AAGL 26

55TH GLOBAL CONGRESS ON MIGS

BOSTON, MASSACHUSETTS
NOVEMBER 13-16, 2026

Syllabus

PGSIG-851

Bread and Butter of the Endometriosis Surgeon: Technical Mastery in Stage IV Disease

HONORARY CHAIR
Charles H. Koh, MD

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PGSIG-851: Bread and Butter of the Endometriosis Surgeon: Technical Mastery in Stage IV Disease

Chair: Ted T.M. Lee
Co-Chair: Jessica Opoku-Anane
Faculty: Cara R. King, Ted T.M. Lee, Jessica Opoku-Anane, Sukhbir S. Singh

Course Description

Stage IV endometriosis presents some of the most challenging anatomy in gynecologic surgery, requiring precise dissection, disciplined technique, and deep familiarity with retroperitoneal and posterior compartment anatomy. This advanced surgical course focuses on the essential operative maneuvers—the true "bread and butter" of the endometriosis surgeon—that enable safe and effective management of severe disease. Through four focused, expert led presentations, participants will review evidence based techniques for adnexal preservation, pelvic sidewall dissection and parametrial release, excision of retrocervical and rectovaginal disease, and hysterectomy in the frozen pelvis. Emphasis is placed on reproducible dissection planes, ureteral and vascular safety, restoration of pelvic anatomy, and strategies to optimize surgical outcomes in complex cases. This activity is designed for surgeons seeking to strengthen their technical foundation and refine their operative approach to Stage IV endometriosis.

Learning Objectives: *At the end of this course, the participant will be able to:* 1) Apply foundational surgical techniques for adnexal preservation and pelvic sidewall management in severe endometriosis, including strategies for ovarian and tubal protection, decision making around salpingectomy, endometrioma management, and safe retroperitoneal dissection; 2) Perform advanced excisional techniques across deep pelvic compartments—including parametrial, retrocervical, and rectovaginal disease—using reliable anatomic landmarks, rectal mobilization strategies, and nerve sparing principles to optimize safety and functional outcomes; and 3) Integrate endometriosis excision into hysterectomy for Stage IV disease by employing structured approaches to bladder dissection, parametrial release, ureteral protection, and anatomic restoration in the frozen pelvis.

Course Outline

10:15 am	Welcome, Introduction and Course Overview	T. Lee
10:20 am	Commanding the Lateral Pelvis: Pelvic Sidewall Dissection and Parametrectomy in Dense Fibrosis	T. Lee
10:45 am	Adnexal Preservation Mastery: Minimizing Damage, Maximizing Function	J. Opoku-Anane
11:10 am	From Known to Unknown: Safe Entry Into the Pararectal and Rectovaginal Spaces and Excision of Retro Cervical and Rectovaginal Endometriosis in Stage IV Disease	S. Singh
11:35 am	Hysterectomy in Severe Endometriosis: Integrating Excision for Optimal Surgical Outcomes	C. King
12:00 pm	Discussion Questions & Answers	All faculty
12:15 pm	Adjourn	

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Disclosure of Relevant Financial Relationships

As an ACCME-accredited provider, AAGL is responsible for ensuring that accredited education is fair, balanced, free of commercial bias, and supports safe, effective patient care. AAGL maintains control over all aspects of educational planning, content, faculty selection, delivery, and evaluation.

All individuals in a position to control educational content are required to disclose financial relationships with ACCME-defined ineligible companies within the past 24 months. AAGL identifies and mitigates all relevant financial relationships before individuals assume their respective roles. Educational content is also subject to independent peer review by individuals without relevant financial relationships.

Disclosure information and acknowledgment of any commercial support are provided to learners before the activity to promote transparency and maintain the independence and integrity of the education.

Asterisk (*) denotes no financial relationships with ACCME-defined ineligible companies to disclose.

PLANNER DISCLOSURES

The following members of AAGL have been involved in the educational planning and/or review of this course (listed in alphabetical order by last name).

PROFESSIONAL EDUCATION COMMITTEE

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Adrian Balica, MD*
Jamal Mourad, DO – Proctor: Intuitive Surgical
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Steven Radtke, MD*
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Linda Bradley, MD, AAGL Medical Director*
Linda Michels, AAGL Executive Director*
Linda Bell, AAGL Admin Support*
Nancy Williams, COO, CME Consultants*

SCIENTIFIC PROGRAM COMMITTEE

Nash Moawad, MD, MS, Chairman – Consultant (ended 12/2024): Medtronic, Womed, Integra Life Sciences
Amani Harris, MD*
Ted Lee, MD – Advisory/Consultant: Johnson & Johnson, Regeneron Pharmaceuticals
Nucelio Lemos, MD, PhD – Speakers Bureau: Pfizer, Inc., Medtronic; Advisory Board: Knight Therapeutics, Vecfer Pharma
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Angela Chaudhari, MD - Consultant: Tag/Dream Medical, Johnson & Johnson; Speakers Bureau: Johnson & Johnson
Linda D. Bradley, MD, Medical Director*
Linda Michels, Executive Director, AAGL*

COURSE CHAIR DISCLOSURE

Ted TM Lee, MD – Consultant: Regeneron, Johnson & Johnson, Jmees, Anuat

COURSE CO-CHAIR DISCLOSURE

Jessica Opoku-Anane, MD, MS*

FACULTY DISCLOSURES

The following faculty have agreed to support their presentations and clinical recommendations with the best available evidence from the medical literature (in alphabetical order by last name).

Cara R. King, DO, MS – Consultant: Medtronic
Ted TM Lee, MD – Consultant: Regeneron, Johnson & Johnson, Jmees, Anuat
Jessica Opoku-Anane, MD, MS*
Sukhbir Sony Singh, MD – Advisory Board: Bayer HealthCare; Consultant: AbbVie, Karl Storz Canada, Knight Pharmaceuticals; Speakers Bureau: AbbVie, Knight Pharmaceuticals

MITIGATION OF RELEVANT FINANCIAL RELATIONSHIPS

All relevant financial relationships have been mitigated.

Drs. Lee, Lemos, Mikhail, and Chaudhari's planning decisions, as part of the Scientific Program Committee (SPC), were peer reviewed by other planners on the SPC who had disclosed no financial relationships with ineligible companies, and found to be fair, balanced, and free of commercial bias. Dr. Moawad's financial relationships ended 12/2024, thus mitigating them. For most of his AAGL Professional Education Committee service, Dr. Mourad had no financial relationships to disclose. He recently disclosed a new relationship as a Proctor for Intuitive Surgical. Since then, he has not participated in activities involving control or influence over accredited educational content; therefore, no additional mitigation was necessary.

Dr. Lee's role as Course Chair was limited primarily to course oversight and moderation, rather than development of educational content. Any planning decisions or content under his influence were subject to independent peer review by individuals without relevant financial relationships.

The presentation content for course faculty, Drs. King, Lee, and Singh, has been peer reviewed and found to be fair, balanced, and free from commercial bias.

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Commanding the Lateral Pelvis: Pelvic Sidewall Dissection and Parametrectomy in Dense Fibrosis

Ted Lee, M.D.
Director of Minimally Invasive Gynecologic Surgery
Chief of Surgical Innovation
NYU Langone Health
Professor. Obstetrics and Gynecology
NYU Grossman School of Medicine



1

Disclosures

Presenter: Ted Lee, MD

Financial / commercial relationships: Consultant :Johnson & Johnson, Jmees and Anuat

The surgical techniques presented reflect the available literature and the presenter's clinical experience.

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2

Learning Objectives

Recognize when an endometrioma adherent to the pelvic sidewall should be approached as a retroperitoneal operation rather than an isolated ovarian cystectomy.

Describe a systematic approach to identifying and dissecting the ureter, uterine artery, and parametrial tissues in stage IV endometriosis.

Explain how retroperitoneal fibrosis can obliterate normal surgical spaces and how anatomic landmarks can be used to recreate those planes.

Apply principles of fertility-preserving surgery while balancing disease excision with preservation of ovarian, uterine, ureteral, vascular, and autonomic function.

