AAGL 26

55TH GLOBAL CONGRESS ON MIGS

BOSTON, MASSACHUSETTS
NOVEMBER 13-16, 2026

Syllabus

PG-26101

Pelvic Pain and Minimally Invasive Gynecologic Surgery: Diagnosis and Management – In Affiliation with the Polish Society of Minimally Invasive Gynecologists

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Table of Contents

Course Program: Course Description, Learning Objectives, Course Outline 3

Financial Disclosures 4

Complex and Obstructive Müllerian Anomalies: Surgical Challenges
A. Ludwin ..... -

Ovarian Endometriomas and Uterine Fibroids In Women Seeking Fertility: When and How to Operate?
P. Marianowski 5

Uterine Niche: Hysteroscopic, Laparoscopic and Robotic-Assisted Approaches
L. Zaborowska 8

Pain Management During Office Hysteroscopy
D. Jasińska-Stasiaczek 17

Patient-Centered Perioperative Pain Management in Hysterectomy
I. Gabriel 22

From Complexity to Precision: Robotic Repair of Urogenital Fistulas
R. Pilka 26

Deep Endometriosis: Mapping and Management
J. Jacko 33

Cultural and Linguistic Competency & Implicit Bias 39

PG-26101: Pelvic Pain and Minimally Invasive Gynecologic Surgery: Diagnosis and Management – In Affiliation with the Polish Society of Minimally Invasive Gynecologists

Chair: Artur Ludwin
Co-Chair: Michael Hibner
Faculty: Iwona Gabriel, Joanna Jacko, Artur Ludwin, Dominika Jasińska-Stasiaczek, Piotr Marianowski, Radovan Pilka, Łucja Zaborowska

Course Description

This course provides a comprehensive and practical overview of pelvic pain in gynecology, one of the most complex and challenging clinical problems in women's health. Participants will explore the multifactorial causes of acute and chronic pelvic pain, including gynecologic, urologic, gastrointestinal, musculoskeletal, and neuropathic conditions, with a special focus on endometriosis, pelvic floor dysfunction, and postoperative pain syndromes. The course will review current diagnostic tools, including clinical assessment, imaging modalities, minimally invasive techniques, and the role of multidisciplinary evaluation. Evidence-based medical, surgical, and interventional treatment options will be discussed, highlighting indications, outcomes, and limitations of each approach. Special attention will be given to clinical dilemmas, such as pain without clear pathology, recurrent or persistent pain after surgery, and balancing symptom relief with fertility preservation and quality of life. Through case-based discussions, participants will gain practical strategies to optimize diagnosis, personalize treatment plans, and improve patient- centered outcomes in women suffering from pelvic pain.

Learning Objectives: *At the end of this course, the participant will be able to:* 1) Recognize the diverse and multifactorial causes of pelvic pain in gynecology and apply appropriate diagnostic tools for accurate evaluation; 2) Select evidence-based medical and surgical treatment strategies and make informed decisions in complex or ambiguous clinical cases and 3) Support patient-centered care through multidisciplinary collaboration, balancing symptom relief, fertility considerations, and quality of life.

Course Outline

2:15 pm	Welcome, Introduction and Course Overview	M. Hibner
2:20 pm	Complex and Obstructive Müllerian Anomalies: Surgical Challenges	A. Ludwin
2:35 pm	Ovarian Endometriomas and Uterine Fibroids In Women Seeking Fertility: When and How to Operate?	P. Marianowski
2:50 pm	Uterine Niche: Hysteroscopic, Laparoscopic and Robotic-Assisted Approaches	L. Zaborowska
3:05 pm	Pain Management During Office Hysteroscopy	D. Jasińska-Stasiaczek
3:20 pm	Patient-Centered Perioperative Pain Management in Hysterectomy	I. Gabriel
3:35 pm	From Complexity to Precision: Robotic Repair of Urogenital Fistulas	R. Pilka
3:50 pm	Deep Endometriosis: Mapping and Management	J. Jacko
4:05 pm	Closing Remarks	A. Ludwin
4:15 pm	Adjourn	

ADA Statement: In accordance with the Americans with Disabilities Act (ADA), please contact CMEsupport@aagl.org should you require any special assistance.

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).

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COURSE CHAIR DISCLOSURE

Artur Ludwin, MD, PhD*

COURSE CO-CHAIR DISCLOSURE

Michael Hibner, MD, PhD*

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).

Iwona Gabriel, MD, PhD*
Joanna Jacko, MD*
Dominika Jasińska-Stasiaczek, MD
Artur Ludwin, MD, PhD*
Piotr Marianowski, MD, PhD*
Radovan Pilka, MD – Consultant: Intuitive Surgical
Lucja Zaborowska, MD*

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.

The presentation content for course faculty, Dr. Pilka, has been peer reviewed and found to be fair, balanced, and free from commercial bias.

AAGL CONGRESS • BOSTON

Ovarian Endometriomas and Uterine Fibroids in Women Seeking Fertility

When and How to Operate?

A fertility-first framework for complex decisions

Piotr Marianowski MD, PhD
I Clinic of Obstetrics and Gynecology, Medical University of Warsaw

Clinical decision-making • Oocyte cryopreservation • Organ-preserving surgery

1

01 • THE CLINICAL DILEMMA

The real question is not “Can we operate?”

It is: what should happen first to preserve the best realistic chance of a genetically related child?

DISEASE
Pain, mass effect, distorted anatomy, diagnostic uncertainty

BIOLOGY
Age, AMH/AFC, ovarian access, sperm availability, time

LIFE CONTEXT
Partner status, desired family size, finances, values and local law

Surgery may solve an anatomical problem while narrowing the reproductive window.

2

02 • DECISION FRAMEWORK

A five-step fertility-first sequence

1	**Define the goal**	Pregnancy now, future genetic parenthood, or symptom control?
2	**Map the risk**	Age + AMH/AFC + anatomy + symptoms + malignancy red flags
3	**Secure options**	Discuss oocyte/embryo cryopreservation before ovarian or uterine surgery
4	**Choose the least harmful route**	Observe, ART first, medical bridge, sclerotherapy, or surgery
5	**Set a timeline**	Agree on review date, fertility plan, surgical endpoint and contingencies

3

03 • OVARIAN ENDOMETRIOSIS

Endometrioma: size matters—but size is not the decision

- Endometriosis itself may be associated with reduced ovarian reserve; bilateral disease and repeat surgery are especially concerning.
- AMH estimates likely ovarian response to stimulation—not egg quality and not an individual's chance of spontaneous pregnancy.
- A large cyst can impair follicle access, cause pain, distort anatomy or raise diagnostic concern.
- Routine cystectomy before IVF solely to improve live birth is not recommended by ESHRE; consider surgery for pain, suspicious features or inaccessible follicles.
- Counsel explicitly that cystectomy can remove healthy cortex and cause thermal/vascular injury.

KEY MESSAGE
The operation does not restore lost ovarian reserve; postoperative AMH may be lower.

SIZE IS A MODIFIER
A 3–4 cm threshold alone should not dictate surgery. Consider laterality, symptoms, imaging, prior surgery and ART access.

Evidence: ESHRE Endometriosis Guideline (2022)

4

04 • PRESERVE OPTIONS EARLY

Oocyte cryopreservation: discuss before the ovary is at risk

For patients who may want a genetic child later—partnered or single—freezing oocytes preserves choice of future sperm source.

WHO TO DISCUSS WITH
- Bilateral / extensive endometriomas
- Low AMH or low AFC
- Repeat ovarian surgery likely
- Older reproductive age
- Delayed parenthood / no partner

WHAT TO EXPLAIN
- Age at freezing matters
- Low AMH may mean fewer oocytes per cycle
- More than one cycle may be needed
- Freezing is not a guarantee of live birth

PRACTICAL SEQUENCE
1. Reproductive endocrinology consult
2. AMH + AFC + individualized yield estimate
3. Stimulate/retrieve if safe and feasible
4. Then reassess surgery/ART

Do not promise that every patient will benefit; offer shared decision-making and realistic age-specific counselling.

5

05 • ALTERNATIVES

Endometrioma options beyond stripping cystectomy

CYSTECTOMY
Lower early recurrence in some comparisons; potential loss of ovarian cortex and AMH decline.

ABLATION / CO_2 LASER
May spare cortex when the cleavage plane is hazardous; recurrence and technique expertise matter.

US-GUIDED ETHANOL SCLEROTHERAPY
Minimally invasive option in selected cases, especially low reserve / ART context; recurrence, infection and selection limitations must be discussed.

Also consider: observation with imaging, ART without prior surgery, or deep endometriosis surgery at an expert centre when symptoms justify it.

Evidence note: a 2025 systematic review/meta-analysis of 28 studies (1,877 patients) reported smaller AMH change after ethanol sclerotherapy than cystectomy, but evidence is heterogeneous and patient selection is important.

Read: Ovarian reserve and IVF outcomes after ethanol ovarian sclerotherapy (2025)

6

06 • VIDEO / TECHNIQUE

Surgical video: large endometrioma—what to watch for

VIDEO 1 • LAPAROSCOPIC CYSTECTOMY

Watch for: access and adhesiolysis, decompression when appropriate, identifying the cleavage plane, minimizing thermal damage, selective hemostasis and ovarian reconstruction.

VIDEO 2 • OVARIAN-SPARING TECHNIQUE

Use an expert educational video to compare stripping with ablation / tissue-sparing approaches. Avoid routine surgery before ART when no clear indication exists.

Presentation note: embed a short, permission-cleared 20–40 second clip; check publisher terms and conference AV rules.

7

07 • UTERINE FIBROIDS

Fibroids: location and cavity distortion matter most

SUBMUCOSAL / CAVITY-DISTORTING

Most directly relevant to implantation; hysteroscopic myomectomy may be appropriate when technically feasible.

INTRAMURAL

Impact depends on size, number, cavity relationship, symptoms and ART context. Benefit of removing non-cavity-distorting lesions is uncertain.

SUBSEROSAL

Usually less directly related to fertility unless very large, symptomatic or distorting pelvic anatomy.

A 20-cm "hybrid" fibroid is not just a fertility question: assess bleeding/anemia, pressure, anatomy, surgical route, malignancy risk and possibility of hysterectomy.

Pre-op MRI / expert ultrasound + CBC/ferritin + reproductive endocrinology + high-volume myomectomy surgeon = multidisciplinary plan.

8

08 • PREOPERATIVE OPTIMIZATION

Can a 3-month medical bridge make myomectomy safer?

- GnRH agonists (e.g., leuprolide, triptorelin, goserelin) can temporarily suppress ovarian hormones and reduce fibroid volume / bleeding in selected patients.
- Oral GnRH antagonists with add-back therapy include relugolix–estradiol–norethisterone acetate and linzagolix where licensed and appropriate.
- Use depends on local approval, contraindications, bone-health considerations, anemia, fibroid characteristics and surgical objective.
- These drugs are a bridge—not a fertility treatment. They do not reliably eliminate fibroids and symptoms may recur after stopping.
- Reassess size, hemoglobin and operative plan; avoid allowing a medical bridge to create harmful delay in an older patient with low reserve.

