Thomas S,[1] Huang Y,[2] Klaassen C,[1] Wagenaar LP,[1] van Vliet HAAM,[1] Mischi M,[2] Schoot BC[1]. [1]Obstetrics and Gynaecology, Catharina Hospital, Eindhoven, Netherlands; [2]Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*
*Corresponding author.

Study Objective: To assess the effect of IUD insertion of uterine contractility (UC), and to assess the relationship between UC and patient pain experience.

Design: Prospective observational cohort study.

Setting: Non-academic teaching hospital in the Netherlands.

Patients or Participants: 28 patients undergoing IUD insertion.

Interventions: Each patient underwent a 4-minute transvaginal ultrasound (TVUS) of the uterus in mid-sagittal section directly prior to, and directly after, IUD placement. VAS scores for pain were collected at time of placement. TVUS recordings were analysed using an automated 2D speckle tracking method for: uterine contraction frequency (CF, contractions/minute), amplitude, velocity (mm/sec), and coordination. Patients were included regardless of hormonal therapy and cycle phase. Between-subject analysis was conducted using the independent t-test and/or Shapiro-wilk test, and within-subject analysis using the paired t-test. Patient VAS scores were stratified to mild and/or moderate pain (VAS below 7) and severe pain (VAS of 7 or higher).

Measurements and Main Results: Mean age was 31.6 years (SD ± 11.3), most patients were nulliparous (17/28). 17/28 patients were using oral hormonal contraception at time of IUD insertion. Mean uterine length was 67.2mm (SD ± 12.0). Median reported VAS was 7.00 (IQR 3.00). Only CF increased after IUD placement (pre-IUD 1.50 (SD ±0.35) vs. post-IUD 1.70 (SD ±0.30), $p<0.001$). No other UC features were affected bij IUD insertion ($P>0.05$). Patients with a severe VAS showed higher CF (1.64 (SD ± 0.56) vs. 1.48 (SD ±0.20), $p=0.025$) and a lower contraction amplitude (35.9 (SD ±3.0) vs. 25.7 (SD ±11.3)), $p=0.013$).

Conclusion: UC is affected bij IUD insertion, with initial analyses pointing towards (changes in) specific uterine features and patient pain experience. Namely uterine contraction frequency and amplitude difference may be most involved in pain experience associated with IUD insertion. Future studies should investigate the effect of cycle phase, parity and potential uterine pathologies on pain sensation, and confirm these findings in a larger population.

Category: Basic Science/Education

SubCategory: Hysteroscopy

10505 Low-Cost Low-Fidelity Simulation Model for Minor Gynecologic Procedures

GiglioAyers P, Kurchena K, Eger R, Foley CE. Department of Obstetrics and Gynecology, Brown University, Women and Infants Hospital, Providence, RI*
*Corresponding author.

Study Objective: To describe the assembly and use of a novel low-cost, low-fidelity simulation model for minor gynecologic procedures.

Design: Descriptive simulation video.

Setting: This model was created and used at a single urban academic institution. The model is translatable and may be used for simulation at any program regardless of resources.

Patients or Participants: The model was successfully integrated into a simulation curriculum and used by residents of all levels.

Interventions: The model is a low fidelity replica of a vaginal canal, cervix, and uterine cavity. The following simulations were created and implemented: 1. Speculum placement, tenaculum placement and cervical dilation, 2. In-office hysteroscopy, 3. Polypectomy and use of hysteroscopic instruments, 4. Difficult IUD removal.

Measurements and Main Results: This video includes a cost analysis, description of required materials, and demonstrates step-by-step model assembly. All four simulations described above are shown in the video. The model was successfully integrated into the simulation curriculum, however specific model data regarding resident satisfaction is not yet available.

Conclusion: This novel simulation model is low-cost, efficient to create, hands-free and watertight, multi-functional and multi-use. The model can be easily integrated into residency simulation and allows for hands-on learning for all trainees.

Category: Oncology

SubCategory: Robotics

10507 Use of Omental Grafts in Laparoscopic Drainage and Subsequent Robotic Assisted De-Roofing of a Recurrent Retropubic Pseudocyst

Vo S,[1] Johansson CY,[2] Chan FK[3]. [1]Department of Obstetrics and Gynaecology, Liverpool Hospital, Sydney, NSW, Australia; [2]Minimally Invasive Gynaecology Unit, Liverpool Hospital, Sydney, NSW, Australia; [3]Gynaecology and Gynaecological Oncology, Macquarie University Hospital, Sydney, NSW, Australia*
*Corresponding author.

Study Objective: We present a case of a recurrent large retropubic pseudocyst which was initially managed laparoscopically, but definitively managed with robotic assisted surgery. The surgical technique and the use of omental flap transposition will be described.

Design: Case report and surgical video.

Setting: Laparoscopic and robotic assisted surgery.

Patients or Participants: A patient who had a recurrent pseudocyst after hysterectomy, bilateral salpingo-oophorectomy and pelvic lymph node dissection for stage 3C1 carcinosarcoma of the uterus.

Interventions: Laparoscopy for drainage of cyst after third recurrence, and robotic assisted de-roofing and drainage of the retropubic cyst on fourth recurrence.

Measurements and Main Results: A 61-year-old female developed a large fluid collection in the lower abdomen three weeks after a robotic assisted laparoscopic hysterectomy, bilateral salpingo-oophorectomy and pelvic lymph node dissection for stage 3C1 carcinosarcoma of the uterus. The large fluid collection measured 15 × 17 × 12cm. Percutaneous drainage showed lymphocytosis and no malignant cells. After two subsequent recurrences, both of which requiring percutaneous drainage, a laparoscopic drainage of the retropubic cyst was planned on her third recurrence. There were no communicating tracts to the urachus or bladder. Omental grafts were sutured to the bilateral openings into the cyst cavity.

Less than one month after surgery, the cyst recurred, and the patient underwent a robotic assisted de-roofing and drainage of the retropubic cyst. The cyst was opened, and omental graft was sutured to the posterior edge of the cyst. Histology of the cyst wall showed infarcted fibrofatty tissue with dense fibrosis suggestive of a pseudocyst, and there were no subsequent recurrences of the pseudocyst.

Conclusion: The use of minimally invasive techniques and omental transposition grafts can be effective in the management of large abdominal or pelvic pseudocysts and avoids the morbidity of an open procedure in an already compromised patient.

Category: Fibroids

SubCategory: Laparoscopy

10512 Why and Where Are Interventions Performed: A Retrospective Analysis of Myomectomy for Uterine Fibroids in England (2018-2019)

Aref-Adib M,[*,1] Strong S,[2] Ojukwu O,[3] Zeltser H,[4] Cooper NAM,[5] Mcdougall A,[2] Odejinmi F[2]. [1]Gynaecology, Whipps Cross University Hospital, London, United Kingdom; [2]Whipps Cross University Hospital, London, United Kingdom; [3]Newham University Hospital, London, United Kingdom; [4]Gynaecology, Newham University Hospital, London, United States Minor Outlying Islands; [5]Obstetrics and Gynaecology, Whipps Cross University Hospital, London, United Kingdom*
*Corresponding author.

Study Objective: To determine the national distribution and availability of interventions for myomas across the UK National Health Service (NHS), with comparison between high-volume, BSGE (The British Society for Gynaecological Endoscopy) accredited endometriosis centres and lower-volume unaccredited centres.
Design: A retrospective analysis of interventions for fibroids using NHS digital hospital episode statistics data.
Setting: All UK NHS hospitals offering treatment for fibroids.
Patients or Participants: All women undergoing treatment for fibroids in 2018/19.
Interventions: Type of treatments undertaken for fibroids (including hysterectomy, myomectomy, embolisation), hospital location, BSGE accreditation and case volume. Comparison between centres performing <5 myomectomies per year and >25 per year was performed.
Measurements and Main Results: There were 27,892 interventions for fibroids: 12,008 hysterectomies (43%), 1666 uterine artery embolisations (5.9%), 2970 myomectomies (805 laparoscopic and 2165 open). the availability of myomectomy varied across the UK and between high and low volume hospitals. In 57 BSGE centres the average number of laparoscopic myomectomies was 11 (range 0-105). 7 BSGE centres performed <5 laparoscopic myomectomies and 7 performed >25. Length of stay was inversely proportional to number of myomectomies. London and the BSGE centres were the highest volume centres for both open and laparoscopic myomectomy. Within some centres, laparoscopic myomectomy was not performed.
Conclusion: There is regional variability in high and low performance hospitals. Most myomectomies are performed in London, and BSGE centres performed more laparoscopic myomectomies but there were still centres not performing any. For women to have equitable access they need to know where services exist. We advocate prospective data collection similar to those in USA (COMPARE-UF) and Canada (CAPTURE) to allow patients and clinicians to make informed and appropriate choices.