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3

The Endometrioma Is Only a Sign of Severe Disease and is not the Whole Disease

Unlike benign ovarian cyst , endometrioma rarely occur in isolation without other signs of severe disease elsewhere in the pelvis.

Frequently associated with deep infiltrating endometriosis, obliteration of cul de sac with rectovaginal involvement

An endometrioma adherent to the pelvic sidewall may represent the visible endpoint of much deeper disease.

The extent of associated disease is variable: from superficial peritoneal disease to deep retroperitoneal disease with ureteral and parametrial involvement.

The operation should be dictated by the anatomy that lies beneath and around the endometrioma.

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4

A Spectrum of Pelvic Sidewall Disease

The Endometrioma Is Only a Sign of Severe Disease and is not the Whole Disease

IP ligament / ovarian fossa

Uterovarian ligament and ovarian attachment

Uterosacral ligament and lateral parametria

Extension toward the pararectal and posterior compartments

Retroperitoneal fibrosis with distorted or absent planes

Ureteral involvement / ureterolysis

Uterine artery—especially the ascending branch

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5

The Parametrial Dilemma

Why is parametrial disease sometimes left behind?

- Dense fibrosis can erase familiar planes.
- The ureter may be displaced, tethered, or incorporated in fibrosis.
- The uterine artery and ascending branches may traverse the operative field.
- Bleeding can rapidly obscure the anatomy.
- When a safe plane cannot be established, attempted excision may carry substantial ureteral or vascular risk.

The surgical question is not simply: Can I remove it?

It is: Can I reconstruct the anatomy well enough to remove it safely?

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6

Circumscribe the disease

After mobilizing the endometrioma from the pelvic sidewall

Lateral incision: IP ligament → utero-ovarian ligament

Medial/posterior incision: utero-ovarian ligament → over the ascending uterine artery → posterior cervix / uterosacral ligament

Posterior/lateral incision: base of uterosacral ligament → back toward the IP ligament

The incision is not fixed: its location and extent should be tailored to the location and depth of disease
Teaching point:

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Find the Ureter Where the Anatomy Is Still Normal

- Start where the ureter is recognizable. Usually at pelvic brim medial to IP ligament
- **Develop the pararectal space** between the ureter and internal iliac artery
- The lateral aspect of the ureter may provide a more reliable reference when medial tissues are fibrotic.
- At approximately the 12 o'clock position, identify the tissue plane that can be developed alongside the ureter.
- Follow that plane toward the ureteric tunnel.

The ureter is both a structure to preserve and a fixed landmark for the depth and lateral extent of dissection.

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Follow the Uterine Artery From Its Origin

The uterine artery has a spiral, three-dimensional course.

- In distorted parametrial anatomy, guessing its course can produce unnecessary bleeding.
- Identify it proximally and follow it toward the uterus.
- Define its relationship to the ureter before entering deeper parametrial disease.
- Once the vessel is mapped, the surrounding fibrosis becomes easier to interpret.

VIDEO 2: Uterine artery identification → ureter/artery relationship

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The Ascending Uterine Artery: Structure AND Landmark

The ascending branch is not simply a vessel to preserve.

It can serve as an anatomic reference for the parametrial dissection.

- A substantial component of parametrial disease may lie posterior to the ascending branch.
- Exposing the branch establishes a reproducible boundary/depth reference.
- This can be particularly useful when transitioning toward retrocervical or rectovaginal disease.
- The goal is controlled dissection around a known structure—not blind dissection through fibrosis.

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VIDEO 3: Ascending branch → parametrial excision → posterior transition

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The Ascending Uterine Artery as an Anatomic Reference

The uterine artery is more than a structure to preserve—it can be a landmark.

In combined parametrial, retrocervical, and rectovaginal disease, exposure of the ascending uterine artery can provide a reproducible lateral and depth reference.

Defining the artery can help orient the surgeon before entering deeper posterior disease.

This creates a bridge between lateral parametrial dissection and posterior-compartment excision.



Ascending uterine artery
→ parametrial orientation
→ transition posteriorly

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The Operative Strategy: Reconstruct the Anatomy First

1. Establish orientation before committing to deep dissection.
2. Identify the ureter in recognizable tissue and follow it through the diseased field.
3. Define the uterine artery and its relationship to the ureter.
4. Develop the available retroperitoneal spaces—or recreate them when fibrosis has obliterated them.
5. Excise disease only after the critical structures and the intended plane are understood.

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The Handoff: From Sidewall to Posterior Compartment

At the end of the lateral dissection, the ureter and uterine artery should be understood in three dimensions.

The parametrial plane has been defined.

But the cul-de-sac may remain obliterated.

The next challenge is opening the pararectal and rectovaginal spaces and addressing retrocervical / rectovaginal disease



Transition clip
End at the point where posterior-compartment dissection begins

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Selected References

Keckstein J, et al. Recommendations for the surgical treatment of endometriosis Part 2: deep endometriosis. Human Reproduction Open. 2020.

Gingold JA, Falcone T. Retroperitoneal anatomy during excision of pelvic side wall endometriosis. J Endometr Pelvic Pain Disord. 2016;8:62–66.

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Ceccaroni M, et al. Nerve-sparing laparoscopic radical excision of deep endometriosis with rectal and parametrial resection. J Minim Invasive Gynecol. 2010.

Nerve-sparing surgery for deep lateral parametrial endometriosis. Fertil Steril. 2022.

Ianieri MM, et al. Impact of nerve-sparing posterolateral parametrial excision for deep infiltrating endometriosis on postoperative bowel, urinary, and sexual function. Int J Gynaecol Obstet. 2022;159:152–159.

Becker CM, et al. ESHRE guideline: endometriosis. Hum Reprod Open. 2022;2022(2):hoac009.

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Adnexal Preservation Mastery

Minimizing Damage, Maximizing Function

Jessica Opoku-Anane, MD, MS · New Brunswick, NJ

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Financial Disclosure

No financial relationships to disclose

Jessica Opoku-Anane, MD, MS

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Objectives

At the conclusion of this activity, participants will be able to:

- Apply adnexal mobilization and cystectomy techniques that protect ovarian cortex and vascular attachments.
- Select energy and hemostatic strategies using comparative evidence and patient-specific goals.
- Assess tubal preservation options and recognize when anatomy, tissue injury, or safety requires a change in strategy.

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Apply Reproducible Maneuvers to Preserve Adnexal Function

MOBILIZE	PRESERVE	REASSESS
• Identify safe anatomy • Release adnexal fixation	• Develop the tissue plane • Control bleeding selectively	• Assess tubal function • Recognize stopping points

Adnexal technique within the stage IV operative plan

4

4

Define Surgical Success Around the Patient's Goals

A hypothetical patient

32 years old

- Recurrent bilateral endometriomas
- Prior ovarian cystectomy
- Significant pain
- Pregnancy desired within one year

What must this operation preserve?



AI-generated illustrative image; not a real patient encounter

5

5

Confirm the Indication Before Operating on the Ovary

Consider REI consultation before repeat or bilateral ovarian surgery

Symptoms or diagnostic concern	ART planning
• Persistent symptoms • Concerning or uncertain findings	• Follicle accessment when relevant • No routine cystectomy solely to improve live birth

Becker et al., 2022. PMID: 35350465

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Interpret Ovarian Reserve Markers Without Overpromising Fertility

Measure	What it helps assess	What it cannot guarantee
AMH / AFC	Reserve; stimulation response	Egg quality or natural conception
Oocyte yield	Response to retrieval	Clinical pregnancy
Clinical pregnancy	Pregnancy established	Live birth

"The true benefit of fertility preservation in women with endometriosis remains unknown."