POTENTIAL BENEFITS

Less bleeding / anemia, possible volume reduction, and improved operative planning.

LIMITS

Response varies; drug choice and duration should be individualized. A 3-month course is not suitable for every patient.

NICE: fibroid treatment recommendations

9

09 • THE TIME COST

After myomectomy: healing time competes with ovarian age

Myometrial healing is not a fixed calendar number. The plan depends on how the uterus was opened and repaired.

WHAT DRIVES THE PLAN

Depth and number of incisions; cavity entry; closure layers; electrosurgery; fibroid burden; surgeon's assessment.

WHAT TO SAY ABOUT 8 MONTHS

An 8-month delay may be chosen in an individual case, but evidence does not establish one universal minimum after myomectomy.

THE BIOLOGICAL CLOCK

At 40+, especially with low AMH/AFC, a prolonged delay may reduce options. Consider oocyte/embryo banking before surgery when feasible.

Evidence: systematic review found insufficient data to recommend a universal minimum interval between myomectomy and conception.

Marguerite et al. Reproductive BioMedicine Online (2021)

10

10 • OPERATIVE OPTIONS

Myomectomy: choose route by anatomy, not ambition

HYSTEROSCOPIC

For submucosal fibroids (FIGO 0–2, selected type 3). Limits: size, intramural extension, fluid deficit and staged procedures.

LAPAROSCOPIC / ROBOTIC

Selected intramural/subserosal lesions; requires secure multilayer closure and appropriate extraction strategy.

OPEN / MINI-LAPAROTOMY

May be appropriate for very large or numerous fibroids when exposure, reconstruction or extraction makes minimally invasive surgery unsuitable.

Use publisher-hosted stills or a permission-cleared clip; source images and video remain subject to copyright.

11

11 • CASE DISCUSSION

Case: 42-year-old single woman, AMH 0.6 ng/mL, 20-cm hybrid fibroid

The wrong first move may be to schedule myomectomy before asking whether her oocytes can be banked.

STEP 1 • THIS WEEK

Expert imaging + CBC/ferritin + symptoms / red flags + ovarian reserve assessment + reproductive endocrinology consult.

STEP 2 • OPTIONS

If safe and technically feasible, discuss urgent oocyte cryopreservation before surgery. Low AMH predicts likely low yield, not zero chance.

STEP 3 • FIBROID PLAN

Consider 3-month medical shrinkage only if it does not create unacceptable delay; plan route and contingency for hemorrhage / hysterectomy.

If oocyte retrieval is not feasible or unsafe, document why and agree on a transparent pathway: surgery now, alternative family-building, or second opinion.

12

12 • INDIVIDUALIZED COUNSELLING

Partner status changes the logistics—not the value of fertility

PATIENT WITH A PARTNER

Discuss oocyte or embryo cryopreservation according to patient preference, relationship stability, legal context and control over future use. Do not assume embryo freezing is preferred.

SINGLE PATIENT

Oocyte cryopreservation preserves future choice of sperm source and autonomy over disposition. Review jurisdiction-specific access to ART and storage rules.

If hysterectomy becomes necessary, stored oocytes/embryos may preserve genetic parenthood—but not the ability to carry a pregnancy.

Gestational surrogacy is lawful only in some jurisdictions and under varying eligibility rules. Uterus transplantation is a highly specialized, uncommon option with substantial risks and limited availability.

13

13 • TAKE-HOME ALGORITHM

When to operate: a practical decision algorithm

OPERATE / URGENT WORK-UP

Suspicious imaging, acute complication, severe symptoms, organ compromise, or clear anatomical indication.

PRESERVE FIRST

Low reserve, older age, bilateral / recurrent endometrioma, planned high-risk ovarian surgery, or possible hysterectomy.

DEFER / ALTERNATIVE

No clear fertility benefit from surgery, stable benign lesion, ART access adequate, or surgery risks outweigh likely benefit.

Before consent, answer: What is the indication? What is the fertility cost of delay? What can be banked first? What is the contingency if the uterus/ovary cannot be preserved?

14

14 • CONCLUSIONS

Five messages to leave with the audience

- Fertility preservation should be discussed before potentially damaging ovarian surgery—and before complex myomectomy when hysterectomy is a realistic contingency.
- AMH is a response marker, not a fertility verdict. Age at oocyte freezing is critical.
- Do not remove an endometrioma before ART routinely just to improve live birth; operate for a clear indication.
- Fibroid location, cavity distortion, symptoms and surgical anatomy matter more than diameter alone.
- Shared decision-making must include single patients, partner status, future sperm choice, surrogacy law and the rare option of uterine transplantation.

Thank you • Questions

15

THANK YOU • QUESTIONS & DISCUSSION

See you in Warsaw in June 2027!

22nd International AAGL Congress of Minimally Invasive Gynecological Surgery

16–19 June 2027 • Warsaw, Poland

16

Uterine Niche: Hysteroscopic, Laparoscopic And Robotic-Assisted Approaches

Lucja Zaborowska, MD · Medical University of Warsaw

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

I have no financial relationships to disclose.

2

Objectives

- Define and diagnose the cesarean scar defect (niche, isthmocele).
- Compare and analyze hysteroscopic, laparoscopic and robotic approaches.
- Demonstrate the treatment techniques

3

The first cesarean section?



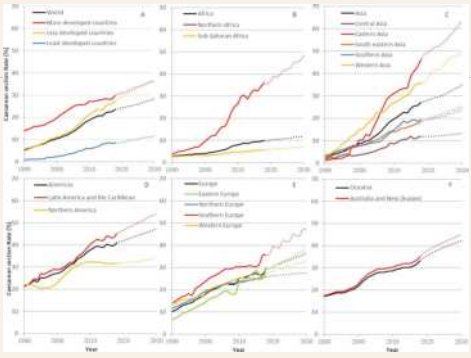
Apollo and the delivery of Asclepios from the deceased Koronis

1337 Queen of Bohemia Beatrice of Bourbon

1580 Swiss veterinarian Jacob Nufer

<1878 Indigenous people in the Great Lakes region of Africa

4



Betran, 2021

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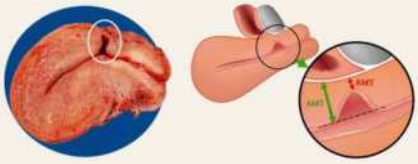
Cesarean niche - definition and measurements

Defined as an indentation at the site of the scar measuring at least **2 mm.**

Key measurements:

Transverse plane:
- - Width

Sagittal plane:
- Length
- Depth
- Residual myometrial thickness (RMT)
- Adjacent myometrial thickness



Jordans et al., 2018

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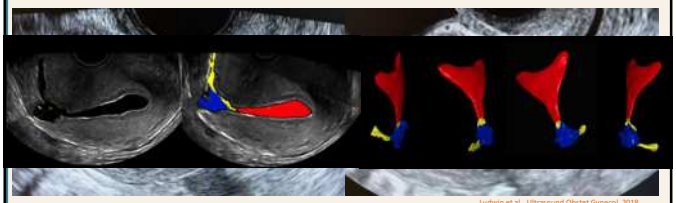
Cesarean scar defect – niche - isthmocele

- Increasingly described
  - **61% after the 1st cesarean section**
  - 100% undergoing at least three cesarean sections
- Wide incidence
  - 24 – 70% by TVUS
  - 56 – 84% by SIS



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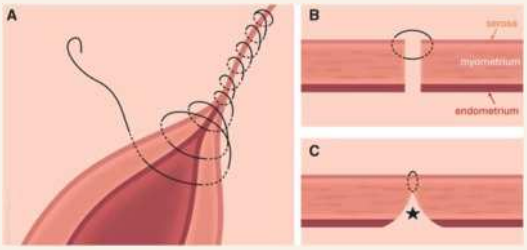
Diagnostic difficulties



Ludwin et al., Ultrasound Obstet Gynecol. 2018

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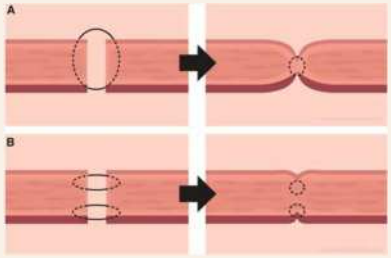
1st hypothesis: incomplete approximation of the myometrium



Bujold and Romero, 2026

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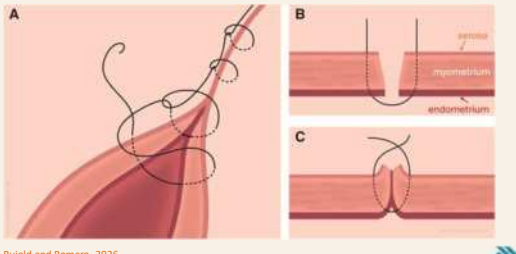
2nd hypothesis : tissue strangulation is increased in single-layer compared to double-layer



Bujold and Romero, 2026

10

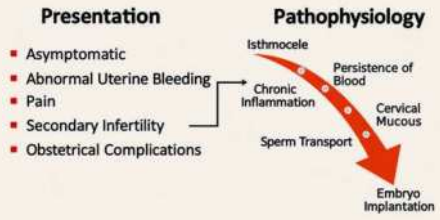
3rd hypothesis : inclusion of endometrial cells with locked single-layer, including the entire uterine wal



Bujold and Romero, 2026

11

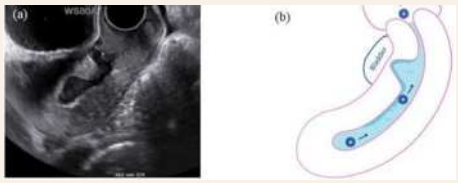
Cesarean scar defect



12

Secondary infertility - IVF

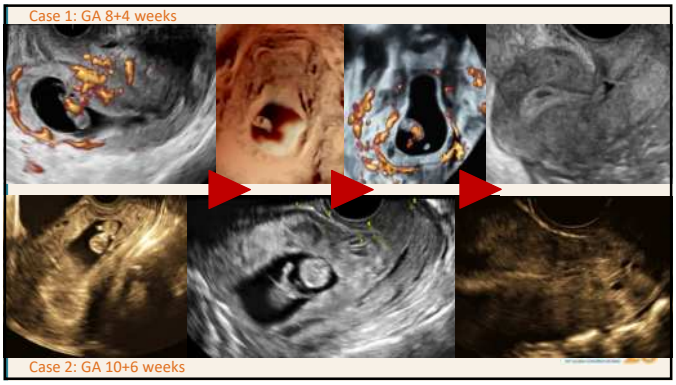
- Systematic review and meta-analysis of 10,000 embryo transfers
- Lower live birth rates in women with a caesarean scar niche compared with women without a niche
- Negative impact of intracavitary fluid on live birth rates



Vitagliano et al., 2023

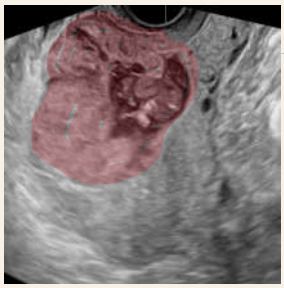
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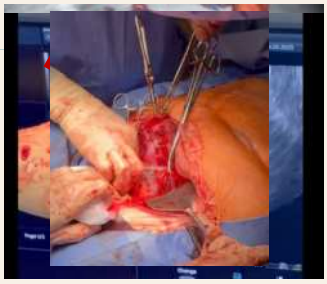
Case 1: GA 8+4 weeks



Case 2: GA 10+6 weeks

14

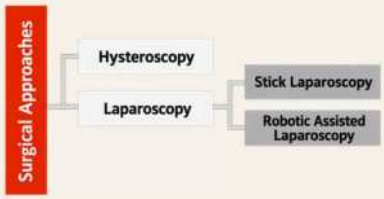




Case 3: GA 12+0 weeks

15

How can we help?