Category: Robotics

SubCategory: Basic Science/Education

10514 A Posterior Approach to an Obliterated Anterior Cul-De-Sac

Molina A, Riley K, Dave A, Li L. Obstetrics and Gynecology, Penn State Milton S. Hershey Medical Center, Hershey, PA*
*Corresponding author.

Study Objective: Provide 6 reproducible and reliable steps for a difficult anterior cul-de-sac dissection at the time of hysterectomy. Describe equipment utilized for posterior approach.
Design: N/A.
Setting: Tertiary medical center operating room.
Patients or Participants: Two surgical cases.
Interventions: N/A.
Measurements and Main Results: Successful lysis of bladder adhesions after C-sections at time of hysterectomy.
Conclusion: The 6-step reproducible approach is reliable and allows for successful bladder flap dissection.

Category: Pelvic Pain

SubCategory: Robotics

10524 Surgical Removal of an Auto-Amputated Fallopian tube

Osuma A,[*,1] Elkattah RA[2]. [1]Obstetrics and Gynecology, University of Illinois College of Medicine Peoria, Peoria, IL; [2]Minimally Invasive Gynecology, OSF Healthcare, Peoria, IL*
*Corresponding author.

Study Objective: Safe techniques of removing an auto-amputated fallopian tube.
Design: Surgical video.
Setting: Operating room.
Patients or Participants: 28-year-old, nulliparous Caucasian female with persistent right adnexal cystic lesion measuring 9.8 × 3.5 cm and pelvic pain.
Interventions: Robotic resection of right pelvic cyst.
Measurements and Main Results: Pathology confirmed tubal origin of cystic structures consistent with auto-amputation of the right fallopian tube.
Conclusion: Auto-amputation of fallopian tubes can present with pain, and surgical intervention is an effective treatment modality.

Category: Single-Port

SubCategory: Robotics

10525 Analysis of Various Closure Techniques and Rates of Postoperative Incisional Issues in Single Incision Laparoscopic Surgery

Sunkara S,[*,1] Jackson J,[2] Casey S,[2] Erfani H,[3] Thigpen B,[4] Guan X[4]. [1]Minimally Invasive Gynecologic Surgery, Baylor College of Medicine, Houston, TX; [2]Baylor College of Medicine, Houston, TX; [3]Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX; [4]Minimally Invasive Gynecology Surgery, Baylor College of Medicine, Houston, TX*
*Corresponding author.

Study Objective: Evaluate the incidence and risk for postoperative incisional complications after robotic (rSILS) and traditional single incision laparoscopic surgery (SILS) for benign gynecologic conditions using various umbilical closure techniques.
Design: Retrospective Cohort Study.
Setting: Academic institution, one surgeon at two hospitals.
Patients or Participants: Women who underwent rSILS and SILS, 18-80 years old from November 2014 − June 2022.
Interventions: Patient information including demographics, surgery, closure technique and postoperative incisional issues was collected. Univariate and multivariate analysis were used to predict postoperative incisional issues.
Measurements and Main Results: Data from 1036 subjects was collected. Rates of hernia (primary outcome) and incision issues (secondary outcome) such as separation or infection were analyzed by closure

technique. Hernia rate is lower when incision apices are tagged regardless of suture type compared to when apices are not tagged. (<.001) In the non-tagged apices group there were 9 hernias in 209 patients. In the tagged apices groups, hernias occurred in 1 of 476 (permanent) 1 of 258 (absorbable) and 0 of 93 patients (permanent/absorbable combination). Rate of cellulitis or abscess were NOT significantly different amongst the groups, although wound separation was higher in closure with tagged apices with absorbable suture (3.1%) and a combination of permanent and absorbable suture (4.3%) compared to tagging with permanent suture (0.8%) or not tagging apices at all (1.9%). In multivariate analysis hernia rate was still notably decreased in closure groups with tagged apices at the start of surgery, although other incision complications did not vary.
Conclusion: The incidence of incisional hernia after SILS and rSILS procedures is low however does vary with different techniques. Use of the closure technique with tagged apices regardless of suture type can mitigate one of the biggest concerns of performing single incision laparoscopic surgery and offer patients improved cosmesis compared to multiport laparoscopic or robotic surgery.

Category: Laparoscopy

SubCategory: Basic Science/Education

10526 The World's First Proof of Concept of the Practical Potential in Artificially Intelligent Digital Twins in Advanced Laparoscopic Training

Khan ZR. Thumbay University Hospital, Ajman, Ajman, United Arab Emirates*
*Corresponding author.

Study Objective: To develop the world's first digital twins of healthcare educators and trainers in advanced laparoscopic gynaecological surgery, utilising deep machine learning to produce a human-like interface which can lead tutorials and training on an online platform autonomously.
Design: Using a third generation neural network-based language prediction model a purpose coded artificial intelligence (AI) system was prompted to develop training modules for a AI-powered advanced laparoscopic gynaecological surgery training programme. The avatars for the training modules were custom built, based on the lead trainer's facial features and voice. The AI-powered modules were made part of a larger hybrid training programme with an online / webinar component, alongside live training by the same lead trainers.
Setting: The bespoke AI-generated training modules were added to an already existing advanced laparoscopic training programme for Consultants and Residents in Gynaecology.
Patients or Participants: 10 Consultants and Residents in Gynaecology with an interest in laparoscopic surgery were taught by the digital twins of the lead trainers. The subject matter of the training modules was similar but the content was not the same.
Interventions: N/A.
Measurements and Main Results: Feedback was collected after the training programme with particular interest in the performance of the digital twins. The feedback was overwhelmingly positive. The digital twins have now also been purposed to carry out assessments in the form of multiple choice questions and collect trainee feedback with subjective responses.
Conclusion: For a fraction of the true cost of healthcare education, digital twins can enable remote learning, in multiple languages, allowing educators and trainers to reach a wider audience of students without the need for physical classroom space. This can be particularly important in healthcare education, where access to specialized training can be limited in certain geographic regions, not to mention the advantage of objectively tracking and analyzing every nuance of learning performance in the realm of advanced laparoscopic skills.

Category: Research

SubCategory: Hysteroscopy

10532 Clinical Impact of Gynecological Prediction Models on Decision Making of Both Patients and Doctors. a Prospective Survey Study

Stevens KYR,[*,1] Van der Donck E,[1] Weyers S,[1] Schoot BC[2]. [1]UZ Gent, Gent, Belgium; [2]Obstetrics and Gynaecology, Catharina Hospital, Eindhoven, Netherlands*
*Corresponding author.

Study Objective: Prediction models can support shared decision making. However, it remains unclear how doctors and patients will use these predicted percentages by making their choice. That is why this study investigates how outcomes of prediction models influence the clinical decision making of both patients and professionals.
Design: Prospective survey study.
Setting: Multicenter data collection between the 1st of February 2019 and the 1st of August 2020.
Patients or Participants: *Patients:* Dutch-speaking females (age 18-75 years) visiting the (benign) gynaecology outpatient department.
Professionals: Dutch-speaking physicians involved in the gynaecological field.
Interventions: The survey contained a fictional case about abnormal uterine bleeding. Endometrial ablation (EA) was suggested as treatment with a general failure percentage about 15%. Patients preference of treatment was asked (endometrial ablation vs. uterus extirpation (UE)). After using a prediction model, the failure percentage of EA was 61%. Treatment preference was asked again. A similar survey was developed for professionals.
Measurements and Main Results: The primary outcome measure was the failure percentage of EA where both patients and doctors would no longer choose EA. A total of respectively 585 and 102 surveys of patients and were analysed. After reading the case, 86,7% (N=508) of the women and 86.3% (N=87) of the professionals preferred EA over UE. When the prediction of failure seemed to be 61% based on the fictive case, a total of 47,9% (N=243) in the patient group and 48.9% (N=43) of the professionals significantly changed their choice from EA into UE (both p-value 0.000).
The accepted average failure percentage of EA was 56.7% (range 10-100) by patients and 53,6% (range 10-100) by professionals.
Conclusion: Patients and professionals significantly adapted their treatment preference after reading the personal failure percentage. Hereby we can conclude that it seems that a prediction model influences treatment choice. The extra information, gained by such a model, can contribute better patient counselling and optimize shared decision making.