ESHRE 2022: PMID 35350465 (quotation)
ASRM 2020: PMID 33280722 (reserve-marker interpretation)

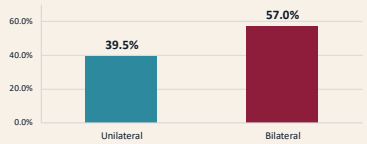
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Bilateral Cystectomy Places More Ovarian Reserve at Risk

12 prospective controlled studies · 783 patients

Maximum pooled AMH decline from baseline



489 unilateral
294 bilateral

Follow-up through 12 months

Repeat surgery: additional reserve concern

Younis et al., 2019. PMID: 30715359; Muzii et al., 2015. PMID: 25577464

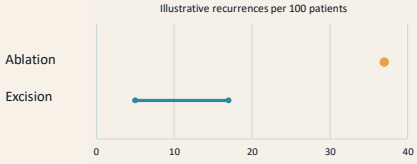
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Balance Recurrence Against Ovarian Tissue Preservation

One-year endometrioma recurrence

Illustrative recurrences per 100 patients



37

5–17

4 trials · 264 patients
OR 0.17 (95% CI 0.09–0.34)
Low-certainty evidence

2026 update: recurrence RR 0.61 (95% CI 0.37–1.01); interval includes no effect

Kalra et al., 2024. PMID: 39588841; Romeo et al., 2026. PMID: 42424709

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Expose the Adnexa Before Applying Traction



(b) Human female reproductive system: anterior view

Normal anatomy as an orientation reference
Keckstein et al., 2020. PMID: 32064361; image: OpenStax, CC BY 4.0

Release fixation under direct vision

- Identify the ureter before release
- Define ovarian and tubal attachments
- Protect hilar vascular connections
- Reassess after mobilization

Recognizable anatomy before stronger traction

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Develop a Visible Plane Before Stripping the Cyst Wall

Operative maneuver	Preservation safeguard
Expose and inspect	Adequate cavity exposure
Identify cleavage plane	Incision away from hilar / mesovarian vessels
Apply opposing traction	Controlled separation w/o tearing cortex
Reassess hilar adherence	Change approach before escalating tissue injury
Complete the repair	Targeted hemostasis; reconstruction as needed



Saridogan et al., 2017. PMID: 31486802; expert technical recommendations

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Change Strategy Before Hilar Dissection Sacrifices Cortex

Assess the cleavage plane

Visible interface
Gentle opposing traction

Advance along the defined plane

Hilar adherence
Distortion or bleeding

Pause and reassess; consider selected ablation

Selected combined treatment: technical option, not proven fertility superiority

Saridogan et al., 2017. PMID: 31486802; proposed decision diagram, not a validated rule

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Match the Energy Source to the Tissue Task

Source	Mechanism / role	Evidence boundary
CO_2 laser	Water-absorbed vaporization	Small reserve-focused RCTs
Neutral argon plasma	Heated gas; no patient current	Cohort fertility data; not argon coagulation
Monopolar	Current to return electrode	Depth and unintended current risks
Bipolar	Current between electrodes	Hemostasis data; limit repeat injury
Ultrasonic	Mechanical vibration; cuts and coagulates	Thermal injury possible; superiority unproven

No universal safe wattage, depth, or fertility ranking

Saridogan 2017: PMID 31486802; van de Berg 2023: PMID 37190314; Miller 2026: PMID 41587722

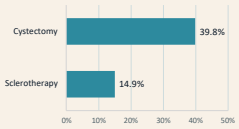
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Emerging Techniques Aim to Preserve Tissue, but Long-Term Outcomes Remain Uncertain

Approach	Evidence
Sclerotherapy	Pilot trial: AMH signal
Comparative techniques	No overall winner
ICG perfusion	Investigational
ATOPE trial	Deep disease: ongoing

Mean AMH decline at 12 months



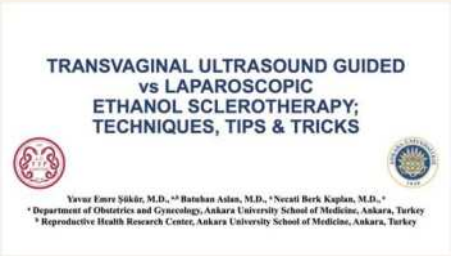
Pilot RCT: 40 participants; AMH is a surrogate marker

PMIDs: 41879728, 41186685, 41587722, 42335746, 42049313, 40332134

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Compare Transvaginal and Laparoscopic Sclerotherapy



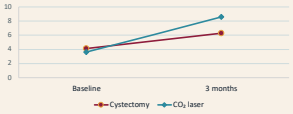
JMIG. 2025;32:581–582. PMID: 40164427

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CO_2 Laser Has a Reserve Signal With Limited Stage IV Evidence

AFC in the treated ovary



Outcome	Cystectomy	CO_2 laser
AMH, ng/mL	2.6 → 1.8	2.3 → 1.9
AFC	4.1 → 6.3	3.6 → 8.6

AFC change: between-group P=.016

Excluded deep disease and prior ovarian surgery; short follow-up

Candiani et al., 2018. Hum Reprod. 33:2205–2211. PMID: 30299482

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Plasma Cohorts Support Feasibility, Not Fertility Superiority

104 infertile patients · endometriomas >3 cm · nonrandomized comparison

Pregnancy probability	Plasma (n=64)	Cystectomy (n=40)
24 months, % (95% CI)	61.3 (48.2–74.4)	69.3 (54.5–83.0)
36 months, % (95% CI)	84.4 (72.0–93.4)	78.3 (63.8–90.0)

Adjusted procedure effect: not statistically significant

Kaplan–Meier estimates; baseline imbalance; pregnancy ≠ live birth

Mircea et al., 2016. J Minim Invasive Gynecol. 23:1138–1145. PMID: 27553184

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Robotic Assistance Has Not Established a Fertility Advantage

Evidence	Finding	Limit
LAROSE RCT, 2017 n=73	Robot vs lap: mean 106.6 vs 101.6 min; perioperative outcomes similar	Not an ovarian-reserve or fertility trial
Park cohort, 2026 81 patients; one surgeon	Robot:lap cortex ratio 0.55 95% CI 0.32–0.93	Follicle metrics similar; retrospective surrogate

Select the platform for safe execution and team expertise

Soto et al., 2017. PMID: 28238489; Park et al., 2026. PMID: 42237004

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Interpret New Robotic Reserve Data as Hypothesis-Generating

36-month outcome	ROS + robotic (n=69)	Conventional laparoscopy (n=85)
Diminished ovarian reserve	27.54%	44.71%

Platform and suturing technique changed together

Selection bias; no causal isolation of robotics; no proven live-birth benefit

Lin et al., 2026. J Robot Surg. 20:138. PMID: 41485158

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Protect Tubal Attachments and Assess Functional Potential

Operative task	Decision / safeguard
Release adhesions	Expose fimbriae; preserve mesosalpinx where feasible
Assess the tube	Fimbriae, damage, and patency when indicated
Manage hydrosalpinx	Individualize repair, salpingectomy, or occlusion

Patency alone cannot establish function or eliminate ectopic risk

ASRM Practice Committee, 2021. PMID: 33642065; evidence largely from tubal-factor infertility

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Recognize When Safety Requires Changing the Preservation Plan

"Preservation has safety limits."

- Suspicious findings
- Uncontrolled bleeding
- Uncertain anatomy
- Procedure beyond consent or available expertise

Reassess the plan; seek support; document the decision

Saridogan et al., 2017. PMID: 31486802; Keckstein et al., 2020. PMID: 32064361

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Connect Surgery to Fertility Planning and Recurrence Prevention

Pregnancy timeline?

Pregnancy desired now

- Timely fertility pathway
- Operative findings informing care

Pregnancy deferred

- Individualized suppression
- Tolerability and contraindications

Suppression: recurrence RR 0.41 (95% CI 0.26–0.65)

Zakhari et al., 2021. PMID: 33020832; 14 studies, n=1,766; median 18 months; I^2=68%

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Apply the Preservation Strategy to the Difficult Case

Recurrent bilateral disease: three operative decisions

Fixed adnexa	Hilar adherence	Tubal damage
Identify ureter and attachments	Reassess the cleavage plane	Assess fimbriae and functional potential
Release under direct vision	Change strategy before tissue injury	Individualize treatment with fertility goals

Which maneuver would you change, and why?

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Make Adnexal Preservation Part of Every Complex Operative Plan

"Preserve function at every operative step."

