AAGL 26

55TH GLOBAL CONGRESS ON MIGS

BOSTON, MASSACHUSETTS
NOVEMBER 13-16, 2026

Syllabus

Panel 505

Medical Optimization for Surgical Management of Endometriosis

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Charles H. Koh, MD

SCIENTIFIC PROGRAM CHAIR
Nash S. Moawad, MD

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Michael Hibner, MD, PhD



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Panel-505: Medical Optimization for Surgical Management of Endometriosis

Chair: Susan Khalil
Faculty: Susan Khalil, Sun-Wei Guo, Drorit Or, Ido Sirota

Course Description

This course will describe medical optimization strategies for surgical management of endometriosis. A panel discussion will include the pros and cons of using medical optimization including the benefits, limitations and how this changes surgical excision techniques for endometriosis of the uterus, adnexa, gastrointestinal tract, and genitourinary tract. Surgical video demonstrations will also be included as reference material for the panelists with voices in favor of use and against its use to present a balanced evidence-based approach for guiding the endometriosis surgeon and complex benign gynecologist. This course will help surgeons perform adaptive surgical techniques in patients exposed to GNRH agonist and antagonists, along with those with overlapping pain conditions for optimization post-surgical management.

Learning Objectives: *At the end of this course, the participant will be able to:* 1) Describe management strategies for medication optimization in conjunction with endometriosis excision surgery; 2) Identify the limitations of medication optimization in conjunction with endometriosis excision surgery, specifically gonadotropin releasing hormone (GnRH) antagonists and agonists; and 3) Perform adaptive surgical techniques in patients exposed to GnRH agonist and antagonists, including patients with overlapping pain conditions, to optimize postsurgical management using FIGO R U MOVING System for chronic pain.

Course Outline

3:15 pm	Welcome, Introduction and Course Overview	S. Khalil
3:20 pm	Medical Optimization for Surgical Management of Endometriosis and the Role of Chronic Overlapping Pain Conditions	S. Khalil
3:30 pm	Chronic Overlapping Pain Syndromes and the Role of Surgical Excision of Endometriosis	I. Sirota
3:40 pm	Surgical Excision Techniques in Pre-Treated Tissue with Endometriosis	D. Or
3:50 pm	Recurrence of Endometriosis and its Control	S. Guo
4:00 pm	Discussion Questions & Answers	All faculty
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

Susan Khalil, MD - Consultant: Johnson & Johnson, Smith & Nephew; Contracted Research: Johnson & Johnson, NSF; Speakers Bureau: Smith & Nephew

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).

Sun-Wei Guo, BSc, M.Med, MSc, PhD - Scientific Advisory Board: Heranova, Maipl, FimmCyte, E3A Healthcare, Foraviset; Consultant: Foraviset; Travel Grant: Ziwig
Susan Khalil, MD - Consultant: Johnson & Johnson, Smith & Nephew; Contracted Research: Johnson & Johnson, NSF; Speakers Bureau: Smith & Nephew
Ido Sirota, MD, MHA*
Drorit Or, 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. Dr. Khalil'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 her influence were subject to independent peer review by individuals without relevant financial relationships.

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

Surgical Excision Techniques In Pre-Treated Tissue with Endometriosis

Susan Khalil, MD · Mount Sinai Hospital, New York, NY

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

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Disclosure

- J&J- Research funding to institution, Consultant (previous)
- S&N- Consultant, Speakers Bureau
- Springer- Royalties, Surgical Atlas
- NSF-Research Funding

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Objectives

1. Apply medication used for surgical management of endometriosis
2. *Evaluate the impact of medical adjuvants for surgical management of endometriosis*
3. *Identify surgical indications for use of medical adjuvants and application in pretreated tissue*

3

Medication That Impacts Surgical Tissue in Endometriosis

Gonadotropin Releasing Hormone Agonists (GNRH)