Category: Laparoscopy

SubCategory: Research

10539 Refuse, Rethink, Reuse: Optimizing the Environmental Impact of Total Laparoscopic Hysterectomy

Ramanathan A,[*,1] Sobota R,[1] Hazen ND[2]. [1]Obstetrics and Gynecology, MedStar Georgetown University/ Washington Hospital Center, Washington, DC; [2]MIGS, Medstar Georgetown University Hospital, Washington, DC*
*Corresponding author.

Study Objective: The healthcare sector is responsible for 8.5% of CO_2 emissions in the United States, with the operating room contributing 21-30%. We aim to quantify the climate impact of total laparoscopic hysterectomy (TLH) utilizing a modified material flow analysis (MFA), with identification of specific targets for optimization.

Design: A modified MFA was performed for TLH in April and May of 2023, in which analysis of operating room protocols, staff interviews, desk research, and observation of surgical cases were combined to generate a comprehensive map of materials entering and leaving the operating suite.
Setting: Operating suite of a large academic medical center.
Patients or Participants: 5 surgical TLH cases were observed and 5 operating room staff members were interviewed.
Interventions: A modified MFA was conducted for TLH.
Measurements and Main Results: An average total mass of 48.8 kg of materials per patient entered and left the operating suite for each TLH, including 21.4 kg (43.9%) of reusable surgical instruments, 3.1 kg (6.4%) of washable linens, and 24.3 kg (49.8%) of single-use disposable items. The quantity by mass of packaging materials was 1.8 kg (3.7%). To complete a single TLH, a total of 460 individual items are opened, however many are never used, resulting in unnecessary waste generation. Of the 121 reusable surgical instruments that were opened, an average of only 28 (23.1%) were actually used during surgery. Of the 330 opened single-use items, an average of 36 (10.9%) were discarded unused. Target areas identified for optimization included refusal of single-use items and tools, consideration of single-field sterile technique for reduction in item redundancies and waste, and consideration of reusable clothing and draping items.
Conclusion: TLH contributes to climate impact largely by creating demand for single-use items and through immoderation in operation setup. Re-design of operating room protocols and procurement priorities is essential in achieving environmental sustainability in surgery.

Category: Endometriosis

SubCategory: Laparoscopy

10540 Laparoscopic Resection of Hepatic Endometriosis

Qu A,[*,1] *Chung C,*[2] *Biehl T,*[2] *Loring M*[3]. [1]*Gynecology, Virginia Mason Medical Center, Seattle, WA;* [2]*Hepatobiliary and Pancreatic Surgery, Virginia Mason Medical Center, Seattle, WA;* [3]*Department of Gynecology, Virginia Mason Franciscan Health, Seattle, WA*
*Corresponding author.

Study Objective: To demonstrate a case of a partial liver resection for excision of suspected hepatic endometriosis in a patient with cyclic right upper quadrant pain.
Design: Not applicable.
Setting: In this video, the patient underwent laparoscopic partial liver and enbloc partial anterior abdominal wall resection for excision of hepatic endometriosis utilizing the dorsal lithotomy position with moderate reverse Trendelenburg tilt.
Patients or Participants: Our 43-year-old patient presented with a 7-year history of worsening cyclic right upper quadrant pain in the setting of long-standing dysmenorrhea and chronic pelvic pain. Her symptoms were refractory to medical management. After extensive workup and multidisciplinary consultation, clinical diagnosis of hepatic endometriosis was made. Due to the debilitating pain, the patient opted for diagnostic laparoscopy with partial liver resection to remove the suspected lesion.
Interventions: This procedure utilized laparoscopic intracorporeal ultrasound to delineate and confirm the margins of the hepatic endometriosis lesion to ensure complete resection. A wedge resection of the liver enbloc with the abdominal wall was then performed using the ultrasonic scalpel. Lastly, argon beam ablation was used for treatment of the resection bed as well as the abnormal fibrinous-appearing liver surface surrounding the lesion. Patient also underwent a concurrent uncomplicated total laparoscopic hysterectomy with bilateral salpingectomy and excision of endometriosis for treatment of adenomyosis and pelvic pain.
Measurements and Main Results: We demonstrated a minimally invasive surgical approach for complete resection of symptomatic hepatic endometriosis. Patient tolerated the procedure well. Postoperative recovery was uneventful. Pathology confirmed hepatic endometriosis and patient reported complete resolution of her right upper quadrant pain at her 8 week follow up visit.
Conclusion: Hepatic endometriosis is one of the rarest conditions with only limited number of cases reported. Diagnosis and management of hepatic endometriosis requires high level of clinical suspicion as well as multidisciplinary collaboration. In patients with symptoms refractory to medical management, surgical intervention remains essential.

Category: Laparoscopy

SubCategory: Other

10541 Preoperative Blood Biomarker Predictors of Postoperative Sepsis in Patients Undergoing Bilateral Salpingo-Oophorectomy

Ganguli R. Medicine, Brown, San Jose, CA*
*Corresponding author.

Study Objective: Investigate preoperative blood biomarker differences for patients undergoing bilateral salpingo-oophorectomy (BSO) with and without postoperative sepsis.

Design: Patients from the American College of Surgeons National Surgical Quality Improvement Project database from the years 2005 to 2019 were analyzed. All surgical patients undergoing any surgical procedure involving a BSO surgery, identified by identification of the term "BSO" in the principal operative procedure CPT code description, met the inclusion criteria. Sepsis was defined as an acute infectious process postoperatively presenting within 30 days immediately following a patient's primary BSO procedure.

Setting: N/A.
Patients or Participants: 16,486 patients undergoing a BSO surgery were identified, of which 340 (2.06%) patients developed postoperative sepsis.
Interventions: N/A.
Measurements and Main Results: One-way analysis of variance (ANOVA) testing was conducted to obtain p-values. Multivariable logistic regression models were developed to calculate adjusted odds ratios (aOR) with 95% confidence intervals.
Preoperative white blood cell count ($p=0.004$), preoperative albumin ($p<0.001$), and preoperative creatinine ($p=0.027$) were all statistically significant predictors of postoperative sepsis in BSO patients. Preoperative sodium, blood urea nitrogen, bilirubin, serum glutamic-oxaloacetic transaminase, and alkaline phosphatase were not statistically significant predictors ($p>0.05$).
For BSO patients who developed postoperative sepsis, elevated preoperative white blood cell count AOR: 0.95 (95% CI: 0.92-0.99) and preoperative serum albumin AOR: 0.34 (95% CI: 0.28-0.41) were associated with increased odds for developing postoperative sepsis, while elevated preoperative serum creatinine was associated with decreased risk for developing postoperative sepsis AOR: 1.32 (95% CI: 1.03-1.68).
Conclusion: Elevated preoperative concentrations of white blood cell count, albumin, and creatinine may be useful in earlier diagnosis and management of postoperative sepsis. Awareness of these preoperative indicators may help providers initiate tighter clinical management, closer follow-up, and pave the way for potential risk prediction models.

Category: Fibroids

SubCategory: Research

10543 A Comparison of Prior Fibroid Treatment and Severity of Disease at Time of Presentation to a Multidisciplinary Fibroid Center

Dahiya AK,[*,1] Pass AR,[2] Shirazian T[3]. [1]NYU Grossman School of Medicine, New York, NY; [2]Department of Obstetrics and Gynecology, NYU Grossman School of Medicine, New York, NY; [3]Department of Obstetrics and Gynecology, NYU Langone Health Center, New York, NY*
*Corresponding author.