Teaching statement

- Expose before traction
- Respect the cleavage plane
- Protect hilar vessels
- Use targeted hemostasis
- Assess tubal function
- Reassess before closure

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25



26

References

Becker 2022: ESHRE. 35350465
Kalra 2024: Excision. 39588841
Romeo 2026: Ablation. 42424709
Paik 2024: Hemostasis. 38504428
Saridogan 2017: Endometrioma. 31486802
Keckstein 2020: Deep disease. 32064361
Zakhari 2021: Suppression. 33020832
ASRM 2021: Tubal surgery. 33642065
Miller 2026: Energy. 41587722
Hwang 2026: Sclerotherapy. 41879728
García-Tejedor 2025: Sclerotherapy. 41186685
Younis 2019: Reserve. 30715359
Muzii 2015: Reoperation. 25577464
Candiani 2018: Laser. 30299482
Mircea 2016: Plasma. 27553184
Soto 2017: LAROSE. 28238489
Park 2026: Cortex. 42237004
van de Berg 2023: Plasma. 37190314
Lin 2026: Robotics. 41485158
ASRM 2020: Markers. 33280722
ICG feasibility 2026. 42335746
Crestani 2026: ATOPE protocol. 42049313
Şükür 2025: Sclerotherapy video. PMID: 40164427

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Known to Unknown

Pararectal & Rectovaginal Spaces for Excision of Posterior Compartment Disease

Sukhbir S Singh, MD FRCSC

Department Head and Chair
The Ottawa Hospital & Faculty of Medicine, University of Ottawa

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Disclosure

- I have the following disclosures:
  - Consultant and CPD Programs: Knight Pharmaceuticals, Abbvie
- Not related to this course
  - Consultant: Karl Storz Canada
  - Advisory Board: Bayer

3

Objectives

- *Identify the anatomy of the posterior compartment as it relates to excision of deep rectovaginal endometriosis*
- *List the steps to approach endometriosis involving the retro-cervical/rectovaginal compartment*
- *Demonstrate examples using videos & animation*

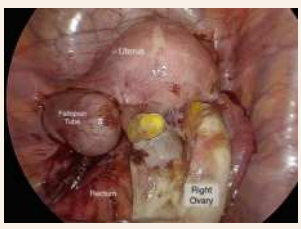
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What we didn't know

- "Deep" Endometriosis – a term that evolved over the past 20 years
- Severity, complexity underestimated, under diagnosed due to poor quality imaging & understanding

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Our Pandora's Box – Deep Endometriosis

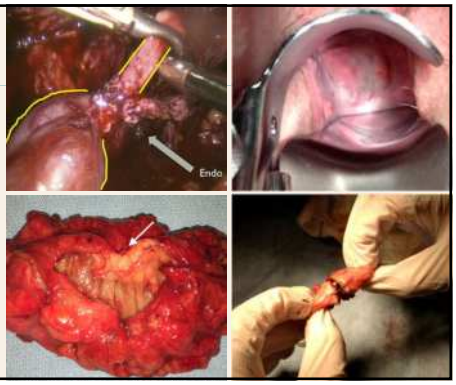




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Deep Endometriosis

- Histologic definition: endometriosis depth of >5mm penetration
- Practical definition: Endometriosis + fibrosis involving organs, nerves, muscle etc..



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Surgical management of Endometriosis



Superficial/Peritoneal Disease
- Medical
- Surgical – General Gynecology



Ovarian Endometrioma
- Fertility Considerations
- Surgery – Advanced or General Gynecology

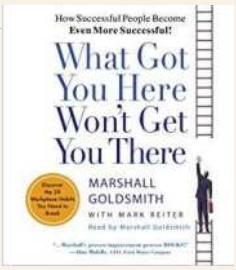


Deep Endometriosis
- Medical
- Advanced Surgical Centre of Excellence

8

What got us here, won't get us there

- Deep Endometriosis requires training, mentorship and a commitment



9

What we need

- Deep Endometriosis requires training, mentorship and a commitment
- Key competencies:
  - Anatomy
  - Imaging Interpretation and Support
  - Dissection skills
  - Bowel surgery experience and team
  - Managing complications



10

Anatomy



Peritoneal/Superficial Endometriosis



Deep Endometriosis

11

Anatomy



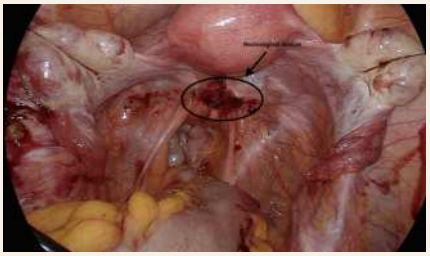
Step 1. Let's see the posterior compartment



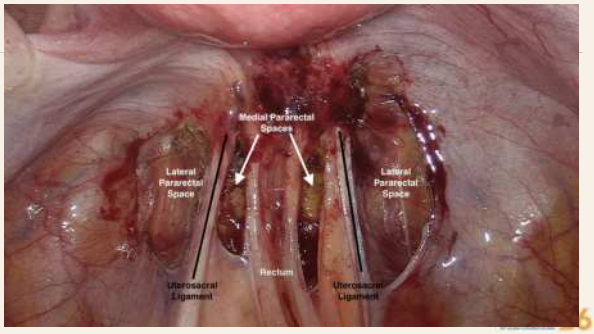


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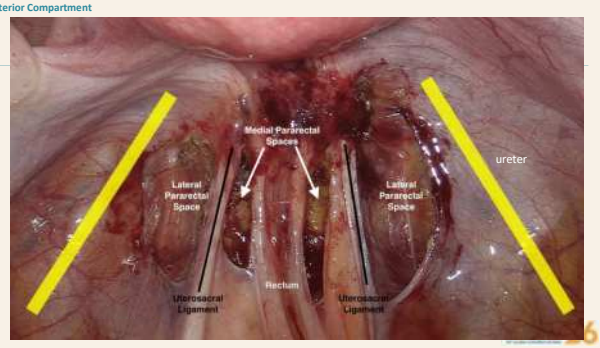
The Posterior Compartment



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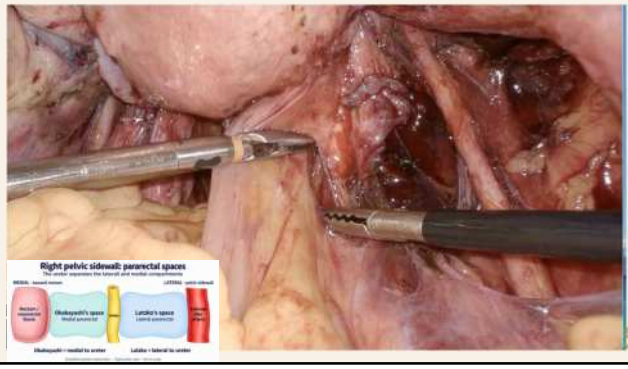


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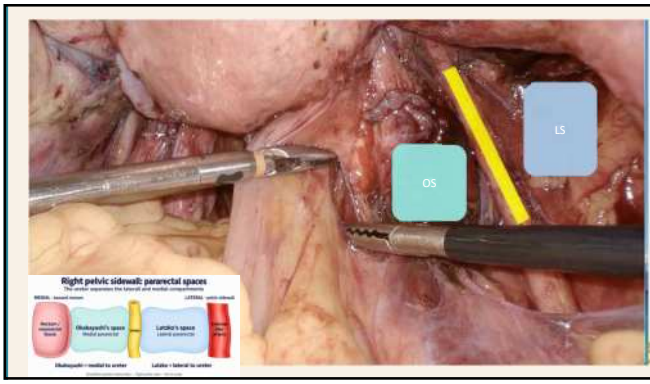
Latzko's vs Okabyashi's Space