Florio P et al., 2011

16

When to treat?



From hysteroscopy to laparoendoscopic surgery: what is the best surgical approach for symptomatic isthmocele? A systematic review and meta-analysis

- Improvement in bleeding symptoms in over **80%** of patients.
- No evidence to suport surgical treatment to improve fertility or reduce the risk of obstetric complications in women with an asymptomatic isthmocele.

17

How to treat?



From hysteroscopy to laparoendoscopic surgery: what is the best surgical approach for symptomatic isthmocele? A systematic review and meta-analysis

- Hysteroscopy
  - The safest and most effective strategy in patients with adequate RMT
- Laparoscopy
  - **RMT (< 2.5 mm)** and
  - when hysteroscopic treatment is inconclusive.

18

How to treat? HSC vs LPS

Metaanalysis of 798 patients, 2026

HSC
- shorter operative time,
- shorter length of stay,
- less blood loss,
- less costs,
- less complications.

LPS
- better improvement in RMT

Both techniques did not differ in post-operative symptoms, adverse events, or pregnancy-related outcomes

Aldiab et al., 2026

Metaanalysis of 797 patients, 2025

HSC
- shorter operative time,
- shorter length of stay,
- less blood loss,
- less costs,
- less complications.

LPS
- better dysmenorrhea improvement
- higher pregnancy rates

Ramezani et al., 2025

19

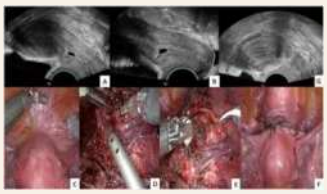
How to treat? LPS vs robotic

Retrospective study of 21 robotic, and 7 laparoscopic niche repair surgeries.

Inclusion: presence of niche(?)

Both groups reported improvement in symptoms.

The difference between niche anatomy (e.g. RMT) was significant only for the **robotic group**.

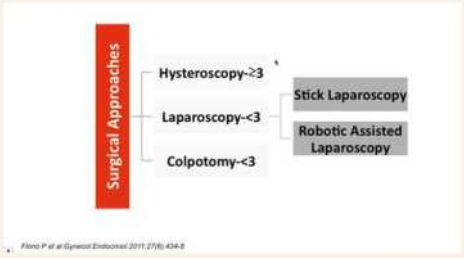


Schröder, et al., 2026

1 case of scar dehiscence, 1 case of plancenta accreta in the **robotic group.**

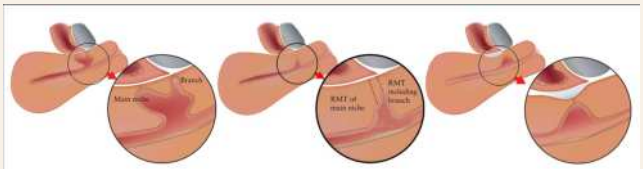
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The rule of „3”



21

…but can we accurately measure the RMT?

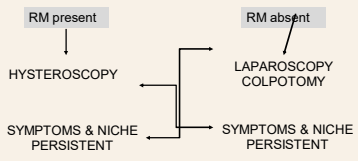


(c) Residual myometrial thickness (RMT). Thinnest point of RMT should be measured, regardless of direction (measured perpendicular to serosa but not necessarily to uterine cavity), both from main niche and, if there are any branches, from branch with thinnest RMT. Fibrosis is not included in RMT measurement.

Jordans et al., 2018

22

The „0/”1 rule



23

Hysteroscopy



24

4 steps technique in hysteroscopy

1. Identification of the anatomy
2. Resection of the cephalad edge
3. Resection of the caudal edge
4. Coagulation of the isthmocele

25

Step 1: Identify the anatomy



Sanders et al., 2018

26

Step 2: Resect the cephalad edge



Sanders et al., 2018

27

Step 3: Resect the caudal edge



Sanders et al., 2018

28

Step 4: Coagulate the isthmocele



Sanders et al., 2018

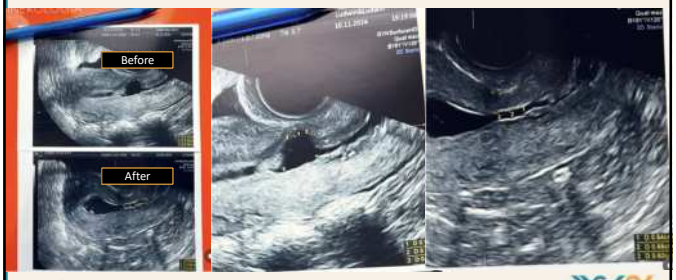
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A. Ludwin

30

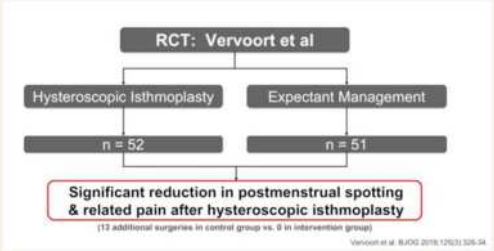
Anatomical outcomes



A. Ludwin

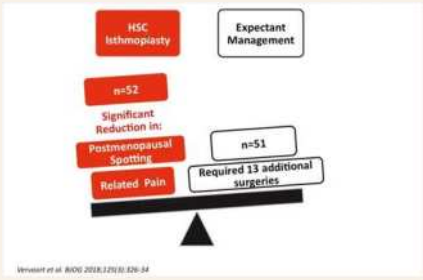
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Functional outcomes: postmenstrual spotting



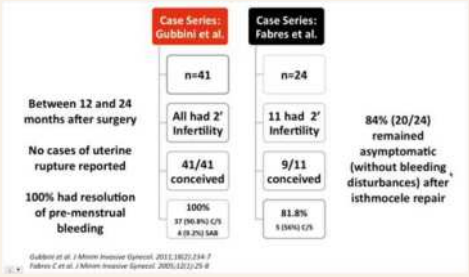
32

Functional outcomes: postmenstrual spotting



33

Functional outcomes: secondary infertility



34

Laparoscopy

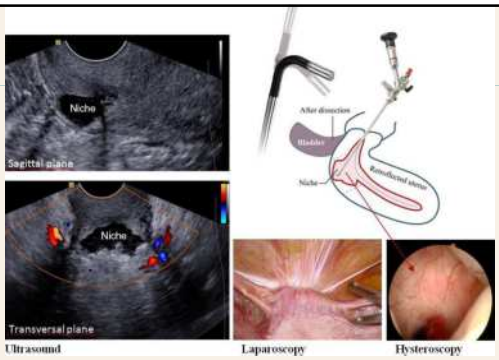


35

4 steps hysterolaparoscopic technique

1. Preparation – anatomy reconstruction
2. Hysteroscopic visualisation of the niche
3. Resection of the caesarean scar niche
4. Multilayer uterine suturing.

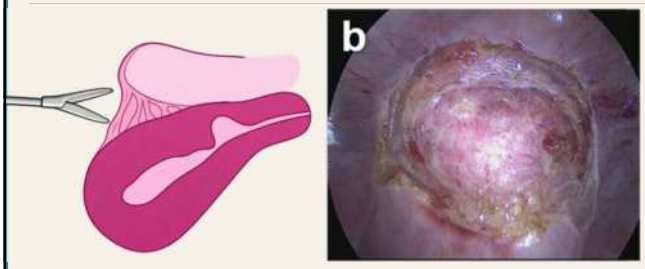
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Vervoort et al., 2017

37

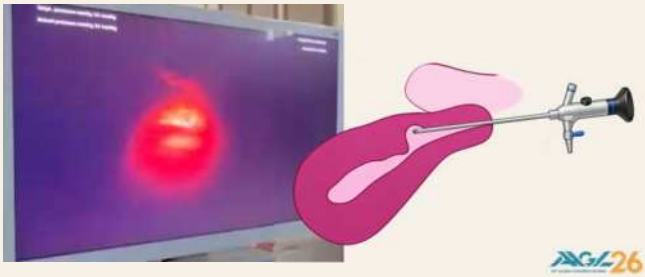
1st step: anatomy restoration



Zhang et al., 2021

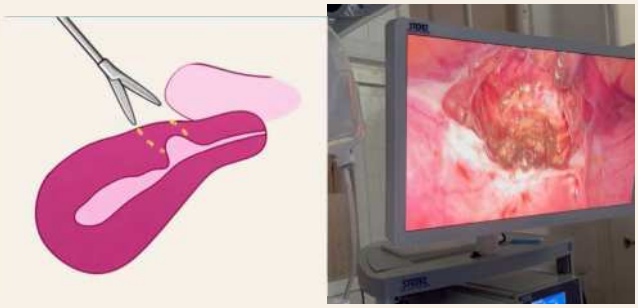
38

2nd step: niche visualisation



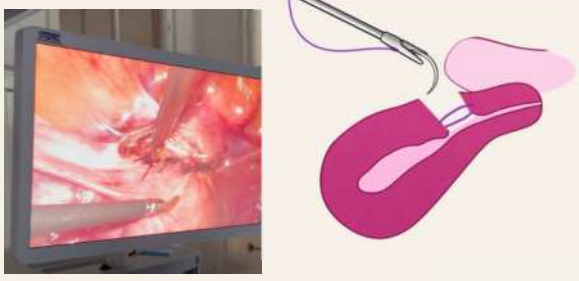
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3rd step: niche resection



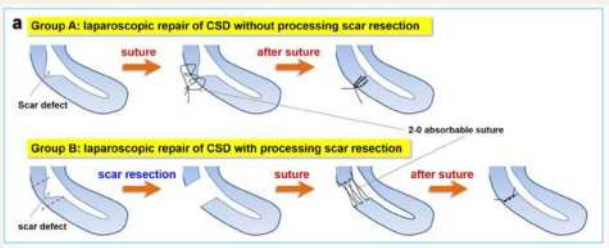
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4th step: Approximation of healthy miometrial edges, uterine suturing



41

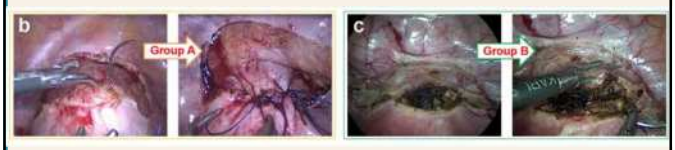
To resect, or not to resect?