Study Objective: To assess the relationship between prior treatment and current disease burden in patients presenting to a multidisciplinary fibroid center.
Design: Retrospective chart review of patients presenting for fibroid care. The Uterine Fibroid Symptom and Quality of Life (UFS-QOL) questionnaire, as well as a center-specific Life Goals Questionnaire (LGQ), were distributed to patients via electronic medical record prior to their first appointment. The LGQ allowed patients to report prior treatments.
Setting: U.S.-based urban academic center
Patients or Participants: 302 patients presenting to a fibroid center between May 2022 and March 2023.
Interventions: N/A.
Measurements and Main Results: Of 302 patients presenting for care, 169 (56%) filled out both the UFS-QOL and LGQ. 42 (25%) patients reported prior fibroid treatment. 34 (20%) patients reported prior procedural treatment (PT), and 24 (14%) reported prior medical management (MM). 16 (9%) patients reported both PT and MM, while 18 (11%) patients reported only PT and 8 (5%) patients reported only MM. 6 (4%) patients reported two or more prior procedures. PT included myomectomy, radiofrequency ablation, and uterine artery embolization. MM included hormonal contraception, gonadotropin-releasing hormone antagonists, ibuprofen, supplements, and tranexamic acid.
Patients reporting PT had significantly higher Symptom Severity Scores (SSS) ($p<0.0001$) and lower health-related quality of life scores (HRQoL) ($p<0.0001$) on the UFS-QOL compared to patients with no PT. Patients reporting MM had significantly higher SSS ($p<0.001$) and lower HRQoL ($p<0.0001$) compared to patients with no MM.
Between patients reporting PT and patients reporting MM alone, there was no significant difference in SSS ($p=0.22$) or HRQoL ($p=0.32$). The proportion of non-White patients did not differ significantly among those reporting PT ($p=0.18$) or MM ($p=0.54$).
Conclusion: At time of presentation to care, patients reporting prior fibroid treatment had significantly higher symptom burden compared to patients reporting no prior treatment. Patients who have failed prior fibroid treatment may benefit from referral to a dedicated fibroid center.

Category: Laparoscopy

SubCategory: Reproductive Medicine

10551 Cesarean Scar Pregnancy: Two Techniques of Conservative Laparoscopic Management.

De La O Pérez LO,[1] Castañeda Díaz M,[2] Obregón García EF,[*,3] Ruiz Limón AB,[3] Vázquez Jiménez NS[3]. [1]Biología de la Reproducción Humana y Endoscopía ginecológica, Gestar, Centro de Fertilidad, Monterrey, NL, Mexico; [2]Biología de la Reproducción Humana y Endoscopía Ginecológica, Centro Médico de la Mujer Ginequito, Monterrey, NL, Mexico; [3]Biología de la Reproducción Humana y Endoscopía Ginecológica, Unidad Médica de Alta Especialidad, Hospital de Gineco Obstetricia No. 23, "Dr. Ignacio Morones Prieto", Monterrey, NL, Mexico*
*Corresponding author.

Study Objective: Cesarean scar pregnancy (CSP) is a condition that has had an exponential increase in recent years linked to the increase of cesarean rate. The high risk of uterine rupture, bleeding, hysterectomy, and loss of fertility makes early diagnosis crucial. Removal of the CSP and repair of the isthmocele are associated with higher success rates in preserving fertility. Treatment should be aimed at preserving future fertility and avoiding recurrence.
Design: Video demonstration of 2 surgical techniques.
Setting: High specialty hospital.
Patients or Participants: Videos of two surgeries performed on two patients with CSP were obtained.
Interventions: Case 1 29-year-old patient G2C1 with 7 weeks pregnancy. Diagnosis: CSP type IIa, with fetal cardiac activity. For which, it was decided to induce fetal asystole with hysteroscopic intragestational injection of potassium chloride (KCl) and intramyometrial injection of vasopressin, followed by operative resection of the pregnancy, and isthmocele repair. Twelve months later, she had an intrauterine pregnancy, cesarean section was performed at 38 weeks gestation.
Case 2 32-year-old patient G3C2 with 10.5 weeks pregnancy Diagnosis: CSP type IIb. Ultrasound revealed an increase in vascular flow in the implantation site, laparoscopic treatment was performed with hemostatic control with intramyometrial injection of vasopressin and temporary ligation of the uterine arteries using the technique of the removable "trick" knot, curettage, wedge resection of the pregnancy and isthmocele repair.
Measurements and Main Results: Video shows two surgical techniques used for laparoscopic management of CSP, which were completed successfully and without complications.
Conclusion: Laparoscopic conservative treatment of CSP in expert hands and with trained personnel has high success rates. It is necessary to carry out preventive measures to achieve good hemostasis such as intramyometrial injection of vasopressin and/or temporary ligation of uterine arteries, individualizing the case according to the vascular flow in the implantation site observed in the ultrasound, with the objective of reducing maternal morbidity and mortality, and preserving fertility.

Category: Natural Orifice Surgery

SubCategory: Reproductive Medicine

10553 vNOTES for Complex Abdominal Surgeries

Hui M,[*,1] Dziadek O,[2] Leon MG,[1] Montealegre A,[1] Bhalwal A[1]. [1]Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX; [2]Obstetrics, Gynecology and Reproductive Sciences, UTHealth Houston, Houston, TX*
*Corresponding author.

Study Objective: Educational video on the procedure and setup for vNOTES using the transvaginal access platform. Also to demonstrate the utility of vNOTES for patients with a history of complex abdominal surgeries.
Design: Narrated video footage.
Setting: Single academic institution.
Patients or Participants: Case 1 is a 30 yo G7P4115 who presents desiring permanent sterilization via vNOTES salpingectomy. Her surgical history was complicated by a cornual ectopic pregnancy, treated with laparoscopic cornual wedge resection and right salpingectomy in 2011 at an outside hospital. In 2023, she suffered a cornual uterine rupture in her subsequent pregnancy at 19w2d, which was repaired by exploratory laparotomy, reduction of prolapsed fetal membranes, and repair of the 2cm uterine rupture. She progressed with the pregnancy and underwent a preterm primary Cesarean section at 33w1d for absent myometrial tissue found on US. Intraoperatively, she had a 5cm complete cornual uterine rupture. She underwent repair of this defect, and was discharged home

with a Nexplanon with plans for an interval vNOTES bilateral salpingectomy for permanent sterilization.
Case 2 is a 29 yo G2P2 who desires permanent sterilization, who failed bilateral salpingectomy at time of previous Cesarean section due to significant adhesive disease. She underwent complete permanent sterilization with interval vNOTES bilateral salpingectomy.
Interventions: (1) We demonstrate the process for use and placement of the transvaginal access platform for vNOTES adnexectomy. (2) We perform an abdominal survey to assess adhesion disease and any abdominal pathology. (3) Salpingectomy is performed via the single-site transvaginal access platform.

Measurements and Main Results: N/A.

Conclusion: We demonstrate that vNOTES is a safe, alternative technique compared to traditional laparoscopy for patients with a history of complex abdominal surgeries desiring permanent sterilization. VNOTES can be considered in patients with suspected adhesive disease from prior abdominal surgeries.

Category: Laparoscopy

SubCategory: Pelvic Pain

10557 Racial and Social Determinants of Health Disparities in Post-Operative Pain Following Gynecologic Laparoscopy

Murphy C,[*,1] Seifi F,[2] Wilcox A[1]. [1]OBGYN, Yale New Haven Health - Bridgeport Hospital, Bridgeport, CT; [2]OBGYN, Yale University, New Haven, CT*
*Corresponding author.

Study Objective: The purpose of this study was to determine whether post-operative pain management following gynecologic laparoscopy differed based on patient race or socioeconomic status a single institution.
Design: We performed a retrospective cohort study of all patients who underwent laparoscopy for benign gynecologic indications from January 1, 2016 to January 1, 2023 at a single academic institution. The average morphine milligram equivalent (MME) prescribed following each surgery was calculated and then classified by age, race, ethnicity, BMI, type of insurance, and zip code. Multivariate linear regression was used to compare MME among groups.
Setting: N/A.
Patients or Participants: We identified 1245 patients who met inclusion criteria and were included in the analysis.
Interventions: N/A.
Measurements and Main Results: Case characteristics were similar between all groups. There were no differences in MME across age groups. Regarding race, white patients were discharged with significantly higher doses of opioids when compared with non-white patients ($p<0.01$). Patients who lived within lower socio-economic status zip codes were discharged with lower doses of opiates ($p<0.05$). Patients with private insurance were prescribed the largest MME upon discharge, followed by Medicaid and lastly Medicare ($p<0.01$).
Conclusion: Several studies published in the obstetric and pediatric post-operative populations have found disparities in post-operative pain management in non-white patients and patients of lower socio-economic status. However, to the best of our knowledge, no study of this kind has been performed in post-operative patients who have undergone laparoscopic surgery for gynecologic indications. Our results indicate that disparities exist in post-operative pain management and opiate prescription practices at our institution. These findings could influence future management and prescribing habits in providers to help improve these disparities in our population. This study also highlights the importance of establishing more uniform, evidence-based guidelines for postoperative pain management.