Gonadotropin Releasing Hormone Antagonists

GnRH agonists	GnRH antagonists
Buserelin (Suprefact)	Abarelix (Plenaxis)
Goserelin (Zoladex)	Degarelix (Firmagon)
Leuprorelin (Lucrin, Eligard, generics)	
Triptorelin (Pamorelin)	

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SURGICAL VIDEO: TREATED VS NONTREATED TISSUE VS NON-ENDOMETRIOSIS TISSUE

- [VIDEO]

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Impact on Surgery for Endometriosis

- Change in the surgical planes for endometriosis
- Impact on DIE vs Early Endometriosis
- Concerns that it makes diseased tissue less apparent
- Can make the planes less distinct
  - i.e. leiomyomas

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Lamvu G, Villegas-Echeverri JD, Allaire C, As-Sanie S, Carrillo J, Khalil S, Horne AW, Wang A, Munro MG. Developing the FIGO-IPPS "R U MOVVING SOMe" classification system for female chronic pelvic pain. Int J Gynaecol Obstet. 2025 Nov;171(2):550-565. doi: 10.1002/ijgo.70522. Epub 2025 Sep 8. PMID: 40922503; PMCID: PMC12553108.

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Evaluation of Pain: Considerations



- Baseline pain- daily pain
- Pain outliers- severe pain that limits ADL
- Standardized tools for pain intake
- Presence of co-existing overlapping pain syndromes
- Optimization of pain centralization
- Multidisciplinary collaboration
- # days per month with missed critical events
  - Cumulative impact

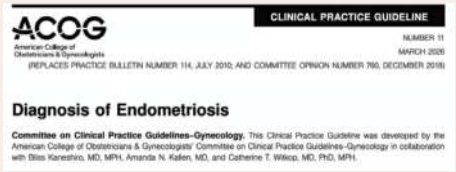
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Patient Reported Outcomes (PRO's)

- Critical event that pain became worse
- Chronic daily pain that has become less manageable
- Pain that interferes with important life goals
- Tracking has been more feasible

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Endometriosis and Pain Updates: 2026


ACOG
American College of Obstetricians & Gynecologists

CLINICAL PRACTICE GUIDELINE

NUMBER 11
MARCH 2026

(REPLACES PRACTICE BULLETIN NUMBER 114, JULY 2010, AND COMMITTEE OPINION NUMBER 760, DECEMBER 2018)

Diagnosis of Endometriosis

Committee on Clinical Practice Guidelines–Gynecology. This Clinical Practice Guideline was developed by the American College of Obstetricians & Gynecologists' Committee on Clinical Practice Guidelines–Gynecology in collaboration with Bliss Kaneshiro, MD, MPH, Amanda N. Kallen, MD, and Catherine T. Wilkop, MD, PhD, MPH.

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Box 1. Signs and Symptoms Suggestive of Endometriosis

Patient History

- Infertility in association with 1 or more of the symptoms listed below
- Family history of diagnosed endometriosis (particularly in a 1st-degree relative)
- Adolescents: school absenteeism during menstruation, dysmenorrhea refractory to treatment with nonsteroidal anti-inflammatory drugs or oral contraceptive pills or both

Common Symptoms (1 or more of the following, which may be cyclic or noncyclic)

- Chronic pelvic pain (ie, pain lasting 6 months or longer)
- Dysmenorrhea
- Dyspareunia
- Dysuria or other urinary symptoms (eg, hematuria)
- Dyschezia or postcoital bleeding

Extrapelvic Symptoms (which may have cyclic exacerbation)

- Gastrointestinal (bowel): bloating, diarrhea, constipation, nausea with pelvic pain or dysmenorrhea (adolescents), rectal bleeding
- Thoracic: shoulder or subcostal pain, pneumothorax, hemothorax
- Sciatic nerve pain
- Skin: surgical scar swelling or mass
- Fatigue or malaise

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Table 1. Differential Diagnosis of Endometriosis