Zhang et al., 2021

42

To resect, or not to resect?



Retrospective study of 76 women, RMT<3 mm

RMT increased in all women, with **no difference** between scar resection and scar thickening methods

Zhang et al., 2021

43

Functional and anatomical outcomes

Prospective cohort study (n=101)

- RMT <3 mm
- Symptoms and/or infertility

- Median RMT 1.2 ->5.3 mm
- 79.2% of symptoms improvement
- 83.3% of patient satisfaction

Vervoort et al., 2017

Prospective cohort study (n=133)

- RMT <3 mm
- Symptoms and/or infertility

- Median RMT 1.0 ->5.7 mm
- Ongoing pregnacy in 62.4%
- 8.3% treatment failure – RMT<3 mm

Vissers et al., 2023

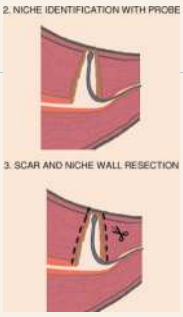
44

Outcomes

Prospective cohort study of 333 women

- RMT <2.5 mm (SIS)
- Presence of symptoms, desire to conceive

- Significantly reduced symptoms
- Failure of treatment: 8.2%
- At least one pregnany post-surgery: 93%



Abacjew-Chmylko et al., 2025

45

Robotic-assisted approaches



46

Robotic-assisted niche repair

- Multi–port or single port approach

+/- Hysteroscopic guidance
+/- Near-infrared fluorescence

- Precise intracorporeal multilayer suturing.



47

Robotic-assisted technique



Nii et al., 2026

48

Functional and anatomical outcomes

- Retrospective study, 51 patients
- Symptomatic patients with RMT<2 mm
- Significant RMT increase
- Symptoms resolution in 71.4%
- Pregnancy rate 72%

Seaman et al., 2025

- Retrospective study, 28 patients
- Significant RMT increase
- Symptoms resolution in 66.7-100%
- Pregnancy rate 100%

Almasarweh et al., 2026

49

Is everything clear?

- **Prevention of obstetric complications is currently not an indication for surgery.**
  However, should we wait until uterine rupture occurs when the residual myometrial thickness (RMT) is 1 mm or even 0 mm?
- **Uncomplicated pregnancies following surgical correction have been reported.**
  However, does surgical correction actually reduce the risk of uterine rupture?

  What is the incidence of uterine rupture following hysteroscopic, laparoscopic and robotic repair?
- **How often does niche repair fail to improve the residual myometrial thickness?**
  Different definitions
  There is currently no evidence supporting given surgical approach
- **What is the optimal interval between surgical correction and conception?**
  Obstetric safety following surgical correction:
  Mode of delivery.
  Optimal timing of delivery

50

Conclusions



- Hysteroscopic correction offers a less invasive approach with a more favourable safety profile.
- Laparoscopic repair is preferred in patients with thin residual myometrium (RMT).
- Robot-assisted surgery may facilitate precise dissection and intracorporeal suturing; however, comparative evidence remains limited.
- The choice of surgical approach should be **individualized** based on niche anatomy (RMT!), the patient's reproductive plans and the surgeon's experience.

51

Acknowledgments

- Prof. Artur Ludwin, MD, PhD
  Head of the 1st Department of Obstetrics and Gynecology,
  Medical University of Warsaw
- Assoc. Prof. Inga Ludwin, MD, PhD
  Ludwin&Ludwin Gynecology, Kraków

52

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53

Pain Management During Office Hysteroscopy

Dominika Jasińska-Stasiaczek, MD
Mother and Child Health Center in Zabrze

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

I have no financial relationships to disclose.



Mother and Child Health Center in Zabrze

2

Objectives

- **Assess** patient and procedure-related risk factors for clinically relevant pain and reduced procedural tolerance.
- **Select** appropriate hysteroscopic instrumentation and **apply** procedural techniques that minimize pain.
- **Identify** patients who are suitable candidates for advanced office hysteroscopy.
- **Implement** an individualized, multimodal pain-management strategy incorporating paracervical and intrauterine local anaesthesia, patient-centred communication, and measures that improve comfort, safety, and satisfaction.

3

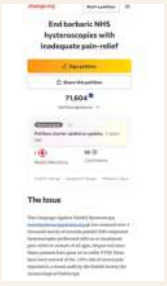
Office hysteroscopy is a painful procedure

- **30–68%** of patients report pain during office hysteroscopy, with reported pain scores ranging from **3 to 10 on the VAS,** in most papers the **mean pain is 4-5 VAS**
- **5–15%** of patients experience severe pain, defined as **VAS ≥ 7**.
- **Pain** is the most common reason for procedure discontinuation or **failed office hysteroscopy.**



4

Office hysteroscopy is a painful procedure



Campaign Against Painful Hysteroscopy

- **2014 – The movement begins:** women reporting severe and traumatic pain during NHS outpatient hysteroscopy form the patient-led **Campaign Against Painful Hysteroscopy**, supported in Parliament by MP Lyn Brown.

https://www.change.org/p/secretary-of-state-for-health-end-barbaric-nhs-hysteroscopies-with-inadequate-pain-relief

5

Office hysteroscopy is a painful procedure



Campaign Against Painful Hysteroscopy

- **2018–2023 – Patient voices gain national attention:** a petition demanding informed choice and adequate anaesthesia attracts tens of thousands of signatures; thousands of painful experiences are submitted to Parliament.
- https://www.hysteroscopyaction.org.uk/

6

Office hysteroscopy is a painful procedure



Campaign Against Painful Hysteroscopy

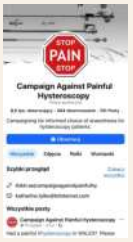
- **2023–2025 – RCOG strengthens its guidance:** severe pain is explicitly recognised; recommendations emphasise advance written information, informed consent, individualised pain relief, choice of setting or anaesthesia, and the patient's right to stop the procedure.

7

Office hysteroscopy is a painful procedure

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- **2023–2025 – RCOG strengthens its guidance:** severe pain is explicitly recognised; recommendations emphasise advance written information, informed consent, individualised pain relief, choice of setting or anaesthesia, and the patient's right to stop the procedure.
- **Today – Advocacy continues: Hysteroscopy Action** campaigns for consistent implementation of these standards and equitable access to effective pain relief, sedation and anaesthesia.



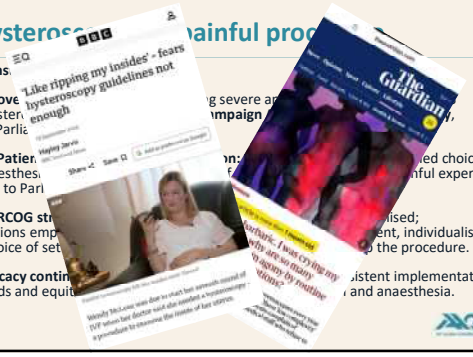


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Office hysteros… …ainful proc…

Campaign Agains…

- **2014 – The move…** …g severe a… …mpaign …, outpatient hyster… supported in Parli…
- **2018–2023 – Patien…** …ed choice and adequate anaesthes… …nful experiences are submitted to Parl…
- **2023–2025 – RCOG str…** …ised; recommendations emp… …ent, individualised pain relief, choice of set… …o the procedure.
- **Today – Advocacy contin…** …istent implementation of these standards and equit… …and anaesthesia.



9

Office hysteroscopy is a painful procedure

Campaign Against …

- **2014 – The moven…** …g NHS outpatient hysteros… …oscopy
- **20…** …ce and ac… …riences ar…
- **20…** …sed re… …pain relief, choice of setti… …to stop the procedure.
- **Today – Advocacy continue…** …r consistent implementation of these standards and equitab… …dation and anaesthesia.

Outpatient hysteroscopy should be performed with the patient, NOT merely on the patient.

10

…Breakthroughs That Changed Hysteroscopy…

- **1996–1997 | Bettocchi:** 5-mm hysteroscope and vaginoscopic "no-touch" approach → less pain and the beginning of **office see-and-treat hysteroscopy**
- **2005 | Emanuel:** first hysteroscopic tissue-removal system → faster, simpler mechanical removal of polyps and fibroids, but „too big" for office settings
- **2010–2017 | Gubbini and mini-resectoscopes:** continuous-flow **16–15 Fr systems** enabled increasingly advanced operative procedures in the office setting
- **2013–2014 | Campo: 2.9-mm Trophyscope**, expandable to a 4.4-mm operative system.
- **2024 Bigatti – 15FR Mini Shaver** – 5mm
- Today, mini tissue-removal devices measure approximately **5–7.5 mm**. And the smallest miniresectoscopes are **4.3 – 5mm**
- **Flexible hysteroscopes**



11

Progress Came With a Responsibility

Miniaturisation moved increasingly advanced intrauterine surgery from the operating theatre to the office

- Greater accessibility
- More advanced office procedures
- Faster recovery

But technical capability sometimes outpaced

- patient selection,
- preparation
- pain management

We moved hysteroscopy out of the operating theatre.
Now we must bring adequate pain management into the office.

12

Risk factors

- Nulliparous
- Postmenopausal state
- Cervical stenosis
- Endometriosis, adenomyosis
- Chronic pelvic pain syndrome
- Younger age
- Anxiety, depression, and other mental health conditions
- More advanced procedures may be associated with lower procedural tolerance

13

Anaesthesia

- **NSAIDs 1 hour before the procedure -** recommended by RCOG; limited effect on procedural pain, but useful for preventing or treating post-procedural cramping.
- **Paracervical block - HysteroBlock**
- **Intrauterine local anaesthesia**
- **Nitrous oxide–oxygen inhalation analgesia** ("laughing gas")
- **Conscious sedation** - selected patients; appropriate monitoring required
- **General anaesthesia** - an alternative pathway when office treatment is unsuitable or not tolerated

14

Anaesthesia

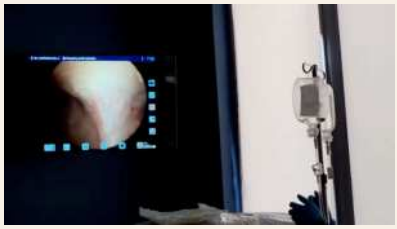


HysteroBlock
Paracervical Local Anaesthesia

- A local anaesthetic technique involving injections around the cervix to block pain transmission from the cervix and uterus during office hysteroscopy. It can improve patient comfort and facilitate more advanced procedures while the patient remains awake and responsive.