Category: Endometriosis

SubCategory: Research

10566 The Effect of Medical Management on Endometrioma Size: A Systematic Review and Meta-Analysis

Eberle A,[*,1] Nguyen DB,[2] Mansour F,[2] Papillon-Smith J,[2] Krishnamurthy S,[2] Zakhari A[2]. [1]McGill University Health Center, Montreal, QC, Canada; [2]Department of Obstetrics & Gynecology, Royal Victoria Hospital Glen Site - McGill University Health Center, Montreal, QC, Canada*
*Corresponding author.

Study Objective: To determine the efficacy of medical treatments on reducing endometrioma size.
Design: Systematic review and meta-analysis.
Setting: N/A.
Patients or Participants: Online databases were searched from inception to October 2022 for observational and randomized-control trials (RCTs) reporting change in size of endometrioma following medical management.
Interventions: Following PRISMA guidelines, all English-language, full-text articles reporting change in endometrioma size (either diameter or volume) by US or MRI following medical therapy with any medication were included. Studies assessing recurrent cysts following surgical management were excluded. Risk of bias was assessed using the Cochrane Risk of Bias Tool for RCTs and Newcastle-Ottawa Scale for observational studies.
Measurements and Main Results: A total of 10,994 articles were identified, among which 34 were eligible for inclusion (observational n=30, RCT n=4). Studies primarily investigated dienogest (n=13, meta-analysis n=4), combined hormonal contraception (CHC) (n=11, meta-analysis n=6) and gonadotropin releasing hormone agonist (GnRH-a) (n=7, meta-analysis n=3) as medical therapies. Individually, all 34 studies reported a reduction in mean diameter, cyst volume, or both; however, this was not found to be statistically significant in meta-analysis of the following interventions: dienogest – effect size 0.94 (95% CI: 0.63-1.26, mean follow-up 21 weeks), CHC – effect size 2.59 (95% CI: -0.15-5.34, mean follow up 37.3 weeks), GnRH-a – effect size 3.24 (95% CI: -0.12-6.61, mean follow up 20 weeks). Other interventions identified in this review but not amenable to meta-analysis included norethindrone acetate (n=5), cabergoline (n=1), danazol (n=2), dydrogesterone (n=1), N-acetylcysteine (n=1), relugolix (n=2), levonorgestrel intrauterine system (n=1), and GnRH-a with aromatase inhibitor (n=1).
Conclusion: Although individual studies on various medical interventions report modest reduction in endometrioma size, the effect size was not statistically significant after meta-analysis of studies on dienogest, CHC, or GnRH-a – likely reflective of significant heterogeneity among included studies.

Category: Robotics

SubCategory: New Instrumentation or Technology

10570 The Robotic Tenaculum: A Review of Adverse Event Reports to the Food and Drug Administration

Gornet ME,[*,1] Frost A,[2] Patzkowsky K[2]. [1]Division of Reproductive Endocrinology and Infertility, Department of Gynecology and Obstetrics, Johns Hopkins School of Medicine, Baltimore, MD; [2]Gynecology and Obstetrics, Division of Minimally Invasive Gynecologic Surgery, Johns Hopkins Hospital, Baltimore, MD*
*Corresponding author.

Study Objective: The surveillance of the safety, performance, and quality of robotic tenaculum devices (RTs) is critical. Monitoring for

possible device-related adverse events is done through medical device reports (MDRs). Our objective was to describe MDRs associated with RTs.
Design: Review of Manufacturer and User Facility Device Experience (MAUDE) database from 2013 to 2023.
Setting: N/A.
Patients or Participants: N/A.
Interventions: We queried the MAUDE database, a voluntary reporting system published by the Food and Drug Administration (FDA) for MDRs. Each MDR was reviewed individually and categorized by type of complication, nature of event according to user and manufacturer, and reporter type.
Measurements and Main Results: From 2012 to April 2023, 122 MDRs related to RTs were identified, with 120 MDRs included for analysis (2 were misclassified). Reporting was most often from the manufacturer (90.1%). Discovery was most often intraoperatively during myomectomy (N=52). User reports most often cited “broken wires” (N=88) and “broken jaws” (N=19). Manufacturer failure analysis identified "broken pitch cable” in 95% (N=114) of reports, caused by component failure (87%) or mishandling/misuse (12%). During manufacturer inspection, 35% (N=42) noted a crimp missing. Per manufacturer notes, “if a pitch cable breaks at the distal end, a cable segment and/or the crimp could fall into the patient”. Notably, only 4 reports explicitly identified a fragment falling into the patient.
Conclusion: Over 10 years, 120 RT MDRs were voluntarily reported to the FDA. Underestimation is possible as reporting rarely occurred by surgeons or facilities. Notably, 35% of defective RTs were reported to have a crimp missing on manufacturer inspection, which per manufacturer narrative could feasibly lead to a retained foreign body. This study demonstrates that although the number of reported MDRs for RTs is relatively small, these reports are consistent and have the potential to significantly impact patient care. Continued vigilance and improved RT device problem reporting from surgeons and facilities should be encouraged.

Category: Laparoscopy

SubCategory: Pelvic Pain

10575 Laparoscopic Hemi-Hysterectomy for Non-Communicating Rudimentary Horn

Ayyappan AA,[*,1] Jaworski E,[2] Wilson-Leedy J[3]. [1]University of New England College of Osteopathic Medicine, Biddeford, ME; [2]Albany Medical Center, Albany, NY; [3]Columbia Memorial Hospital, Hudson, NY*
*Corresponding author.

Study Objective: To demonstrate a laparoscopic technique for a hemi-hysterectomy for a noncommunicating rudimentary horn.
Design: We present a stepwise narrated demonstration of our laparoscopic technique for a noncommunicating rudimentary horn resection.
Setting: Referral Center in Upstate NY.
Patients or Participants: 38-year-old G0P0 female with dysmenorrhea and prolonged irregular bleeding.
Interventions: Evaluation performed with transvaginal ultrasound, MRI, renal US, and chromopertubation. Key laparoscopic steps include retroperitoneal dissection with lateralization of the ureters, isolation of uterine horn blood supply and repair of uterine serosal defect.
Measurements and Main Results: Resolution of dysmenorrhea.
Conclusion: Laparoscopic resection of a noncommunicating rudimentary horn can be safely performed when following key steps.

Category: Hysteroscopy

SubCategory: Fibroids

10579 Hysteroscopic Removal of an Embedded Intrauterine Device in a Calcified Fibroid Following Uterine Artery Embolization

LePoidevin L, Li L,* Nassif J. Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX*
*Corresponding author.

Study Objective: To review a complicated hysteroscopic removal of an embedded intrauterine device in a calcified fibroid in a patient who underwent uterine artery embolization six years prior.
Design: Stepwise demonstration using narrated video footage.
Setting: Academic tertiary care hospital.
Patients or Participants: A 47-year-old G1P0101 with an enlarged multifibroid uterus who presented with chronic vaginal discharge thought to be related to a retained embedded intrauterine device following a uterine artery embolization. All prior vaginal cultures and tests were negative and the discharge persisted despite treatment. Pelvic MRI showed a 15 cm uterus with numerous fibroids significantly distorting the uterine parenchyma with the intrauterine device embedded in a submucosal fibroid. Patient declined hysterectomy and opted for conservative surgical management with hysteroscopic removal.
Interventions: Hysteroscopic partial myomectomy of a calcified fibroid and removal of the embedded intrauterine device.
Measurements and Main Results: Entry into the uterine cavity was difficult due to extreme anteversion and calcium deposits in the cervical canal requiring resection. The uterine cavity was difficult to traverse due to distortion from multiple calcified submucosal fibroids without normal endometrium. The embedded intrauterine device was eventually located on the anterior surface of the uterus near the fundus and was removed successfully without complication after partial hysteroscopic myomectomy.
Conclusion: Intrauterine devices embedded in submucosal fibroids can be removed safely, via a hysteroscopic approach with a partial or complete myomectomy, through careful preoperative planning with an MRI to locate the intrauterine device and location of the submucosal fibroids. Our recommendation is to remove all retained intrauterine devices before uterine artery embolization as the fibroid degeneration and calcification process can complicate future removal. Chronic vaginal discharge related to an embedded intrauterine device will likely not resolve or improve without removal.