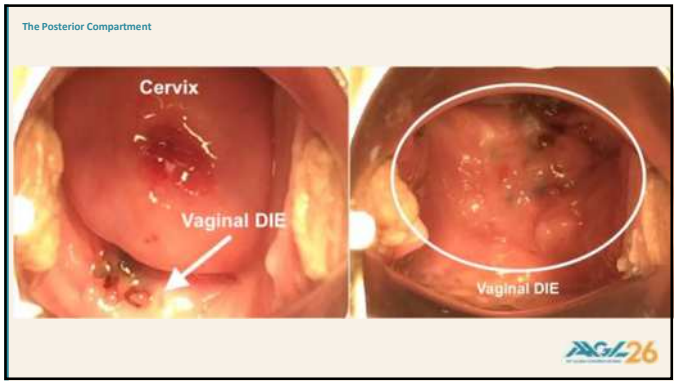
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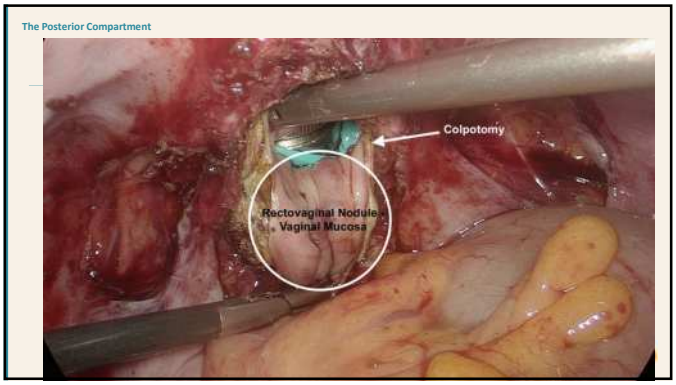
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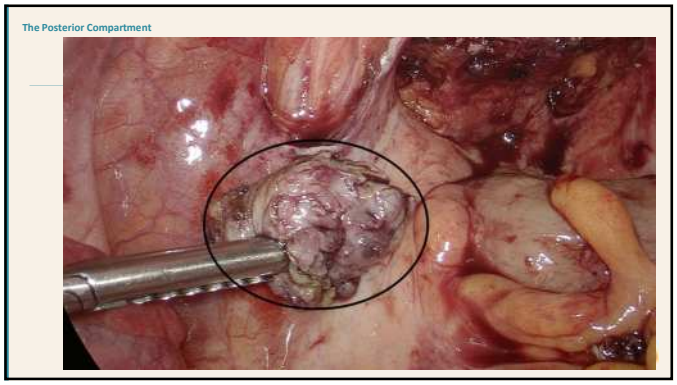
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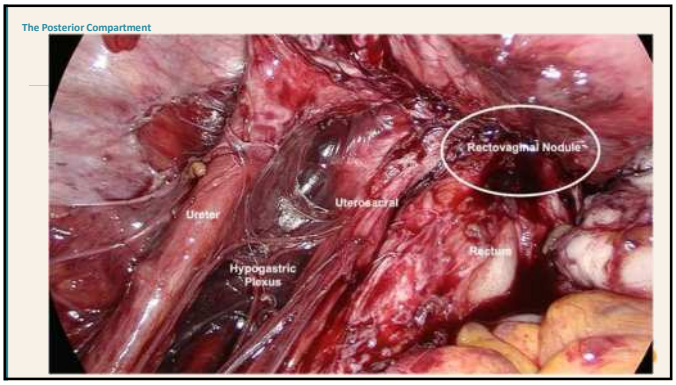
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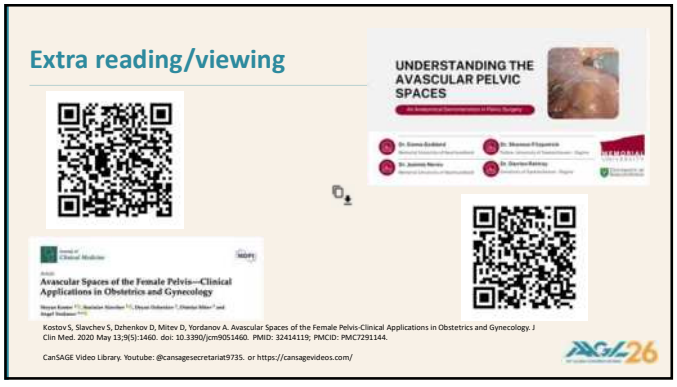
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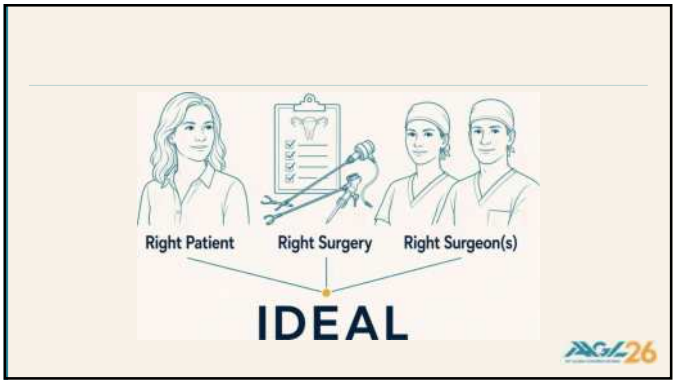
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Plan for Success

Preparation

Equipment

Surgery
Create a plan

Pelvic Reconstruction
From known to unknown

Final Checks and Balances

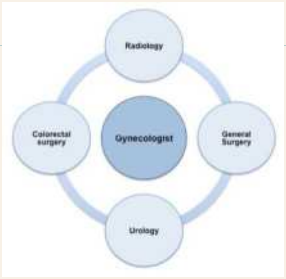
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Plan for Success

Patient Counseling is KEY

Risks and Complications

- Haemoperitoneum
- RV fistula
- anastomotic leak
- ureteral fistula/uroperitoneum
- bowel perforation
- pelvic abscess



Vercellini et al. Fertil Steril 2009

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Plan for Success

And there is more...

- need for temporary loop ileostomy
- post-operative bowel or ureteral anastomotic stenosis
- neurogenic bladder dysfunction
- constipation
- peripheral sensory disturbance

IMAGE OF THE MONTH

Ureteric Stricture Following Excision of Deep Endometriosis

Sukhbir S. Singh, MD,[1,2] Suzannah Wojcik, BHScH,[1] Michael W.H. Suen, MD,[2] Olga Bougie, MD, MPH[1]
[1]The Ottawa Hospital Research Institute, Ottawa, ON



27

Imaging is ESSENTIAL



Pelvic pain

Medical history and physical exam

TVUS

Superficial endometriosis*

Ovarian endometrioma

Deep endometriosis

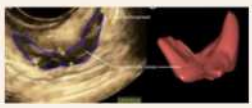


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Imaging is ESSENTIAL







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How do you plan?

- Do you have expert imaging?
- What information do you get?

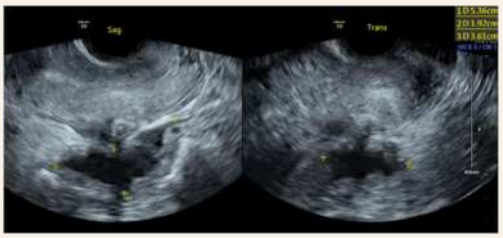


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This is what you need!!! 3 Dimensions

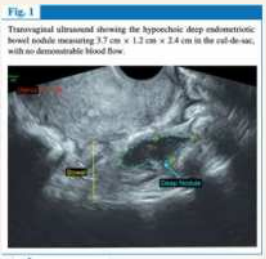


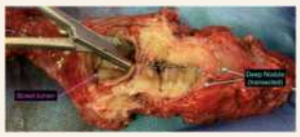
Size
5.36 x
1.92 x
3.61cm

Courtesy Dr H Alsalem

32

Ultrasound is essential



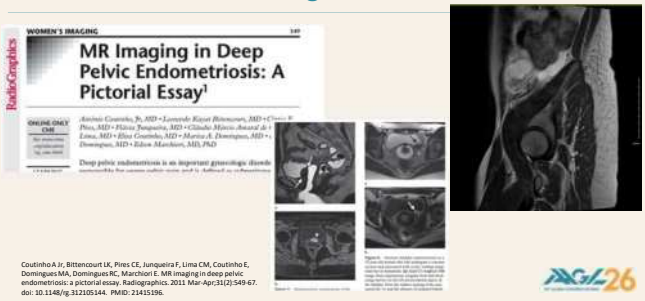


Segmental bowel resection
(Courtesy of S. Singh)

Kan, A. and Singh. JMIG 2022

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MRI is Excellent… in the right hands



MR Imaging in Deep Pelvic Endometriosis: A Pictorial Essay[1]

Coutinho A Jr, Bittencourt LK, Pires CE, Junqueira F, Lima CM, Coutinho E, Domingues MA, Domingues RC, Marchiori E. MR imaging in deep pelvic endometriosis: a pictorial essay. Radiographics. 2011 Mar-Apr;31(2):549-67. doi: 10.1148/rg.312105144. PMID: 21415196.