15

Anaesthesia



Intrauterine
local anaesthesia

We use a dedicated 5 Fr needle for intrauterine injections. The needle is introduced through the working channel of a diagnostic hysteroscope, and a 2% lidocaine solution is injected locally into the surgical site—for example, into the uterine septum, the uterine wall, or around a myoma.

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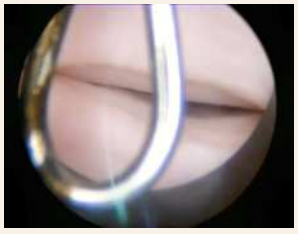
Cervical preparation

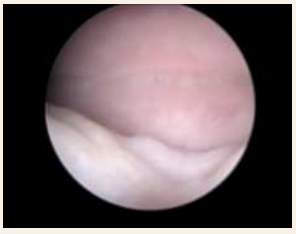
- **Misoprostol: not recommended routinely**
- May facilitate cervical entry in selected patients with anticipated stenosis or need for dilatation
- Benefit is inconsistent and patient-dependent
- Requires administration several hours before the procedure
- May cause **cramping, bleeding and gastrointestinal adverse effects**

Take-home message
Individualise analgesia and prepare the cervix only when there is a clear indication.

17

Right technique





- Vaginoscopy

18

Right technique





- No touch technique and gentle movements, with respect to uterine walls and healthy tissue

19

Right technique



- Keep intrauterine pressure as low as possible.
- If higher pressure is required, minimise its duration and keep the patient informed at every step



- Use techniques that may shorten the procedure

20

Continuus training process





- First line of education should start in dry-lab and wet-lab
- Live surgeries, videos
- Hands-on only when you're ready – after wet-lab workshops and certification
- Continuus evaluation of skills and technique

21

Other important factors

- **Provide clear, honest information** about the procedure, possible pain and available alternatives—ensuring truly informed consent.
- **Maintain continuous communication** with the patient throughout the procedure.
- **Create a calm and safe environment**, with attention focused on the patient's individual needs.
- **Respect privacy and dignity** by limiting the number of staff present.
- **Use music** for relaxation and distraction, according to the patient's preference.
- **Consider warmed saline** as the uterine distension medium.

22

Other important factors

- **Provide clear, honest information** about the procedure, possible pain and available alte
- **M**
- **Cr** al
- **Re**
- **Us**
- **Consider warmed saline** as the uterine distension medium.

Pain management begins before the procedure – with trust, information and communication.

23



Office Hysteroscopy It Is Possible - When Done Right

Advanced office hysteroscopy under local anaesthesia requires:
- **Training**
- **Appropriate setting and instruments**
- **Empathy**
- **Continuous attention to the patient**

Our outcomes:
- Mean pain: **3,17/10 VAS**
- **97%** highly **satisfied** and would recommend our centre
- **only 5% stopped** and completed under general anaesthesia

24

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25

Thank you for your attention

Dominika Jasińska-Stasiaczek, MD
Mother and Child Health Center in Zabrze

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

26

Patient-centered perioperative pain managment in hysterectomy

Iwona Gabriel, MD, PhD ·
Medical University of Silesia Katowice Poland

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

I have no financial relationships to disclose

2

Objectives

- **Apply a patient-centered approach** to perioperative pain management by incorporating individual pain history, patient preferences, risk factors, and functional recovery goals.
- **Integrate evidence-based strategies** across the perioperative pathway, including preoperative education, multimodal opioid-sparing analgesia, and discharge planning.
- **Evaluate the evidence for regional and local analgesic techniques** in hysterectomy, particularly transversus abdominis plane (TAP) block and pelvic floor infiltration, considering both patient-reported pain and opioid consumption.
- **Identify opportunities to improve recovery and patient safety** through shared decision-making, individualized analgesia, reassessment, and clear postoperative instructions.

3

Widely known

Hysterectomy is one of the most common surgeries performed in the United States [1].

More than 35% of women aged 65 or older underwent hysterectomy [2].

4

Why patient-centered pain management matters

Pain is individual
Prior pain, anxiety, trauma, expectations, surgical route and social context influence the experience.

Poor control has consequences
Can impair coughing, sleep, mobility and oral intake; opioid adverse effects can delay recovery.

Success is shared
A plan is successful when pain is acceptable to the patient and key recovery activities are possible.

Ask: "What matters most to you in the first 24 hours after surgery?"

5

What makes care patient-centered?

1 Listen first
Elicit prior pain experiences, concerns about opioids, nausea, sedation, and what "manageable" means.

2 Decide together
Discuss options, likely benefits/limits, and the role of rescue medication.

3 Adapt the plan
Account for comorbidities, chronic pain, current medicines, cultural needs and access to support.

4 Reassess and respond
Ask about pain at rest and movement, side effects, function and whether the plan is working.

6

Before surgery: assess, explain, prepare

Pain history: chronic pelvic pain, back pain, prior postoperative pain

Medication review: opioids, buprenorphine, anticoagulants, allergies, OTC drugs

Risk screen: obstructive sleep apnea, renal/hepatic disease, GI ulcer/bleeding, frailty

Psychosocial factors: anxiety/depression, trauma history if volunteered, support at home

Set functional goals and explain the multimodal plan, expected pain trajectory and red flags

Use teach-back; provide written plan and a contact route for concerns

Ask a useful question

"What are you most worried about regarding pain or pain medicines after surgery?"

Document preferences

Preferred communication, acceptable trade-offs, and who should be involved.

7

Discharge: make the plan usable at home

A written medication map

Scheduled non-opioid medicines if appropriate; rescue instructions; maximum daily limits; side-effect precautions; stop/review instructions.

Safety-net advice

Who to call for uncontrolled pain, inability to keep fluids down, fever, heavy bleeding, wound concerns, shortness of breath or other urgent symptoms.

Use teach-back: "Can you tell me how you will take your medicines tonight, and what would make you call us?"

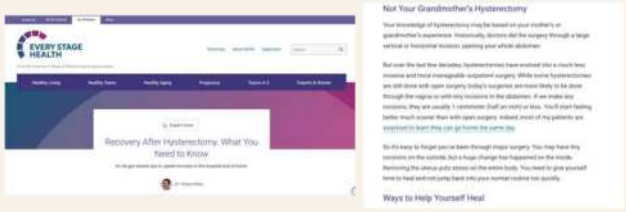
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Comments to patient education and surgical success

- A systematic review of randomized controlled trials among patients undergoing laparoscopic abdominal surgery proved direct coaching/education brings the best outcome [3]
- A systematic review included 17 studies with 1831 patients undergoing laparoscopic cholecystectomy, bariatric surgery (gastric bypass and gastric sleeve), and colectomy
- Among analyzed aspects were: **Nusea**: patients who received direct individual education demonstrated a decrease in postoperative nusea; **Pain**: Both direct education and educational videos displayed a significant reduction in pain; **Anxiety**: was significantly decreased in patients who received educational videos

9

Connect patients with the accurate websites



10

Clinical practice guidelines for postoperative pain management in adults (2024 edition) [4]

It is recommended to identify the following risk factors for postoperative pain: young age, high BMI, preoperative depression, preoperative opioid use, high expectation of postoperative pain (1A)

Preemptive analgesia, particularly mulitmodal analgesia and NSAIDS, is recommended to reduce postoperative pain and opioid consumption (2C)

For low/moderate risk patients, prophylactic antiemetics (5-HT3 antagonists, steroids, dopamine antagonists, NK-1 antagonists) are recommended (1A)

Patients who received preoperative pain education (n=3513) comparing to those who did not (n=3130) had lower pain scores at 24h, but not after 72h

11

ERAS update 2026 in gynecologic oncology [5]

- Literature search 2018-2025
- Previous ERAS in gynecologic oncology – 2016, 20219, 2023
- Preoperative medications: iv NSAID or acetaminophen to decdrease opioid consumption (evidence levele: moderate, recommendation grade: strong)
- Anesthetic managment should be standarized to minimize physiological disturbances, mitigate the surgical stress response, incorporate multimodal opioid-sparing analgesia, promote functional recovery, and reduce length of stay
- Recent evidence suggest that the benefits of TAP block may be more limited than previously believed

12

Own data, systematic review unpublished

De Oliveira Júnior et al 2017* [1]	20 mL of 0.25% ropivacaine	After anesthesia induction, a bilateral transversus abdominis plane infiltration	NRS 30 min 5.00 ± 2.22 NRS 60 min: 4.00 ± 1.48
	20 mL of 0.5% ropivacaine		NRS 30 min: 4.00 ± 1.48 NRS 60 min: 3.00 ± 1.48
	20 mL of solution saline (Placebo)		NRS 30 min: 6.00 ± 2.22 NRS 60 min: 6.00 ± 2.22
Calle et al, 2014* [3]	20 mL of 1.5 mg/kg of bupivacaine (each side)	End of the surgical procedure	VAS 24h: 4.02
	40 mL of 0.9% saline solution		VAS 24h: 4.44
Toker et al 2018* [4]	20 mL of 0.375% bupivacaine (each side) + PCA (tramadol - basal infusion: 10 mg/h, bolus 20mg every 15 minutes, maximum dose 90 mg/h - IV)	Preoperatively, after induction and intubation, and before the initiation of surgery	VAS on movement – 1h: 4 ± 0.74 VAS on movement – 24h: 3 ± 0.74
	40 mL 0.9% saline solution		VAS on movement – 1h: 5 ± 0 VAS on movement – 24h: 3 ± 0.37

TAP- Transversus Abdominis Plane Block

13

Comments to TAP block

Current opinion seems to favor TAP block in hysterectomy (regardless of the route), however if we look closer it focuses on the opioid use post- operatively [6], not the patient perception of pain (through NRS or VAS).