Category: Hysteroscopy

SubCategory: Endometriosis

10580 Surgical Approach to Hysterectomy with Obliterated Cul-De-Sac

Clark NM,[*,1] Parikh S,[2] Hanna H,[3] Reinstein J,[4] Connor A,[1] Webber VE[1]. [1]Obstetrics and Gynecology, University of Louisville, Louisville, KY; [2]Good Samaritan Hospital, Louisville, KY; [3]Corona, NY; [4]Minimally Invasive Gynecology, University of Louisville, Louisville, KY*
*Corresponding author.

Study Objective: The objective of this surgical video is to demonstrate a surgical approach to the laparoscopic hysterectomy before anatomy restoration in a patient with stage IV endometriosis and obliterated cul-de-sac. We additionally aim to demonstrate the approaches of ureterolysis in endometriosis surgery, and illustrate the use of performing colpotomy prior to dissection of rectosigmoid bowel adhesions in the posterior cul-de-sac.

Design: A patient with suspected stage IV endometriosis on imaging was consented for total laparoscopic hysterectomy, bilateral saplingectomy and endometriosis resection. The patient was counseled on ovarian preservation and consented for possible bilateral or unilateral oophorectomy. The patient's recovery was uncomplicated, and she followed-up in office two weeks post operatively.
Setting: The patient was positioned in dorsal lithotomy within the operating room prior to surgical intervention.
Patients or Participants: A singular patient is depicted in this surgical video.
Interventions: Total laparoscopic hysterectomy with bilateral salpingo-oophorectomy, bilateral ureterolysis, and endometriosis resection was performed prior to restoration of optimal pelvic anatomy.
Measurements and Main Results: N/A.
Conclusion: In this video we demonstrate a surgical approach to the total laparoscopic hysterectomy in a patient with stage IV endometriosis and obliterated cul-du-sac prior to restoration of optimal pelvic anatomy. Surgical treatment of endometriosis can be challenging due to anatomy distortion and indistinct tissue planes. Proper treatment relies on the surgeons' level of experience and comfort with retroperitoneal dissection. Our surgical approach highlights the importance of ureterolysis in these difficult endometriosis cases. Finally, performing colpotomy prior to restoring the bowel anatomy in the posterior cul-du-sac can allow for easier dissection of rectosigmoid colon adhesions.

Category: Endometriosis

SubCategory: Laparoscopy

10583 Racial Differences in Time to Diagnosis of Endometriosis

Haber H,[*,1] Zhang W,[2] O'Brien MA,[1] Clark N,[3] Movilla PR*[1]. [1]*Center for Minimally Invasive Gynecologic Surgery, Newton-Wellesley Hospital, Newton, MA;* [2]*Obstetrics and Gynecology, University of California, San Francisco, San Francisco, CA;* [3]*Obstetrics and Gynecology, Massachusetts General Hospital, Boston, MA*
*Corresponding author.

Study Objective: To understand if there is a disparity in time to diagnosis of endometriosis amongst patients of different racial backgrounds.
Design: Retrospective cohort study of all patients who underwent endometriosis surgery between 2015 – 2020.
Setting: Two large academic teaching hospitals.
Patients or Participants: All female patients, 18 years and older, who underwent surgical treatment for endometriosis via excision and/or ablation were identified using CPT code 58662. Patients were included if they had pathologic confirmation of endometriosis and excluded if they had a prior surgical diagnosis of endometriosis, concurrent malignancy, underwent surgery for infertility alone or if the finding was incidental on pathology.
Interventions: N/A.
Measurements and Main Results: Our primary outcome was time to diagnosis of endometriosis, which was defined as date of onset of symptoms, as reported by patients through chart review, to date of surgery. A total of 410 patients were included (285 (69.5%) white, 38 (9.3%) black, 35 (8.5%) Asian, 48 (11.7%) Hispanic, 4 (0.9%) other). Age and parity were similar between groups. There was no significant difference in time to diagnosis of endometriosis between white and non-white patients, (mean 49 vs 48.8 months, p=0.97). There was no significant difference in presenting symptoms between groups, with dysmenorrhea and pelvic pain the two most common (37.9 and 51.2% amongst all patients, respectively). Non-white patients were more likely to have pain symptoms with associated infertility (22.3% vs 13%, p=0.02) and a prior diagnosis of fibroids (34.7% vs 25.3%, p=0.05), whereas white patients were more likely to have a prior diagnosis of pelvic floor dysfunction (5.6% vs 0.8%, p = 0.03).
Conclusion: There was no significant difference in time to diagnosis of endometriosis between white and non-whites in our study population. Additional research is warranted to characterize specific differences in endometriosis diagnosis and management amongst patients of different racial backgrounds.

Category: Robotics

SubCategory: Laparoscopy

10584 The Road Less Traveled: Variant Inferior Epigastric Artery Injury during Robotic Surgery

Tran T,[*,1] Mahnert N,[2] Magrina J,[1] Mourad J*[3]. [1]*Minimally Invasive Gynecology Surgery, Banner University Medical Center - Phoenix, Phoenix, AZ;* [2]*Obstetrics and Gynecology, University of Arizona College of Medicine Phoenix, Phoenix, AZ;* [3]*Minimally Invasive Gynecologic Surgery, Banner University Medical Center, Phoenix, AZ*
*Corresponding author.

Study Objective: Review the anatomy of inferior epigastric arteries and rate of laparoscopic/robotic injury to vessels upon entry. Present a case of a patient who underwent a scheduled robotic hysterectomy and whose postoperative course was complicated by hemorrhagic shock due to an injury to a variant medial branch of the inferior epigastric artery at the umbilicus.
Design: Case Presentation.
Setting: Operating room at a tertiary academic medical center.
Patients or Participants: A 45-year-old gravida 2 para 2 with symptomatic fibroid is counseled for a robotic hysterectomy. Her postoperative course was complicated by hemorrhagic shock secondary to veress/trocar entry at the umbilicus, causing an injury to a variant medial branch of the inferior epigastric artery.
Interventions: Embolization by interventional radiology and laparoscopic evacuation of hematoma.
Measurements and Main Results: Resolution of bleeding from medial branch of the inferior epigastric artery.
Conclusion: Trocar insertion rarely causes injury to major blood vessels such as inferior vena cava, aorta, and iliac vessels. The most common injury to blood vessel is inferior epigastric artery, which was reported to be 0.2 - 2% of laparoscopic injuries. Identification of anatomic landmarks typically help surgeons placed trocars in same areas to performed laparoscopic or robotic surgery. Understanding the course of inferior epigastric artery will help minimize these injuries. This unique case demonstrates that despite understanding the main course of the artery, there is a 10% incidence of a medial branch of the inferior epigastric artery crossing the midline and can lead to trauma of this vessel at the umbilicus. It is important to be aware of variant anatomy as well as management options when an injury to an artery is identified.

Category: Fibroids

SubCategory: Research

10587 Fibroid Location Affects Peak Stresses and Strains at the Endometrial-Myometrial Interface: A Finite Element Analysis

Miller B,[1] Singh SS,[2] Flaxman TE[*,1]. [1]*Ottawa Hospital Research Institute, Ottawa, ON, Canada;* [2]*Obstetrics & Gynecology, University of Ottawa, Ottawa, ON, Canada*
*Corresponding author.

Study Objective: Uterine fibroids are common benign gynecological tumors, which affect the majority of persons with a uterus by age 50. Fibroids are described based on their size and depth relative to the endometrium which can be related to symptoms of abnormal uterine bleeding and infertility, but the mechanism is not well understood. This study sought to

evaluate the affect of fibroid location and fibroid depth on the stresses and strains at the endometrial-myometrial interface (EMI).
Design: Finite element analysis (FEA).
Setting: Tertiary academic hospital.
Patients or Participants: 44-year-old G3P3 patient with single fibroid.
Interventions: A finite element model was created from standard of care magnetic-resonance images of a patient with a single 3.5 × 2.1 × 2.6cm pedunculated fibroid. MRI was segmented to create 3D models of the uterus, cervix, endometrial cavity, fibroid, and uterosacral ligaments. Twelve simulations were performed using FEA with the fibroid at one of four uterine locations (fundal region, superior, inferior, and posterior-superior - adjacent to the cervical junction) and one of three depths (50% subserosal - FIGO Stage 6, intermural - FIGO Stage 4, and 50% submucosal - FIGO Stage 2). Resultant peak stresses (kPa) and strains at the EMI were recorded.
Measurements and Main Results: In general, peak EMI stress and strain increased as fibroid depth transitioned from 50% subserosal to 50% submucosal, with the greatest increase of 24-37% observed at the superior and inferior locations. At the 50% submucosal depth, the inferior and superior locations had peak EMI stress and strains 75-115% greater than those that acting at the fundal and posterior-superior EMI locations.
Conclusion: Findings suggest that fibroid location and depth impacts the stresses and strains acting at the EMI. This may provide insight into the mechanisms of fibroid related symptomology and be used in future work to identify risk factors for abnormal uterine bleeding and infertility in asymptomatic persons with fibroids.