34

MRI is Excellent… in the right hands



Radiology

Radiology State-of-the-art Review:
Endometriosis Imaging Interpretation and Reporting

VanBuren W et al. Radiology State-of-the-art Review: Endometriosis Imaging Interpretation and Reporting. Radiology. 2024 Sep;312(3):e233482. doi: 10.1148/radiol.233482. PMID: 39287524.

35

Colonoscopy – Most often Negative unless…

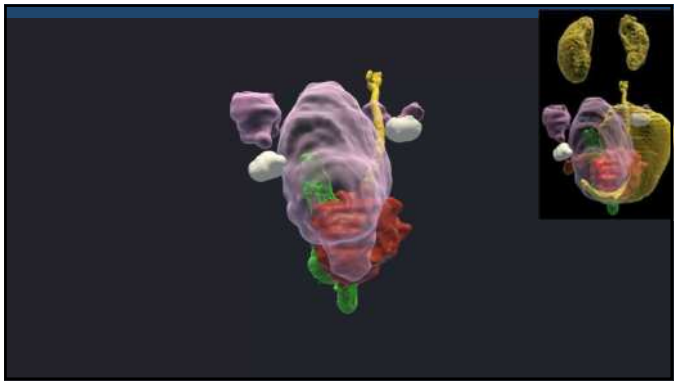


Invasion through to mucosa
(courtesy of Dr Singh)



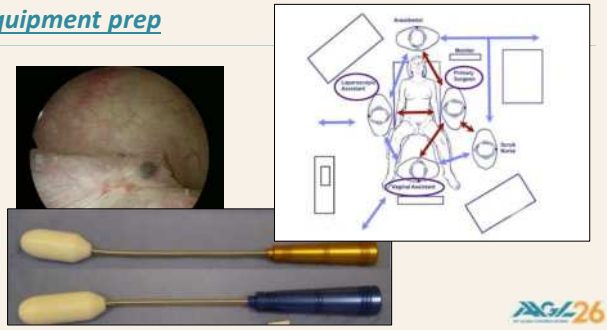
Nodule involving muscularis, no Invasion

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Equipment prep



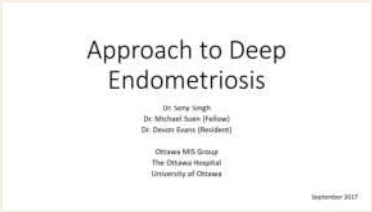
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Checks and Balances

- Before you Exit…
  - Bowel insufflation test
  - Cystoscopy
  - Suspension?
- Post Operative Counselling and Planning
  - What to expect
  - Post Op Hormone therapy
  - Fertility

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Stepwise approach

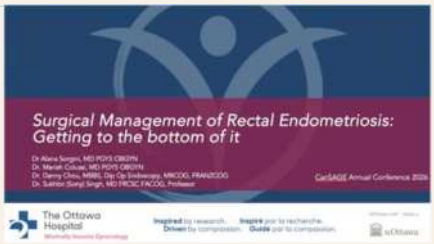


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Video Short Demo

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More resources



42

References

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- Abrão MS, Petraglia F, Falcone T, Keckstein J, Osuga Y, Chapron C. Deep endometriosis infiltrating the recto-sigmoid: critical factors to consider before management. Hum Reprod Update. 2015;21(3):329–39.
- Abrao MS, Podgaec S, Dias JA Jr, Averbach M, Silva LF, Marino de Carvalho F. Endometriosis lesions that compromise the rectum deeper than the inner muscularis layer have more than 40% of the circumference of the rectum affected by the disease. J Minim Invasive Gynecol. 2008; 15:280–285
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- Knabben L, Imboden S, Fellmann B, Nirgianakis K, Kuhn A, Mueller MD. Urinary tract endometriosis in patients with deep infiltrating endometriosis: prevalence, symptoms, management, and proposal for a new clinical classification. Fertil Steril. 2015;103(1):147–52.
- Seracchioli R, Mabrouk M, Manuzzi L, Guerrini M, Villa G, Montanari G, et al. Importance of Retroperitoneal Ureteric Evaluation in Cases of Deep Infiltrating Endometriosis. J Minim Invasive Gynecol. 2008;15(4):435–9.
- Singh SS, Suen MW. Surgery for endometriosis: beyond medical therapies. Fertil Steril. 2017;107(3):549-54.
- Vercellini et al. The effect of surgery for symptomatic endometriosis: the other side of the story. Human Repro Update Vol 15, No. 2, 2009.

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Hysterectomy in Severe Endometriosis: Integrating Excision for Optimal Surgical Outcomes

Cara R. King, DO, MS
Section Head, Minimally Invasive Gynecologic Surgery
Program Director, CBG Fellowship
Director of Innovation, Women's and Children's Institute

Cleveland Clinic

1

Disclosures

- Medtronic Consultant
- President of the Academy for Surgical Coaching

2

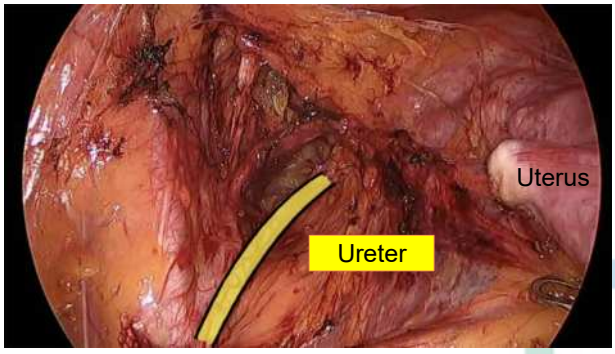
Objectives

- Demonstrate **surgical techniques** for integration of **endometriosis excision** into hysterectomy by employing structured approaches to:
  - Bladder dissection
  - Parametrial release
  - Ureterolysis and protection
  - Anatomic restoration in the frozen pelvis