14

Own data, systematic review, unpublished

Pelvic Floor Infiltration			
Gezeh et al 2018* [8]	20 mL of 0.25% bupivacaine with 1:200,000 epinephrine	after intubation but before first skin incision.	VAS 1h: 4.34 VAS 24h: 4.38
	normal saline (not more details)	NI	VAS1h:4.63 VAS 24h: 4.46
Long et al 2009 [9]	20 ml of 0.5% bupivacaine with 1:200,000 epinephrine injected in a paracervical + 10 mL of PLA (each side)	Once general anesthesia was initiated the injection	VAS 30 minutes: 2.5 ± 3.1 VAS 24h: 2.2 ± 2.3
	normal saline (not more details)		VAS 30 minutes: 4.4 ± 3.0 VAS 24h: 2.0 ± 2.0
Kwack, et al 2018 [10]	10 mL of 7.5% (7.5 mg/mL) ropivacaine hydrochloride	When the uterus was completely removed	NRS 2h: 4.60 ± 1.54 NRS 24h: 2.90 ± 0.79
	10 mL of (9 g/1000 mL) saline solution		NRS 2h: 6.32 ± 2.38 NRS 24h: 2.52 ± 1.35

Pelvic Floor Infiltration

15

Own data, systematic review, unpublished

Hristovska et al 2018 [11]	50 mL of 0.50% ropivacaine	Before incision (paracervical) and close to the suture (ligaments)	VAS at rest 1h: 9.34 VAS at rest 24h: 1.17 VAS on movement 2h: 19.95 VAS on movement 24h: 12.53 VAS coughing 1h: 9.34 VAS coughing 24h: 17.90
	50 mL of 0.9% saline solution		VAS at rest 1h: 59.53 VAS at rest 24h: 1.17 VAS on movement 2h: 19.95 VAS on movement 24h: 19.95 VAS coughing 1h: 69.65 VAS coughing 24h: 19.07
Kim et al 2005 [12]	local infiltration with 20 mL of 0.5% bupivacaine + 30 mg KETO (IM)	After inducing anaesthesia	VAS at rest 1h: 4.4 ± 2.1 VAS at rest 24h: 2.0 ± 1.2
	local infiltration with 20 mL of 0.5% bupivacaine + 1 ml of saline (IM)		VAS at rest 1h: 5.6 ± 1.3 VAS at rest 24h: 2.2 ± 1.2
	local infiltration with 20 mL of 0.9% saline solution + 30 mg of KETO (IM)		VAS at rest 1h: 5.4 ± 1.7 VAS at rest 24h: 2.0 ± 1.0
	local infiltration with 20 mL of saline solution + 1 ml of saline (IM)		VAS at rest 1h: 6.1 ± 1.9 VAS at rest 24h: 3.3 ± 2.2

Pelvic Floor Infiltration

16

Comments to pelvic infiltration

Similar observation was noted in paper by Zacharakis et al. [7] (limited to vaginal hysterectomy):

- Mean pain scores at 30 min-2h and 3-6 hours were significantly lower in local anestetic group comparing to controls

17

Acknowledgments

- Prof. Maria Micussi- Federal University of Rio Grande de Norte, Brazil
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- Polish Society of Minimally Invasive Gynecologists

18

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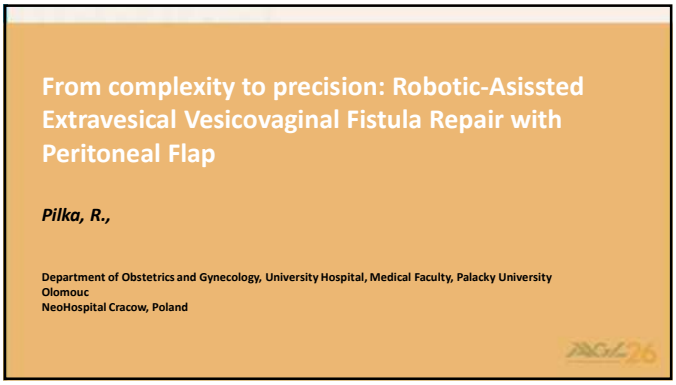
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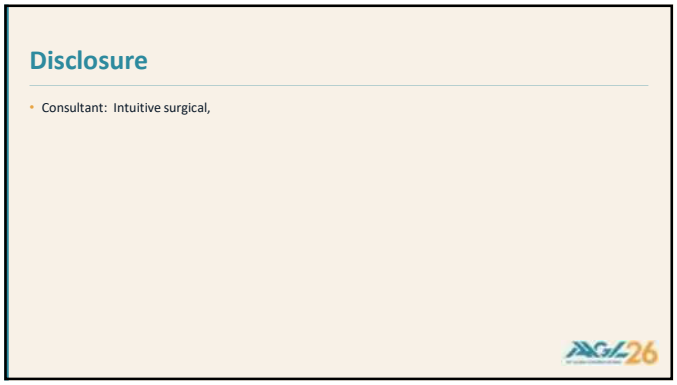
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Radovan pilka, MD · University Hospital Olomouc, University Hospital Brno, Czechia
NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

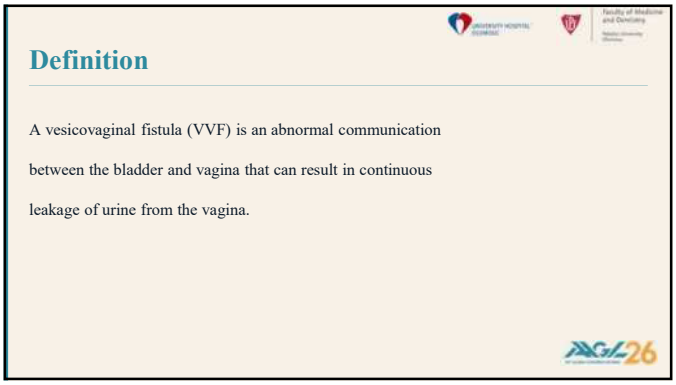
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From complexity to precision: Robotic-Asissted Extravesical Vesicovaginal Fistula Repair with Peritoneal Flap
Pilka, R.,
Department of Obstetrics and Gynecology, University Hospital, Medical Faculty, Palacky University Olomouc
NeoHospital Cracow, Poland

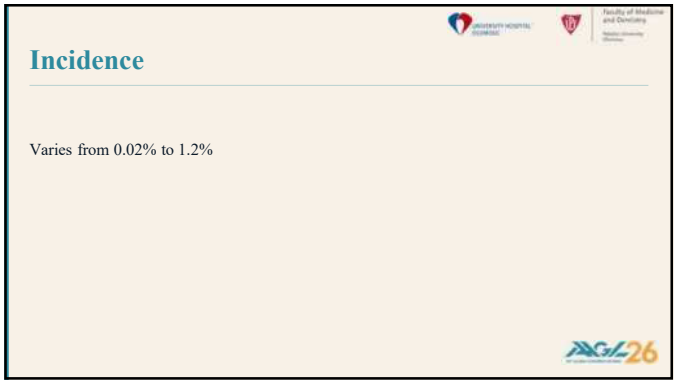
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Disclosure
Consultant: Intuitive surgical,

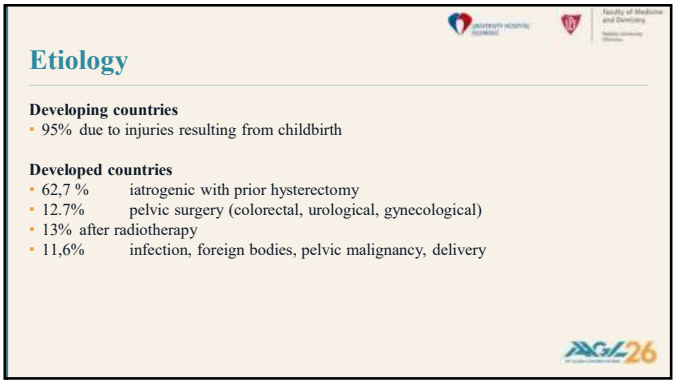
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Definition
A vesicovaginal fistula (VVF) is an abnormal communication
between the bladder and vagina that can result in continuous
leakage of urine from the vagina.

4


Incidence
Varies from 0.02% to 1.2%

5


Etiology
Developing countries
95% due to injuries resulting from childbirth
Developed countries
62,7 % iatrogenic with prior hysterectomy
12.7% pelvic surgery (colorectal, urological, gynecological)
13% after radiotherapy
11,6% infection, foreign bodies, pelvic malignancy, delivery

6

Classification

Simple VVFs
- < 2 cm
- solitary
- not induced by radiation.

Complex VVFs
- > 2 cm
- involves the ureter
- is related to a recurrence after previous failed repairs
- due to radiation damage

7

HISTORY OF VESICOVAGINAL FISTULA

- the oldest discovered fistula *(prof. Derry, Cairo, 1935)*
  - dates back to 2050 BC
  - described in the mummified queen Henhenit
- Avicenna *(1037 AD)*
  - described the association of vesicovaginal fistula with prolonged labour

Zacharin RF. A history of obstetric vesicovaginal fistula. Aust N Z J Surg. 2000 Dec;70(12):851-4. doi: 10.1046/j.1440-1622.2000.01990.x. PMID: 11167572.

8

- 1663 Hendrik van Roonhuyse *(Amsterdam)*
  - probably the 1st publication on operative gynecology
- 1675 Johann Fatio *(swiss physician)*
  - closed two fistulas using the Roonhuy´s technique
- 1766 Levret
  - was the first to use the knee-chest position in fistula clarification and surgery

Zacharin RF. A history of obstetric vesicovaginal fistula. Aust N Z J Surg. 2000 Dec;70(12):851-4. doi: 10.1046/j.1440-1622.2000.01990.x. PMID: 11167572.

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- 1836 John Peter Mettauer *(Virginia, USA)*
  - the first vesicovaginal fistula closure in the USA



Fig. 1. John Peter Mettauer (1787–1875).

Zacharin RF. A history of obstetric vesicovaginal fistula. Aust N Z J Surg. 2000 Dec;70(12):851-4. doi: 10.1046/j.1440-1622.2000.01990.x. PMID: 11167572.

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- 1845 – James Marion Sims *(Montgomery, Alabama)*
  - operation of three slaves (Betsy, Lucy, Anarcha) without anesthesia
  - Anarcha was "cured" on the 30th attempt
  - he was considered the "father of modern gynecology"
  - invented the Sims speculum



Fig. 2. The momentous fistula operation on Betsy.

Zacharin RF. A history of obstetric vesicovaginal fistula. Aust N Z J Surg. 2000 Dec;70(12):851-4. doi: 10.1046/j.1440-1622.2000.01990.x. PMID: 11167572.

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- 4th May 1855 in New York
  - the world's first fistula surgery hospital was opened

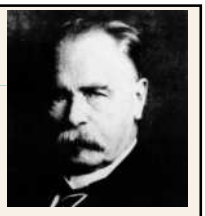


Fig. 3. The Women Hospital at 83 Madison Avenue, New York, 1855.

Zacharin RF. A history of obstetric vesicovaginal fistula. Aust N Z J Surg. 2000 Dec;70(12):851-4. doi: 10.1046/j.1440-1622.2000.01990.x. PMID: 11167572.

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- 1890 - Friedrich Trendelenburg
  - Pioneer of the transvesical approach
  - For fistula treatment introduced **Beckenhochlagerung' - the Raised Pelvic Position**







13

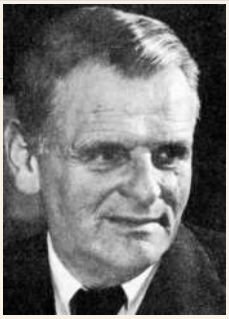
- 1894 – Alwin Mackenrodt
  - execution of the first so-called layered repair

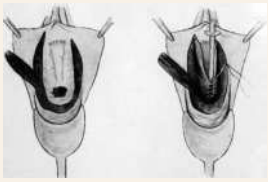


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- 1928 – Heindrich Martius
  - Martius flap - labial fat graft
  - inserted between the skin of the vagina and the wall of the bladder
  - the most important step in vesicovaginal fistula surgery





Zacharin RF. A history of obstetric vesicovaginal fistula. Aust N Z J Surg. 2000 Dec;70(12):851-4. doi: 10.1046/j.1440-1622.2000.01990.x. PMID: 11167572.