Category: Research

SubCategory: Basic Science/Education

10593 Quality and Content of Preoperative Patient-Facing Resources for Total Laparoscopic Hysterectomy: A Canadian Academic Centre Review

Zhou G,[*,1] *Murji A,*[2] *Lim J,*[3] *Thurston J,*[4] *Shirreff L*[2]. [1]*Temerty Faculty of Medicine, University of Toronto, Toronto, ON, Canada;* [2]*Department of Obstetrics and Gynaecology, Mount Sinai Hospital, Toronto, ON, Canada;* [3]*Department of Obstetrics and Gynaecology, University of Toronto, Toronto, ON, Canada;* [4]*Department of Obstetrics and Gynaecology, University of Calgary, Calgary, AB, Canada*
*Corresponding author.

Study Objective: Assess content and readability of patient-facing resources for total laparoscopic hysterectomy (TLH) benchmarked against Clinical Practice Guidelines (CPGs).
Design: Multi-center retrospective review of patient-facing TLH educational handouts.
Setting: 19 English-speaking Canadian academic centers.
Patients or Participants: Surgical leads at each center were approached for patient preoperative education materials on TLHs. Resources specific to a condition (e.g., endometriosis) or different hysterectomy route (abdominal/vaginal) were excluded.
Interventions: Not Applicable.
Measurements and Main Results: Handout content was scored based on the presence or absence of 45 recommendations from the American Association of Gynecologic Laparoscopists (AAGL) Enhanced Recovery After Surgery (ERAS) CPG and 5 recommendations from the Society of Obstetricians and Gynaecologists of Canada (SOGC) Hysterectomy CPG. Each handout was independently scored by two assessors to determine if each recommendation was included. A summative score (/50) was assigned. Descriptive statistics and one-sample t-tests were performed to compare scores against an existing AAGL-endorsed TLH handout. Readability was evaluated using an online content analysis software (*www.readable.com*). Twenty-two TLH resources (21 paper-based, 1 electronic) from 16 hospitals were included. Most centres offered a single resource (median 1, range 1-4) with a mean length of 6.4±9.4 pages. Resources included a median of 18/50 ERAS recommendations (range 8-36/50). Information on comorbidity optimization, infection prophylaxis, and preoperative fasting were communicated in 3(14%), 4(18%) and 5(23%) handouts, respectively. Handouts more commonly reviewed postoperative pain (95%), return to physical activity (91%) and constipation prophylaxis (68%). All resources scored significantly higher than the AAGL-endorsed handout ($p<0.001$). Mean overall readability was moderate (57.5±11 out of 100).
Conclusion: The quality of resources given to patients prior to TLH is poor and there exists an opportunity for improving patient preoperative patient-facing educational materials.

Category: Endometriosis

SubCategory: Pelvic Pain

10596 What Does Toldt's Fascia Hide? Endometriosis

*Chiminacio I,** *Obrzut C. Endometriose, Chiminacio Medicina da Mulher, Pato Branco, Paraná, Brazil*
*Corresponding author.

Study Objective: To demonstrate that the anatomical site called Toldt's fascia, commonly referred to as a layer of physiologic adhesions in the left iliac fossa, is actually an embryologic remnant that hides endometriotic lesions.
Design: Edited video with three examples of laparoscopic endometriosis excision dissection showing how to identify hidden lesions in Toldt's fascia.
Setting: Three-port laparoscopic surgery for en-bloc excision.
Patients or Participants: Three regular cases with different degrees of endometriosis underwent surgery for endometriosis excision due to pelvic pain. The ages of the patients were 14, 25, and 32 years.
Interventions: A systematic surgical approach by en bloc peritonectomy of the posterior compartment of the pelvis to remove the endometriosis. As part of this procedure, the authors systematically explore the peritoneal embryological fold called Toldt's fascia from lateral to medial in the left iliac fossa, releasing and exploring the retroperitoneum in this area to release the nerve entrapment of the somatic nerves (for example, iliohypogastric, ilioinguinal, and genitofemoral nerves).
Measurements and Main Results: The video demonstrates that this anatomical site is not just a commonly called physiological adhesion, but actually hides lesions of probable embryologic origin of endometriosis.
Conclusion: Described by Carl Toldt, an Austrian anatomist, this area is sandwiched between two layers of mesothelium derived from the mesothelial cells of the primitive visceral and parietal peritoneum. The probable embryologic origin of endometriosis caused by Mullerian duct defects and the endometriosis path track left by them, with rotation of the colon formation during the gastrulation period, may explain the frequent presence of endometriosis in this location in the left side of the pelvis. The surgical systematization and careful exploration of this site may be a useful tool in endometriosis excision surgeries to reduce the disease persistence rates for all degrees of endometriosis, especially those with chronic pelvic pain.

Category: Endometriosis

SubCategory: Other

10604 Cutaneous Endometriosis: A Large Cohort Study

Gadson A,[*,1] *Jalloul R*[2]. [1]*Department of Obstetrics, Gynecology & Reproductive Science, The University of Texas Health Science Center at Houston, Houston, TX;* [2]*Department of Obstetrics, Gynecology & Reproductive Science, McGovern Medical School at The University of Texas Health Science Center at Houston, Houston, TX*
*Corresponding author.

Study Objective: Cutaneous endometriosis is a rare disease with a limited number of cases reported in the literature. The aim of this cohort study is

to report the presentation, diagnosis, and management of large cohort of patients with scar endometriosis.

Design: A retrospective cohort study.

Setting: Two tertiary care centers between 2008-2022.

Patients or Participants: All women operated due to suspected cutaneous endometriosis that was confirmed on histopathology between February 2008 to July 2022.

Interventions: Women's demographics, medical history, obstetrical and gynecological characteristics were collected from the women's electronic medical files. Data regarding presenting symptoms and duration, associated symptoms, imaging, size of the lesion, associated pelvic endometriosis or any pelvic pathology was collected from the pre-surgical clinical evaluation. Management, operation characteristics and histopathological diagnosis for confirmation was collected the operative and the pathological reports.

Measurements and Main Results: A total of 69 women met inclusion criteria. Median age was 36 (IQR30-40) years with median BMI of 29 (IQR26-33) kg/m^2. 62 (90%) of the women did not have previous diagnosis of endometriosis. Most of the women seek intervention due to cyclic pain (n=63,91%). All patients except two presented with lesion suspected at a cesarean scar, among them 38% (n=26) were following one surgery. The median time from last Cesarean delivery was 72(IQR43-96) months. The median estimation of the lesion maximal diameter was comparable between ultrasound, CT and MRI examination. Sub-analysis by the number of previous cesarean deliveries revealed similar patient's and lesion's characteristics. Median follow up was 18(12-25) days post-surgery. Complete resolution of symptoms was reported in 50% of the women.

Conclusion: Cutaneous endometriosis should be suspected when characteristics symptoms are present even in the absence of previous diagnosis of endometriosis. Cesarean delivery is a known risk factor, and the number of previous surgeries was not found to be associated with difference in the lesion characteristics.

Category: Fibroids

SubCategory: Basic Science/Education

10607 Validation of the International Federation of Gynecology and Obstetrics (FIGO) Leiomyoma Subclassification System

Goldrath KE,[*,1] *Sonni I,*[2] *Raman S,*[2] *Dave HE,*[2] *Bahrami S,*[2] *Depetris J,*[2] *Munro M*[1]. [1]*OBGYN, UCLA, Los Angeles, CA;* [2]*Radiology, UCLA, Los Angeles, CA*
*Corresponding author.