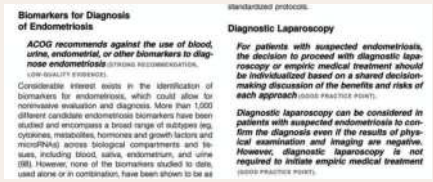
Symptom	Conditions With Similar Clinical Presentation*
Nonmenstrual pelvic-abdominal pain	Irritable bowel syndrome, neuropathic pain, adhesions, abdominal wall nerve entrapment syndromes, pelvic inflammatory disease, adnexal mass, ovarian cyst
Dysmenorrhea	Primary dysmenorrhea (ie, dysmenorrhea in the absence of pelvic pathology), adenomyosis, reproductive tract anomalies in adolescents (eg, obstructive müllerian anomalies), leiomyomas
Dyspareunia	Sexual dysfunction, pelvic floor disorders, history of trauma or sexual abuse, psychosocial issues (eg anxiety, depression)
Dyschezia or gastrointestinal symptoms (diarrhea, cramping, constipation)	Hemorrhoids, constipation, irritable bowel syndrome, inflammatory bowel disease, anal fissures, pelvic floor disorders
Dysuria	Interstitial cystitis, painful bladder syndrome, pelvic floor disorders
Infertility	Unexplained subfertility

Modified with permission from Falcone T, Flyckt R. Clinical management of endometriosis. Obstet Gynecol 2018;131:557–71. doi: 10.1097/AOG.0000000000002483.

*This is not an all-inclusive list of conditions.

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Biomarkers for Diagnosis of Endometriosis

ACOG recommends against the use of blood, urine, endometrial, or other biomarkers to diagnose endometriosis (STRONG RECOMMENDATION, LOW-QUALITY EVIDENCE).

Considerable interest exists in the identification of biomarkers for endometriosis, which could allow for noninvasive evaluation and diagnosis. More than 1,000 different candidate endometriosis biomarkers have been studied and encompass a broad range of subtypes (eg, cytokines, metabolites, hormones and growth factors and microRNAs) across biological compartments and tissues, including blood, saliva, endometrium, and urine (98). However, none of the biomarkers studied to date, used alone or in combination, have been shown to be as

standardized protocols.

Diagnostic Laparoscopy

For patients with suspected endometriosis, the decision to proceed with diagnostic laparoscopy or empiric medical treatment should be individualized based on a shared decision-making discussion of the benefits and risks of each approach (GOOD PRACTICE POINT).

Diagnostic laparoscopy can be considered in patients with suspected endometriosis to confirm the diagnosis even if the results of physical examination and imaging are negative. However, diagnostic laparoscopy is not required to initiate empiric medical treatment (GOOD PRACTICE POINT).

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ACOG PB 114, 2026



who perform laparoscopic evaluation of suspected endometriosis in adolescent patients should familiarize themselves with the sometimes different or variable presentation compared with adult patients (64, 66, 111).

During diagnostic laparoscopy, a biopsy of suspected endometriotic lesions should be considered to provide histologic confirmation of visual findings; however, a negative histopathologic result does not exclude the possibility of endometriosis (GOOD PRACTICE POINT).

Suspected endometriotic lesions should be treated at the time of initial laparoscopy, when possible, to help avoid the need for additional surgery (GOOD PRACTICE POINT).

Expert guidelines in endometriosis management generally recommend that diagnostic laparoscopy for endometriosis should include concurrent treatment when feasible (14, 47). Before diagnostic laparoscopy, clinicians should discuss the potential for concomitant treatment with patients and obtain informed consent for

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Role of Imaging for Recurrence

Surgical Artifact	
Endometriosis Regrowth	Peritoneal pockets: have different clinical presentations. Depending on the topography and depth of infiltration, they can be the cause of some neurologic symptoms associated with endometriosis pain. May not appear on imaging
Patient clinical symptoms/signs- important drivers of surgical decision	Increasing pain followed by periods of relief post surgery

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Endometriosis Disease Site Affection and Considerations for Surgical Intervention

Endometriosis Site/Impact	Considerations
Deep infiltrating endometriosis	Does suppression alter fibrosis, lesion size, surgical planes or complication rates?
Bowel endometriosis	Does pretreatment change the need for shaving, discoid excision or segmental resection?
Ureteral endometriosis	Is there evidence of benefit beyond symptom suppression, without delaying necessary decompression or surgery?
Ovarian endometriomas	Does treatment improve surgical outcomes or ovarian reserve?
Patients with recurrent disease	Does pretreatment improve reoperative outcomes or merely control symptoms before surgery?
Patients pursuing fertility	Does treatment delay conception or improve subsequent fertility outcomes?