15

Surgery – Vaginal approach

Indications
- low solitary fistula (at or near the trigone)
- absence of other abdominal pathology (ureterovaginal fistula)

Technique
- Latzko technique
- Tissue interposition (Martius flap)

16

Surgery – Vaginal approach

Advantages

- decreased blood loss
- less operative time,
- decreased length of stay
- decreased post-operative pain
- faster recovery

17

Surgery – Vaginal approach

Contra – Indications

- contracted vaginal vault
- post radiation
- concomitant rectovaginal fistula
- concomitant ureterovaginal fistula

18

Surgery – Abdominal approach

Indications
- high VVF
- large fistula ($> 3\ cm$)
- multiple fistulas
- contracted vaginal vault
- post radiation
- concomitant rectovaginal fistula
- concomitant ureterovaginal fistula

19

Surgery – Abdominal approach

Technique
- **Transvesical** – described by Trendelenburg and made popular by O´Conor – **golden standard** for more than 50 years
- Extravesical

- tissue interposition
  - Omental flap
  - peritoneal flap
  - myocutaneous flap

20

Vaginal x Abdominal approach

Variables	Transvaginal	Transabdominal
Indication	Simple	Complex
Vaginal access/exposure	Limited	No
Blood loss	Limited	More
Invasiveness	Minimal	Maximal
Postoperative pain	Mild	Moderate - severe
Vaginal shortening	Possible	No
Associated pelvic pathology	No	Yes
Ureteric involvement	No	Yes
Success rate	**93%**	**91%**

21

Surgery – Laparoscopic approach

Mimic the open abdominal operation.

In **1994** Nezhat published first case of **laparoscopic** repair of VVF

In **1998** von Theobold described the **first** laparoscopic **extravesical** VVF repair

22

Surgery – Laparoscopic approach

Adoption of the conventional laparoscopic approach has been **limited** because of
- steep learning curve
- complex intracorporeal suturing skill requirements,
- inherent difficulty in dissecting between bladder and vagina

23

Surgery – Robot assisted approach

Mimic the open abdominal operation.

To **mitigate** the **limitations** of
- transvaginal approach
- open approach
- conventional laparoscopic transabdominal approach

- **Extravesical** approach

24

Robot-Assisted Vesicovaginal Fistula Repair

First described as a case report in 2005

- Melamud O, Eichel L, Turbow B, Shanberg A: Laparoscopic vesicovaginal fistula repair with robotic reconstruction. Urology. 2005 Jan;65(1):163-6. doi: 10.1016/j.urology.2004.09.052.

Metaanalysis from 2017

- transvaginal (n = 534/1379; 39%)
- transabdominal/transvesical approach (n = 493/1379; 36%)
- laparoscopic/robotic approach (n = 207/1379; 15%)
  - Bodner-Adler B, Hanzal E, Pablik E, et al. Management of vesicovaginal fistulas (VVFs) in women following benign gynaecologic surgery: a systematic review and meta-analysis. PLoS One 2017; 12(2):e0171554.

25

Gynecologic Robotic Center Olomouc

- A retrospective analysis was performed of patients diagnosed with iatrogenic genitourinary fistula between 2017-2026. Patient characteristics, fistula type and etiology, treatment modality, perioperative outcomes, complications, and recurrence rates were evaluated. Since 2023, a robotic-assisted approach has been gradually introduced at our center.

26

Gynecologic Robotic Center Olomouc

- Between 2017 and 2026, 20 patients were diagnosed with an iatrogenic genitourinary fistula.
- In 3 cases, spontaneous resolution occurred without the need for surgical intervention.
- Surgical treatment was performed in 17 patients.
- Recurrence requiring reoperation occurred in 2 patients.
- A total of 19 surgical procedures were performed.

27

Gynecologic Robotic Center Olomouc

- The most common fistula type was vesicovaginal fistula (n = 16), followed by ureterovaginal fistula (n = 3) and uterovaginal fistula (n = 1).
- The most common etiology was hysterectomy (n = 17).
- The median interval between the primary procedure and diagnosis was 15 days (IQR 3-725).

28

Gynecologic Robotic Center Olomouc

- Primary open repair was performed in 7 patients, while 10 patients underwent primary robotic-assisted repair.
- One recurrence was observed in each group, both managed with reoperation using the same surgical approach as the primary repair.
- This resulted in a total of 8 open and 11 robotic procedures.

29

Gynecologic Robotic Center Olomouc

- Median operative time was 158 min (IQR 46-225) in the open group and 146 min (IQR 75-290) in the robotic group.
- Median blood loss was 200 mL (IQR 20-250) versus 50 mL (IQR 10-100).
- Median length of hospital stay was 8 days (IQR 7-9) versus 4 days (IQR 3-10).
- Tissue flap interposition was used in 0/8 open and 9/11 robotic procedures.
- One major complication occurred in the robotic group, requiring bilateral ureteral reimplantation.

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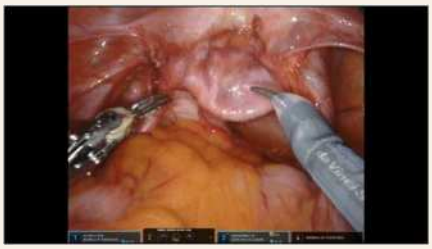
Case Report

- H.E.
- 46 y
- History: 3 spontaneous deliveries
- 2020 LAVH + Bilateral Salpingectomy (at referring hospital) with recurrent postoperative hematomas
- Subsequently urinary leakage

- 11/2022 diagnosed with vesicovaginal fistula, locally estrogens
- 2/2023 Robot assisted laparoscopic resection of VV fistula

31

Video



32

Case Report

- H.E.
- 46 y

- 2/2023 Robot assisted laparoscopic resection of VV fistula

- **6/2023 gyne exam - no urine leakage**

33



available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

Surgery in Motion

Best Practices in Robotic-assisted Repair of Vesicovaginal Fistula: A Consensus Report from the European Association of Urology Robotic Urology Section Scientific Working Group for Reconstructive Urology

Marco Randazzo, Linda Lengauer, Charles-Henry Rochat, Achilles Ploumidis, Darko Kröpfl, Jens Rassweiler, Nicolo Maria Buffi, Peter Wiklund, Alexandre Mottrie, Hubert John

34

Timing of procedure

- No consensus

- A trial with a catheter for attempting a conservative management of up to 12 wk.

- There is no minimum time for surgical treatment (robotic VVF repair) from initial diagnosis in order for the edema to resolve.

35

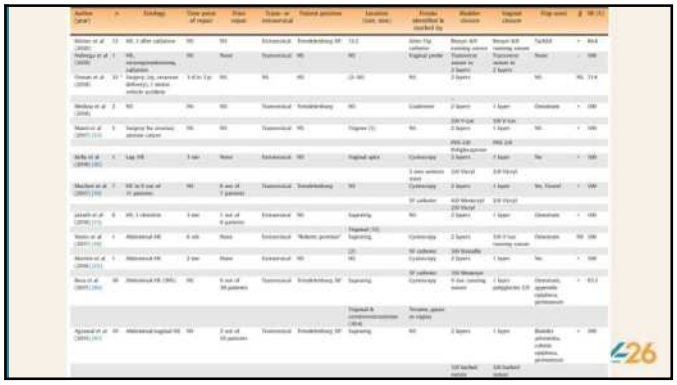
Postoperative management

- No drain

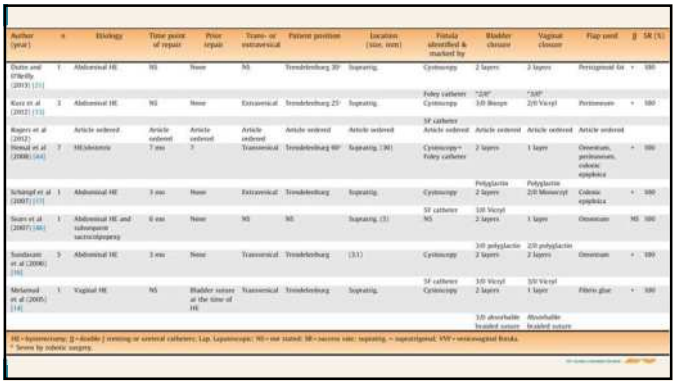
- Bladder catheterization 7-14 dys

- Sexual abstinence 4 wks

36



37



38

Conclusions

- VVF is a rare but devastating complication mainly after hysterectomy.
- Its repair is technically demanding
- In this cohort, robotic-assisted repair appears to be a feasible minimally invasive alternative to open surgery, with favourable perioperative outcomes and comparable recurrence rates.
- The transition to a robotic approach expanded minimally invasive reconstructive options in genitourinary fistula management. Larger patient cohorts are needed to better define the potential benefits and limitations of each surgical approach.

39



Thank you…

40

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- ***Bizon, M., M.D., Ph.D.*, NeoHospital Cracow, Poland**
- **Pulkert, J., M.D., University Hospital Brno, Czechia**

41

Deep endometriosis: mapping and management

Joanna Jacko, MD PhD · Medicover Hospital

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

I have no financial relationships to disclose.

2

Learning objectives

By the end of this lecture, participants will be able to:

- Define deep endometriosis and list its typical anatomical sites
- Describe the role of transvaginal ultrasound and MRI in the ESHRE 2022 diagnostic pathway
- Compare the rASRM, #Enzian, AAGL and EFI systems and the question each one answers
- Select TVS or MRI for an individual patient, based on expertise, extent of disease and clinical context
- Identify the patients who need surgery and those who are better served by medical therapy
- Evaluate the effect of surgery on fertility and ovarian reserve, including before IVF
- Plan multidisciplinary preoperative mapping and postoperative follow-up

3

Outline

- Deep endometriosis – how deep is deep endometriosis?
- Mapping deep endometriosis – why it matters?
- Management – who really need surgery?

4

How deep is deep endometriosis?

ISUOG 2021

- DE = infiltration > 5 mm beneath the peritoneum
- traditional definition
- facilitates standardized imaging assessment

ESHRE 2022

- questions the 5-mm thershould
- considers it arbitrary
- focuses on anatomical location and extent of disease

5

How deep is deep endometriosis?


JOURNAL ARTICLE

An international terminology for endometriosis, 2021

International Working Group of AAGL, ESGE, ESHRE and WES, Carla Tomassetti, Neil P Johnson, John Petrozza, Mauricio S Abrao, Jon I Einarsson, Andrew W Horne, Ted T M Lee, Stacey Missmer, Nathalie Vermeulen, Krina T Zondervan, Grigoris Grimbizis, Rudy Leon De Wilde

Human Reproduction Open, Volume 2021, Issue 4, 2021, hoab029, https://doi.org/10.1093/hropen/hoab029

From depth-based to anatomy-based definition of deep endometriosis

- defined as endometriosis located beneath the peritoneal surface,
- no minimum depth of infiltration is required,
- focuses on anatomical location rather than the traditional >5 mm criterion.