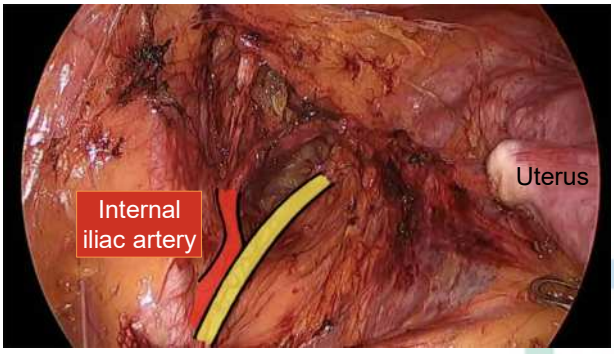
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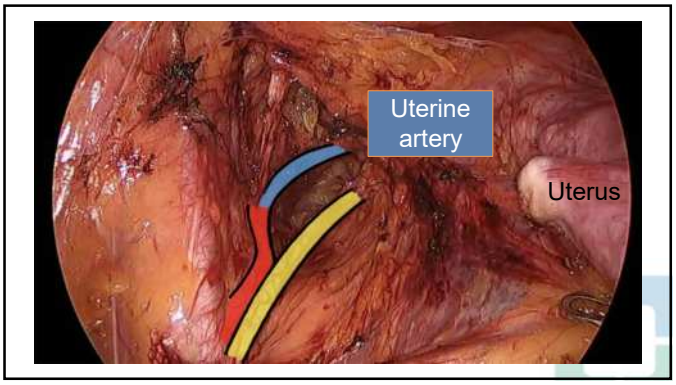
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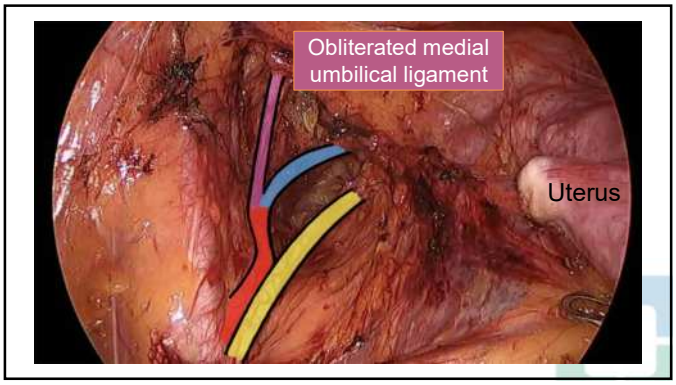
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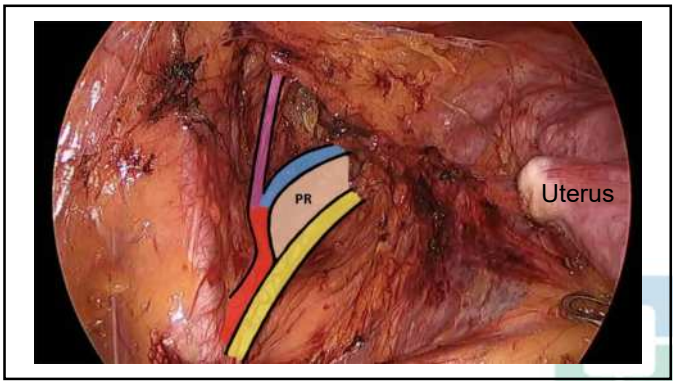
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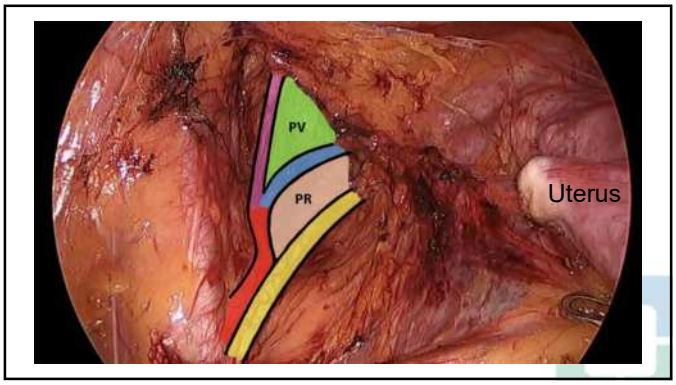
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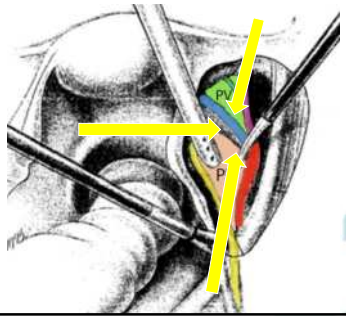
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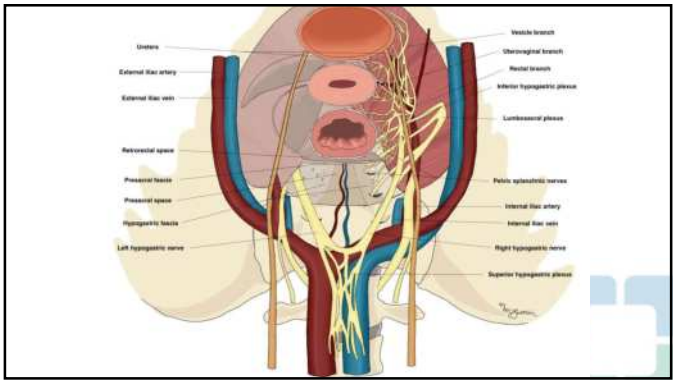
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Approaches to the uterine artery

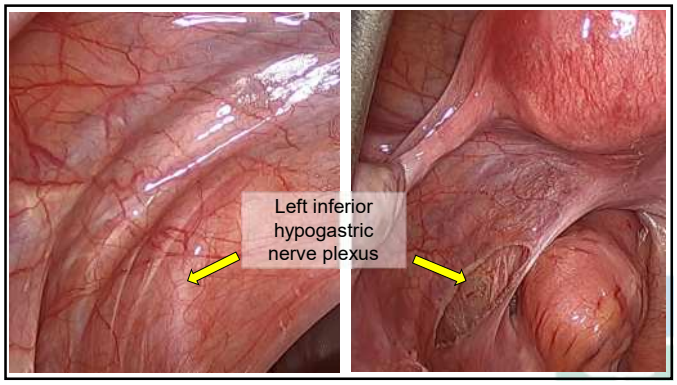
- Superior approach
- Medial approach
- Lateral approach



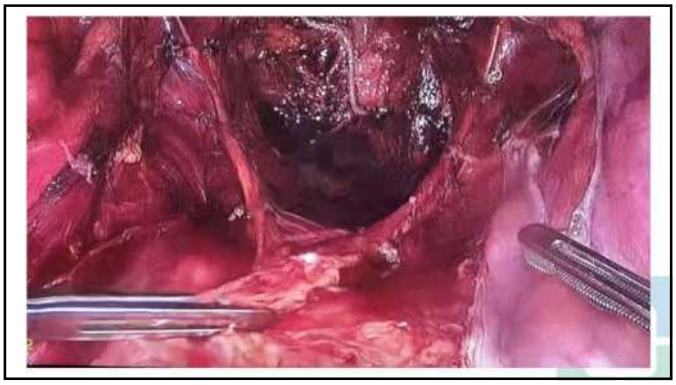
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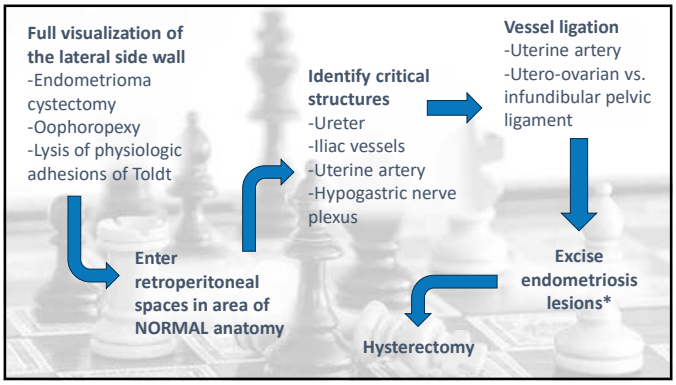
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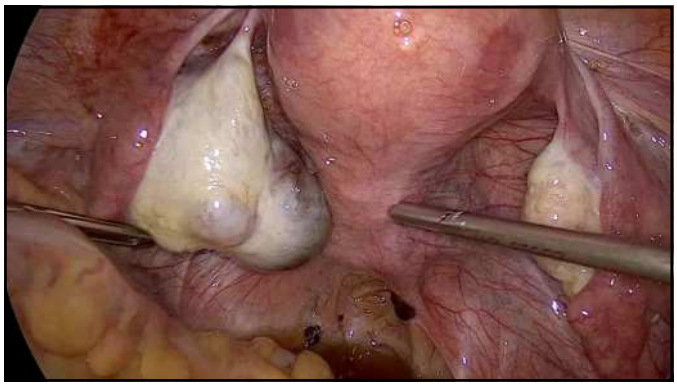
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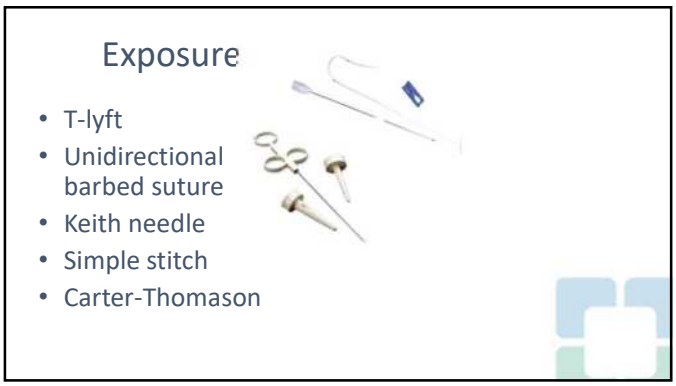
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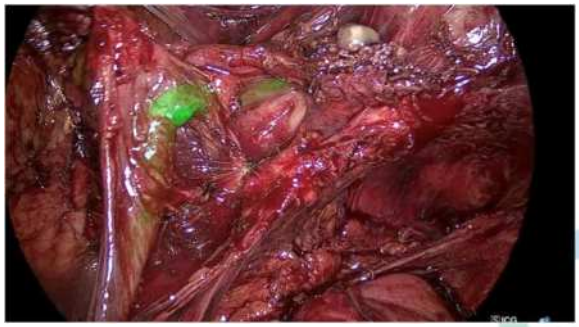