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GHRH Agonists

- Gonadotropin-releasing hormone agonists are highly effective in reducing the pain syndromes associated with endometriosis. However, they are not superior to other methods such as combined OCs as first-line therapy
- *Considerations for use:*
  - *Multiple surgical procedures, and additional may cause greater morbidity or increased risk for mortality*
  - *Progestin use and* ***resistance to progestin***
  - *Endometriosis flair-up: pelvic and extrapelvic locations*
    - *Bridge to medical management*
    - *Use for short intervals can be used*

Source: ACOG PB 114

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Duration of Use

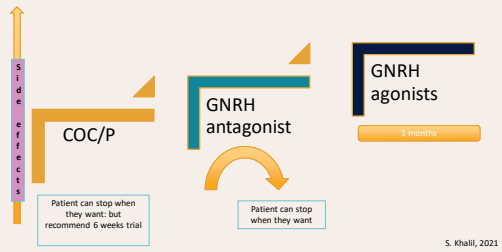
- GNRH agonists: up to 12 months (consider add-back therapy)
  - Side effects: hot flushes, vaginal dryness, osteopenia
  - Osteopenia has been shown to be reversible with short-term use, but may not be with long-term use or use of multiple cycles
  - Recurrence rate at 5 years in advanced endometriosis: 53-73%
- GNRH antagonists: up to 24 months
  - Side effects: nausea, hot flushes, vaginal dryness, osteopenia

Pierce SJ, Gazvani MR, Farquharson RG. Long-term use of gonadotropin-releasing hormone analogs and hormone replacement therapy in the management of endometriosis: a randomized trial with a 6-year follow-up. Fertil Steril 2000;74:964–8.

Waller KG, Shaw RW. Gonadotropin-releasing hormone analogues for the treatment of endometriosis: long-term follow-up. Fertil Steril 1993;59:511–5.

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Stepwise Approach with Patient-Centered Shared Decision Making



S. Khalil, 2021

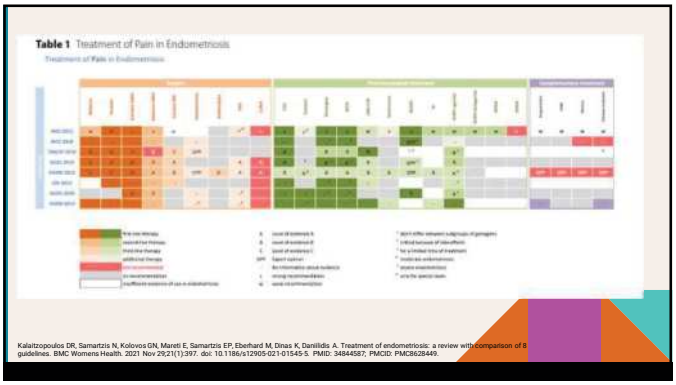
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- **Review of National/International Guidelines on endometriosis:**
  - Six national (College National des Gynecologues et Obstetriciens Francais, National German Guideline (S2k), Society of Obstetricians and Gynaecologists of Canada, American College of Obstetricians (ACOG) and Gynecologists, American Society for Reproductive Medicine (ASRM) and National Institute for Health and Care (NICE)
  - Two international (World Endometriosis Society, European Society of Human Reproduction and Embryology) guidelines
- **All the above-mentioned guidelines agree that the combined oral contraceptive pill, progestogens are therapies recommended for endometriosis associated pain.**
- **Concerning infertility, there is no clear consensus about surgical treatment. Discrepancies are also found on recommendation of the second- and third-line treatments**

Kalaitzopoulos DR, Samartzis N, Kolovos GN, Mareti E, Samartzis EP, Eberhard M, Dinas K, Daniilidis A. Treatment of endometriosis: a review with comparison of 8 guidelines. BMC Womens Health. 2021 Nov 29;21(1):397. doi: 10.1186/s12905-021-01545-5. PMID: 34844587; PMCID: PMC8628449.