6

How deep is deep endometriosis?

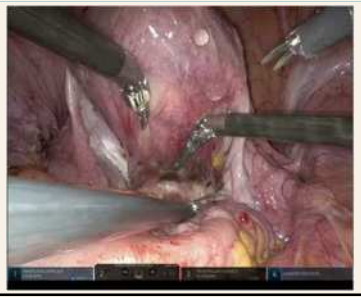
Typical sites:

- uterosacral ligaments,
- rectovaginal septum,
- vagina,
- rectosigmoid,
- bladder,
- ureters

Often multifocal, and the visible lesion can underestimate the true extent of disease

7

How deep is deep endometriosis?



8

How deep is deep endometriosis?



9

Mapping deep endometriosis – why it matters?

The problem – delay and uncertainty

- Average diagnostic delay of **7–10 years** in many countries
- Symptoms (dysmenorrhoea, dyspareunia, dyschezia, dysuria, chronic pelvic pain, infertility) are non-specific
- Normal findings at routine ultrasound or a "negative" laparoscopy can miss DE

10

Mapping deep endometriosis – why it matters?

2016 International Deep Endometriosis Analysis (IDEA) Group

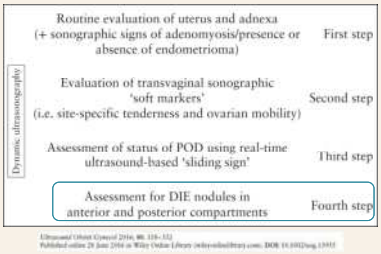

ULTRASOUND
in Obstetrics & Gynecology

Systematic approach to sonographic evaluation of the pelvis in women with suspected endometriosis, including terms, definitions and measurements: a consensus opinion from the International Deep Endometriosis Analysis (IDEA) group

11

Mapping deep endometriosis – why it matters?

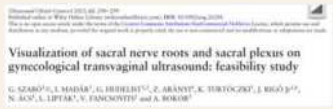
2016 International Deep Endometriosis Analysis (IDEA) Group



12

Mapping deep endometriosis – why it matters?







13

Why mapping matters – diagnosis

The use of IDEA protocol improved the non-invasive diagnosis of endometriosis

ESHRE guidelines - February 2022

Table I. Overview of changes to the guideline recommendations as compared to the previous version (Dunselman, et al., 2014)

Chapter	Changes in the current version
Diagnosis of endometriosis	Laparoscopy is no longer the diagnostic gold standard and it is now only recommended in patients with negative imaging results and/or where empirical treatment was unsuccessful or inappropriate.

- Faster diagnosis means earlier treatment and less suffering
- Confirms or excludes bowel, bladder and ureteral involvement
- **Expert TVS is the first-line test**; MRI is an equally valid alternative

14

TVS or MRI – when is MRI the better choice?

- No expert sonographer is available, since TVS accuracy is operator-dependent
- Disease is extensive or multicompartmental, and a global view of the pelvis is needed
- Retroperitoneal or extra-pelvic involvement is suspected: parametria, pelvic sidewall, sacral plexus and sciatic nerve, bowel above the rectosigmoid
- Ureteral involvement needs a fuller assessment (MR urography)
- Adnexal mass is uncertain, for example a suspected atypical endometrioma
- TVS is not tolerated or not feasible (severe pain, vaginismus, no prior vaginal intercourse)

15

Mapping deep endometriosis – why it matters?









16

Why mapping matters – surgical planning

Preoperating preparation

- Allows choice of the **right surgeon, team and setting** (gynaecologist, colorectal surgeon, urologist)
- Anticipates the procedure: shaving, disc excision, segmental resection, ureterolysis
- Reduces the risk of **incomplete surgery, unplanned conversions and complications** (bowel, ureter, nerve injury)
- Better **informed consent** and realistic expectations for the patient

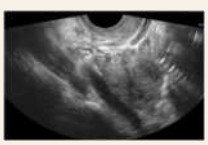
17

Why mapping matters – protecting organs

Preoperating preparation

- Ureteral involvement can cause **silent hydronephrosis and loss of kidney function**
- Detecting it early changes urgency and management
- Mapping identifies cases that need urology input before any intervention





18

Why mapping matters – long-term care

- Informs **medical vs. surgical decisions** and fertility planning (e.g. avoiding unnecessary surgery before IVF)
- Provides a **baseline** for monitoring response to hormonal therapy
- Supports comparison of outcomes and research through common classification

19

Mapping deep endometriosis – overview of the four systems

	rASRM	#ENZIAN	AAGL2021	EFI
• Year	• 1996	• 2005, updated 2021	• 2021	• 2010
• Main purpose	• Staging of disease burden	• Mapping of deep disease	• Staging linked to surgical complexity	• Fertility prognosis
• Basis	• Laparoscopy	• Surgery, TVS, MRI	• Surgical findings	• Surgery plus clinical history
• Output	• Stage I–IV (points)	• Compartment and grade code	• Stage I–IV (points)	• Score 0–10

20

Mapping deep endometriosis – #ENZIAN



21

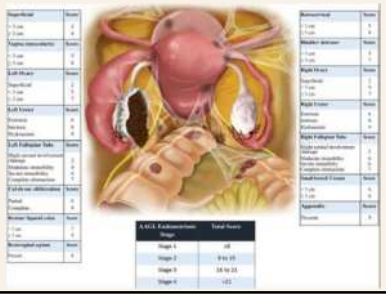
Mapping deep endometriosis – #ENZIAN

- Compartment-based and designed to complement rASRM
- Compartments:
  - A: rectovaginal septum and vagina
  - B: uterosacral ligaments and pelvic sidewall
  - C: rectum and sigmoid
  - F: other locations (FA adenomyosis, FB bladder, FU ureter, FI bowel above the sigmoid, FO other)
  - P / O / T: peritoneum, ovary, tubo-ovarian adhesions
- Grades 1–3 by lesion size (<1 cm, 1–3 cm, >3 cm)

- **Strengths:** works with surgery, ultrasound and MRI; maps retroperitoneal disease; supports preoperative planning
- **Limitations:** too complicated?

22

Mapping deep endometriosis – AAGL 2021



23

Mapping deep endometriosis – AAGL 2021

- Newer **points-based system** that gives a stage (I–IV)
- Built around **anatomical sites,** including deep disease, ovarian disease and adhesions
- Aims to reflect **surgical difficulty** and to correlate better with clinical outcomes

- **Strengths:** closes some rASRM gaps, with a more clinically oriented design
- **Limitations:** a surgical system, with limited validation and adoption so far (too complicated?)

24

Mapping deep endometriosis – head to head comparison

Criterion	rASRM	#ENZIAN	AAGL2021	EFI
Describes deep endometriosis	✗	✓ ✓	✓	✗
• Usable with imaging	✗	✓	✗	✗
• Preoperative planning	✗	✓ ✓	• Limited	✗
• Surgical complexity	• Limited	• Partial	✓	✗
• Fertility prognosis	✗	✗	✗	✓ ✓
• Correlation with pain	• Weak	• Understudy	• Understudy	• n/a

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Mapping deep endometriosis – summary

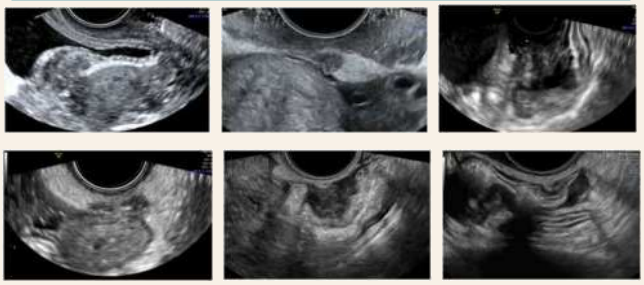
- **No single system fits all purposes**
- **rASRM** remains the reference for general staging, but it underestimates deep disease
- **#Enzian** is the best tool for **mapping deep endometriosis** and for planning surgery
- **AAGL 2021** adds a surgery-oriented stage that is still being validated
- **EFI** answers a different question: what are the fertility chances after surgery?

In practice:

combine them, for example #Enzian for the map, rASRM or AAGL for the stage, and EFI in infertile patients

26

Mapping deep endometriosis – why it matters?



27

Management – who really need surgery?

First-line management is not surgical

Analgesia
NSAIDs for pain relief

Hormonal suppression
Combined oral contraceptives, dienogest, LNG-IUS, GnRH analogues or antagonists. Similar pain relief, so choose by side effects and preference.

No surgery to start
Empirical treatment is acceptable without a confirmed diagnosis

28

Management – who really need surgery?

1 · Uncontrolled pain
Medical therapy fails, is not tolerated or is contraindicated

2 · Ureter at risk
Hydronephrosis or threat to kidney function (urgent)

3 · Bowel stenosis
Obstructive symptoms

4 · Suspicious cyst
Atypical endometrioma, torsion, rupture or abscess

5 · Symptomatic deep disease
Patient declines or fails medical therapy

6 · Selected infertility
Clear surgical indication, individually assessed

29

Management – who really need surgery?

Who probably does not need surgery?

- Asymptomatic or mildly symptomatic patients, including incidental findings on imaging
- Pain controlled on medical therapy
- Small, stable endometriomas without symptoms or suspicious features (surveillance)
- Patients before IVF with endometrioma, where routine cystectomy does not improve live birth and may reduce ovarian reserve
- "Negative" patients on whom diagnostic laparoscopy alone is proposed, when imaging and clinical findings already guide treatment

30

Surgery and fertillity

Use the EFI to guide the choice between expectant management, surgery and IVF.

Situation	Role of surgery
Minimal or mild disease	Operative laparoscopy may improve ongoing pregnancy
Endometrioma	Cystectomy prefered, but it risks ovarian reserve
Deep endometriosis	Benefit of fertility uncertain; individual decision
Before ART	Not routinely recommended to improve IVF results

31

Deep endometriosis: mapping and management

Before
Expert TVS or MRI mapping and a multidisciplinary team

During
Excision of visible disease in a specialised centre, with the least radical effective technique and full informed consent

After
Long-term hormonal suppression unless pregnancy is desired, plus planned follow-up

32

Deep endometriosis: mapping and management





33

Deep endometriosis: summary

Mapping

- Imaging replaces routine diagnostic laparoscopy
- Expert TVS first; MRI when expertise is lacking or disease is extensive
- Negative imaging does not exclude disease
- Report with IDEA and #ENZIAN disease

Management

- Medical therapy first
- Surgery for failed therapy, ureter or bowel threat or suspicious cyst
- Operate with MDT in a specialised centre
- Report with IDEA and #ENZIAN disease

No map, no plan. Individualise the decision

34

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35

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/