When the ovary is densely adhered to the side wall → enter the retroperitoneum in an area of **NORMAL** anatomy

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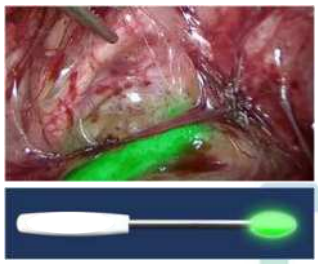
Retroperitoneal Entry & Window



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Optimize visualization of key structures

- Ureteral Stents
- Indocyanine Green (ICG)
- Fluorescence embedded surgical tools



21

Mod Rad ICG Ureterolysis

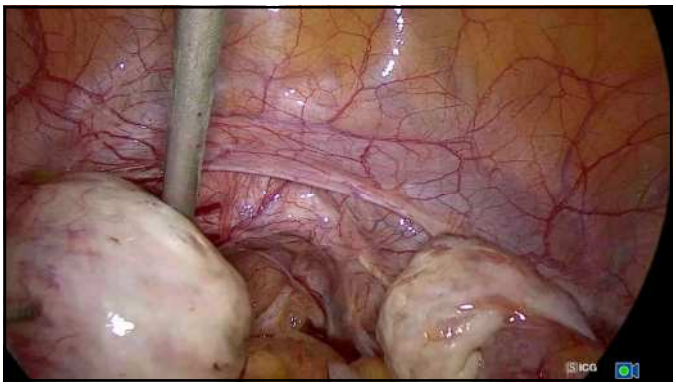


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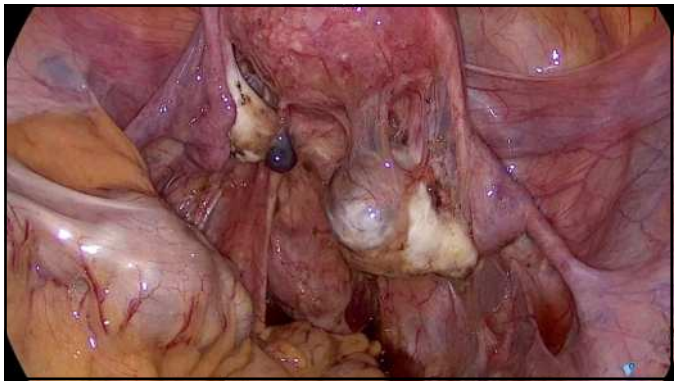
Anterior cul-de-sac CS scar endometrioma



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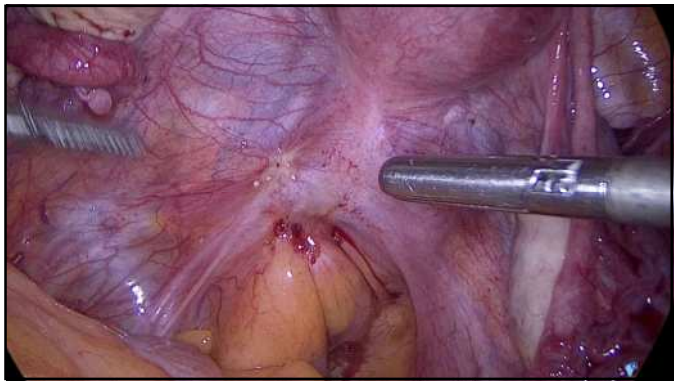
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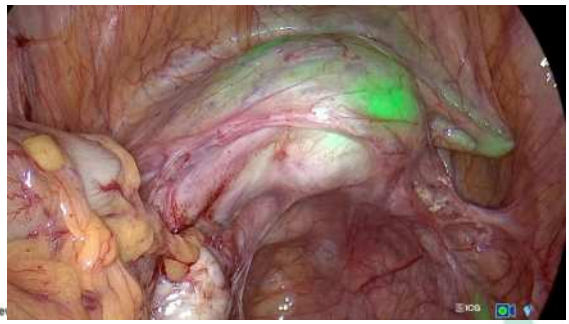


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Vaginal Cuff Deep Endo



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Key Takeaways

- Endometriosis should be fully excised when performing hysterectomy to optimize pain relief
- Utilization of avascular spaces and knowledge of retroperitoneal anatomy is critical for excision of deep endometriosis
- Surgical creativity is often required with complex disease

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Every life deserves world class care.

30

CULTURAL AND LINGUISTIC COMPETENCY & IMPLICIT BIAS

The California Medical Association (CMA) outlines standards for Cultural Linguistic Competency and Implicit Bias in CME. The goal of the standards is to support the role of accredited CME in advancing diversity, health equity, and inclusion in healthcare. These standards are relevant to ACCME-accredited, CMA-accredited, and jointly accredited providers located in California. AAGL is ACCME-accredited and headquartered in California.

CMA developed the standards in response to California legislation (Business and Professions (B&P) Code Section 2190.1), which directs CMA to draft a set of standards for the inclusion of cultural and linguistic competency (CLC) and implicit bias (IB) in accredited CME.

The standards are intended to support CME providers in meeting the expectations of the legislation. CME provider organizations physically located in California and accredited by CMA CME or ACCME, as well as jointly accredited providers whose target audience includes physicians, are expected to meet these expectations which began on January 1, 2022. AAGL has been proactively adopting processes that meet and often exceed the required expectations of the legislation.

CMA CME offers a variety of resources and tools to help providers meet the standards and successfully incorporate CLC & IB into their CME activities, including FAQ, definitions, a planning worksheet, and best practices. These resources are available on the CLC and IB standards page on the CMA website.

Important Definitions:

Cultural and Linguistic Competency (CLC) – The ability and readiness of health care providers and organizations to humbly and respectfully demonstrate, effectively communicate, and tailor delivery of care to patients with diverse values, beliefs, identities and behaviors, in order to meet social, cultural and linguistic needs as they relate to patient health.

Implicit Bias (IB) – The attitudes, stereotypes and feelings, either positive or negative, that affect our understanding, actions and decisions without conscious knowledge or control. Implicit bias is a universal phenomenon. When negative, implicit bias often contributes to unequal treatment and disparities in diagnosis, treatment decisions, levels of care and health care outcomes of people based on race, ethnicity, gender identity, sexual orientation, age, disability and other characteristics.

Diversity – Having many different forms, types or ideas; showing variety. Demographic diversity can mean a group composed of people of different genders, races/ethnicities, cultures, religions, physical abilities, sexual orientations or preferences, ages, etc.

Direct links to AB1195 (CLC), AB241 (IB), and the B&P Code 2190.1:

Bill Text – AB-1195 Continuing education: cultural and linguistic competency.
Bill Text – AB-241 Implicit bias: continuing education: requirements.
Business and Professions (B&P) Code Section 2190.1

CLC & IB Online Resources:

Diversity-Wheel-as-used-at-Johns-Hopkins-University-12.png (850×839) (researchgate.net)
Implicit Bias, Microaggressions, and Stereotypes Resources | NEA
Act, Communicating, Implicit Bias (racialequitytools.org)
https://www.contemporaryobgyn.net/view/overcoming-racism-and-unconscious-bias-in-ob-gyn
https://pubmed.ncbi.nlm.nih.gov/34016820/
https://hr.ucdavis.edu/departments/learning/certificate/implicit-bias
https://pmc.ncbi.nlm.nih.gov/articles/PMC7011228/