Study Objective: To determine the reproducibility and inter-reader reliability of the FIGO uterine leiomyoma subclassification system on small volume uteri.

Design: This is an inter-observer study using a curated sample of 31 anonymized magnetic resonance imaging (MRI) studies comprising 43 leiomyomas independently reviewed by a panel of three fellowship trained radiologists. The preoperative MRIs had been obtained for leiomyoma treatment planning at a single tertiary medical center. The investigators selected studies of small volume uteri containing one to three leiomyomas and ensured an even distribution amongst the various FIGO types; 0 through 8 and hybrids 2-5 and 3-5 lesions. A referent FIGO classification was established by two non-reader experts as determined by consensus. The reader panel reported their impression of the FIGO category of each leiomyoma using an electronic data collection system (Qualtrics) as well as other leiomyoma and uterine metrics. Variations in calculations and inter-reader reliability were assessed using kappa statistics.

Setting: Single tertiary academic institution.

Patients or Participants: Three fellowship-trained abdominal/women's imaging radiologists.

Interventions: N/A.

Measurements and Main Results: Among the 43 leiomyomas reviewed, all three readers were in full agreement of FIGO classification in 16 cases (37%). Two reader agreement was noted in 18 cases (42%). The mean agreement was 54% for each individual reader exactly matching with the referent classification [63%, 58%, 42%]. Many of the classifications not in agreement were only one category off, but the clinical significance was not determined. The reasons for misclassification are likely related to reader perception, even among experts. Revised inter-reader reliability data will be presented.

Conclusion: There was a modest level of accuracy among radiologists and the FIGO Leiomyoma subclassification system, with uncertain clinical significance at this time. A revision of the FIGO system, improved instructions for use of the clinical system and continued training of imaging readers may be opportunities for ongoing improvement in future iterations.

Category: Endometriosis

SubCategory: Laparoscopy

10609 Approach to Hysterectomy in Stage IV Endometriosis

Hanna H,[*,1] *Parikh S,*[2] *Reinstine J,*[3] *Pasic R*[1]. [1]*University of Louisville Hospital, Louisville, KY;* [2]*Good Samaritan Hospital, Louisville, KY;* [3]*Norton Health System, Louisville, KY*
*Corresponding author.

Study Objective: To demonstrate surgical approach to stage IV endometriosis.

Design: Video abstract.

Setting: University hospital operating room.

Patients or Participants: One patient with Stage IV endometriosis and chronic pelvic pain who presents for hysterectomy and resection of endometriosis.

Interventions: Total laparoscopic hysterectomy, ureterolysis, resection of endometriosis, bowel shaving, enterolysis.

Measurements and Main Results: Patient underwent ultrasound that showed positive sliding test, then intraoperatively she underwent extensive enterolysis and anatomy restoration with bilateral ureterolysis in order to perform resection of endometriosis and hysterectomy.

Conclusion: Mobilize the sigmoid colon off its attachments to expose the left adnexa and underlying structures:

- Ureterolysis is advisable, the ureter should be followed down to the cardinal ligament and the crossing with the uterine vessels. When covered with endometriotic lesions, dissection of the ureter will be necessary to prevent injury.
- As the presence of dense adhesion between the rectum and other structures may obscure the DE, complete dissection of these adhesions is mandatory.
- Use of EEA sizer can be helpful to delineate and manipulate the rectum.
- Adhesiolysis is performed with cold scissors, blunt dissection or thermal instruments with minimal collateral thermal spread.

Category: Laparoscopy

SubCategory: Pelvic Pain

10612 Laparoscopic Resection of Uterine Niche in a Patient with a History of Prior Cesarean Section

Atobiloye N,[*,1] *Khalil S*[2]. [1]*Department of Obstetrics, Gynecology and Reproductive Science, The Icahn School of Medicine at Mount Sinai, New York, NY;* [2]*Department of Obstetrics, Gynecology and Reproductive Science, Icahn School of Medicine at Mount Sinai, New York, NY*
*Corresponding author.

Study Objective: To describe the presentation, diagnosis of uterine niches and to highlight optimal techniques for surgical management via laparoscopic resection.

Design: Surgical video.

Setting: An academic teaching hospital.

Patients or Participants: 30-year-old P3023 with a history of one cesarean section complicated by cesarean scar ectopic successfully treated with methotrexate and intrauterine balloon, now presenting with pelvic pain and subsequently diagnosed with a uterine niche on imaging.
Interventions: The patient consented for a laparoscopic resection of a uterine niche. During surgery, the patient was found to have dense bladder adhesions which were dissected off to reveal the thinned-out fibrotic uterine niche in the anterior lower uterine segment. The niche was successfully resected and the defect was repaired in three layers.
Measurements and Main Results: The uterine niche was resection was repaired with no complications. The patient was discharged the same day with a normal postoperative course. The pathology showed fibromuscular tissue fragments consistent with scar tissue, chorionic villi and weakly proliferative endometrium.
Conclusion: Patients with a uterine niche who are symptomatic or desire future pregnancy should be treated. Treatment includes laparoscopic resection, with an option to combine with hysteroscopy. Key strategies for laparoscopic excision include backfilling the bladder before dissection, dilute vasopressin for reduced blood loss, use of spiral and symmetric sutures for better hemostasis and approximation respectively, and an intrauterine balloon to prevent recurrence of adhesions.

Category: Endometriosis

SubCategory: Endometriosis

10618 Surgical Based Decision Tree Analysis Modelling to Predict AAGL Endometriosis Surgical Complexity Levels

Mak J,[*,1] *Eathorne A,*[2] *McClenahan P,*[3] *Gil A,*[4] *Condous G*[5]. [1]*Department of Obstetrics and Gynaecology, Central Coast Local Health District, Holden St, Gosford, Australia;* [2]*Medical Research Institute of New Zealand, Wellington, New Zealand, Wellington, New Zealand;* [3]*Nepean Hospital, NSW, Australia, New South Wales, Australia;* [4]*Nepean Hospital, New South Wales, Australia;* [5]*OMNI Ultrasound and Gynaecological Care, Sydney, Australia*
*Corresponding author.

Study Objective: Develop surgical-based endometriosis severity staging models to predict AAGL surgical complexity levels.
Design: Univariate analysis used to identify surgical features of endometriosis that best predict surgical complexity and build decision tree models of staging.
Setting: Multicentre.
Patients or Participants: Pre-existing dataset (n= 640) with comprehensive surgical data, collected prospectively.
Interventions: Observational.
Measurements and Main Results: 4 stage (model 1) and 3 stage (model 2) surgical-based decision tree analysis models were developed. Data were divided into training (n=448 (70%)) and test data (n=192 (30%)). Univariate analysis via chi-squared test was performed on 36 surgical finding categories. The C4.5 algorithm used to identify optimal features for inclusion in decision trees. Models built on training data, applied to test data. Pruning and tuning parameters applied. Concordance of endometriosis staging models and AAGL surgical complexity level was assessed using kappa, weighted kappa coefficients, sens, spec, PPV and NPV. Model 1 correlated with surgical complexity levels (A, B, C and D) and model 2 correlated with (A, B+C and D). Model 1 identified six surgical features (any DE, bowel DE, endometrioma, bowel superficial endometriosis, POD complete obliteration & bladder DE); Model 2 identified six surgical features (any DE, bowel DE, endometrioma, bowel superficial endometriosis, right uterosacral ligament DE & partial POD obliteration). Model 1 (4 stage) accuracy predicting AAGL surgical complexity level (95%CI's): Kappa 0.60 (0.52-0.69), Weighted Kappa 0.66 (0.57-0.74). Sens/spec/PPV/NPV for A (97.73/87.88/72.88/99.15), B (75.86/92.37/83.02/88.62), C (28.57/94.49/66.67/77.42), D (92.00/86.75/53.49/98.50). Model 2 (3 stage) accuracy predicting AAGL surgical complexity level: Kappa 0.74 (0.65-0.83), Weighted Kappa 0.78 (0.71-0.85). Sens/spec/PPV/NPV for A (100/93.39/87.30/100), B+C (81.32/87.06/87.06/81.32), D (63.33/93.84/67.86/92.57).
Conclusion: Decision tree models for surgical based endometriosis severity staging built on univariate analysis has a high level of agreement with AAGL surgical complexity levels. The 3-stage system outperformed the 4-stage system.

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