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Kalaitzopoulos DR, Samartzis N, Kolovos GN, Mareti E, Samartzis EP, Eberhard M, Dinas K, Daniilidis A. Treatment of endometriosis: a review with comparison of 8 guidelines. BMC Womens Health. 2021 Nov 29;21(1):397. doi: 10.1186/s12905-021-01545-5. PMID: 34844587; PMCID: PMC8628449.

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The Role of Surgery for Pain

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Adhesiolysis and Pain

- Adhesiolysis without endometriosis has not been supported to improve pain*
- Role of restoring anatomy in Endometriosis:
  - Ovariolysis
  - Enterolysis
  - Ureterolysis
  - Excision of endometriosis

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Decision for Surgery

Medical Management
- Wants to avoid surgery
- Morbidity of surgery outweighs benefit

Surgical Management
- Progestin resistance
- Disease burden in the setting of minimal improvement with medication management
- Desires management as part of the fertility pathway

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Recurrence of Pain and Post-Surgical Management

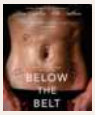
- Menstrual suppression
- Overlapping chronic pain syndromes
- Neuropathic pain vs endometriosis pain

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Shared Decision Making and Expectations

Transitioning From Disease-Centered Labels to Personalized Medicine Approach

- Safe surgical outcomes
- Discussing key changes that may occur as a result of surgery
- Pain that may persist or worsen









Source: Alliance for Patient Access, Sprout Social (infographic), https://twitter.com/patientaccess/status/1209139116899753990/photo/1

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Endometriosis Care Map

Initial or Early Presentation	Short term management	Long Term management
Diagnosis: Imaging to assess baseline with TVS	Diagnosis or intervention: Laparoscopy for diagnosis or resection	After surgical resection: menstrual suppression with progesterone only or COC
Diagnosis: If negative, then MRI to assess based on clinical findings for non-mass lesions of endometriosis	Pain Management: NSAIDs with adequate education on loading dose and additional dosing Pain management consultation if they require additional pain medication	If additional pain despite trial of various hormonal agents, then short-term use of GNRH agonists or antagonists
Medication management or diagnostic laparoscopy with possible resection	Menstrual suppression with progestin-based method, or COC if unable to tolerate	Interval imaging to identify endometriosis
Trial of non-surgical methods for pain, give a 3-6 months time frame	Stop menstrual suppression if they are trying to conceive (i.e. 6 months then REI for ART)	HRT if patient had BSO and is premenopausal
Fertility counseling on planning		

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PATHOPHYSIOLOGY: Central Sensitization

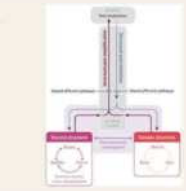
- Endo Lesions → Inflammatory Mediators (IL6, CGRP, CRP) → Peripheral Nociceptors → Ascending Spinal Tracts
- Dysfunctional HPA axis + Systemic Immune Dysregulation →
- Decreased Inhibition of pain signals from CNS to periphery



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PATHOPHYSIOLOGY- VISCERO-VISCERO CROSS SENSITIZATION

- Cross sensitization and convergence between organs
- Secondary mediators affect shared neural pathways
- Multiple pelvic conditions frequently coexist
  - JAMA review showed 45% of women with IC/Bladder Pain Syndrome have concurrent Endometriosis
  - 30-70% have IBS
- Single organ treatments may not provide significant relief



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TREATMENT ALGORITHM



IMAGING

MEDICATIONS

INTERVENTIONS

REHABILITATIONS

REFERRALS

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TREATMENT



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TREATMENT



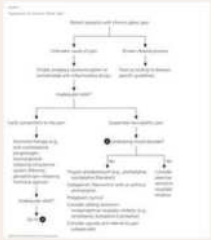
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TREATMENT



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TREATMENT- SUGGESTED ALGORITHM (AFP)



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HORMONE THERAPY

- 1st line for Estrogen Dependent Pathology
  - Combined Hormonal Contraceptives or Progestin Only
- GRH Agonists and Antagonists
  - SECOND LINE

GnRH agonists	GnRH antagonists
Buserelin (Suprefact)	Abarelix (Plenaxis)
Goserelin (Zoladex)	Degarelix (Firmagon)
Leuprorelin (Lucrin, Eligard, generics)	
Triptorelin (Pamorelin)	

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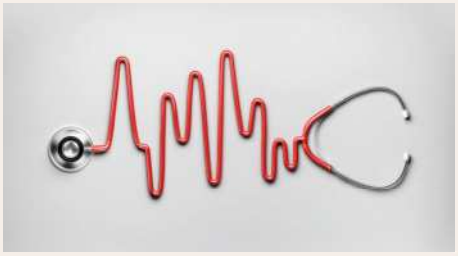
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Thank you!

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Chronic Overlapping Pain Syndromes and the Role of Surgical Excision of Endometriosis

Ido Sirota, MD MHA FACOG

Course: Medical Optimization for Surgical Management of Endometriosis

AAGL Global Congress · Boston · November 13–16, 2026

1

When excellent excision isn't enough

Chronic Pelvic Pain at Scale

Chronic pelvic pain (CPP) affects nearly **25% of women worldwide**, with a female-to-male ratio around 2:1

Endometriosis as the Leading Cause

About half of reproductive-aged women with CPP report a gynecologic origin — endometriosis is the single most common diagnosis (~23%)

The Persistent Pain Problem

Yet a meaningful subset have **persistent pain after complete, high-quality excision**

The Missing Piece

The missing piece is usually **not on the peritoneum** — it's in overlapping pain conditions and how the nervous system processes pain

2

A shared language: the FIGO-IPPS "R U MOVVING SOMe" system



international, RAND/UCLA Delphi consensus (FIGO + International Pelvic Pain Society), published 2025. Twelve expert contributors to chronic pelvic pain — pragmatic and descriptive, modeled on PALM-COEIN for abnormal uterine bleeding.

Endometriosis lives in the "R." Our job is to ask what else is driving the pain.

3

What are Chronic Overlapping Pain Conditions (COPCs)?

An **NIH term** for the frequent co-occurrence of multiple chronic pain conditions in one individual.

Conditions That Cluster with Endometriosis

- Fibromyalgia
- Irritable bowel syndrome (IBS)
- Chronic fatigue syndrome / ME
- Temporomandibular disorders
- Migraine and other headaches
- Chronic low back pain

Key Insight

Many are **not pelvic** — but they travel together

Shared Drivers

- Central sensitization
- Autonomic dysfunction
- Genetic predisposition
- Psychological distress

4

The common mechanism: nociplastic pain

IASP Definition

Pain arising from **altered nociception** without clear evidence of tissue damage or a lesion of the somatosensory system.

Driven by amplified processing in the central nervous system — **central sensitization** — rather than ongoing peripheral input. Considered the dominant mechanism underlying COPCs.

Think of it as the **volume knob on the nervous system turned up.** The pain is entirely real, but generated and amplified centrally.

Widespread Pain

Beyond the pelvis, diffuse and variable

Allodynia & Hyperalgesia

Amplified response to normal stimuli

Fatigue & Poor Sleep

Non-restorative sleep, cognitive "fog"

Sensory Hypersensitivity

To light, sound, or touch

5

Why this matters in the OR

Excision is a peripheral therapy — it removes the peripheral pain generator. Surgery treats the "R." It does not treat centralized pain.

When nociplastic pain and/or overlapping pain conditions are present, patients show:

Greater Pain Intensity

Higher pain scores and greater disability burden

Poorer Quality of Life

Functional impairment beyond the pelvic domain

Higher Healthcare Utilization

More visits, more procedures, more cost

Decreased Surgical Response

Reduced likelihood of responding to therapies aimed at **peripheral mechanisms — including surgery**

6

Screen for the "SOMe" before you cut

S — Sensitization / Nociplastic
Widespread pain, fatigue, poor sleep, hypersensitivity to light, sound, or touch

O — Overlapping Pain Conditions
IBS, fibromyalgia, migraine, temporomandibular disorders, chronic low back pain, CFS/ME

Me — Mental Health
Anxiety, depression, PTSD, history of abuse or trauma, adverse childhood events — bidirectionally linked with pain

These **modify and intensify** pain; they are rarely the primary generator, so surgery alone will not resolve them.

7

From label to conversation

The system stacks contributors into one working diagnosis, enabling multimodal, patient-centered management. Documenting every driver **reframes "the surgery failed"** as "we treated one contributor of several."



CPP-R CPP-O CPP-OMe

CPP-R
Endometriosis alone — peripheral driver, surgical candidate

CPP-O
Endometriosis + IBS + interstitial cystitis — overlapping conditions identified

CPP-OMe
Add anxiety — centralized phenotype, multimodal plan required

Instead of promising a cure, tell her honestly: excision addresses *this piece*, and here is the plan for the rest.

8

Optimize before, during, and after

1. **Pre-operative Screening** — Screen every CPP patient with R U MOVVING SOMe; flag the SOMe cluster and set realistic expectations
2. **Informed Consent** — Consent explicitly to the centralized component; pair excision with medical optimization and multidisciplinary care
3. **Multimodal Treatment** — Pelvic floor physical therapy, pain psychology, GnRH agonists/antagonists, neuromodulation — address what excision cannot
4. **Surgical Excision** — Still excise the peripheral driver — but **not as a stand-alone cure**
5. **Specialist Referral** — Refer to a pelvic pain specialist when the central phenotype dominates

9

Key takeaways

1. **Excision treats the "R"**
   The peripheral endometriosis generator — necessary, but not sufficient
2. **COPCs and nociplastic pain predict reduced surgical response**
   The S-O-Me tail of R U MOVVING SOMe identifies the centrally-mediated phenotype
3. **Screen every CPP patient pre-operatively**
   Watch the SOMe cluster — it changes your surgical plan and your counseling
4. **Optimize medically and multimodally**
   Set expectations before you operate; medical optimization is what makes surgery worthwhile for the centrally-sensitized patient
5. **Treat the patient, not just the lesion**
   In the spirit of "Empowering Women's Voices" — their pain is real, multifactorial, and deserves more than a scalpel

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Reference & Acknowledgment

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Framework developed by **FIGO** (International Federation of Gynecology and Obstetrics) and the **International Pelvic Pain Society (IPPS)**

The full consensus paper is open access, with the complete category list and supporting evidence.

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Thank you!

Questions are welcome

AAGL GLOBAL CONGRESS BOSTON · NOVEMBER 13–16, 2026

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Medical Management of Endometriosis

Drorit Or, MD, FACOG, MSCP · Mount Sinai West

NOVEMBER 13-16, 2026 · BOSTON · #AAGL26

1

Disclosure

- I have no financial relationships to disclose.

2

Objectives

- Describe the role of medical management in the comprehensive care of endometriosis
- Identify and compare medical management options for endometriosis and associated pain
- Manage menopausal symptoms in women experiencing surgical menopause due to endometriosis surgery

3

Role and Limits of Medical Management

First-line therapy for endometriosis-associated pain (ESHRE, ACOG)

Benefits

- Avoids surgical risks, including postoperative adhesions and scar tissue
- Treats microscopic lesions not visible at surgery
- After surgery: extends pain-free intervals

Limits

- Pain often returns when medication is stopped
- No effect on scar tissue or organ obstruction
- Limited effect on endometriomas
- Does not improve fertility

Surgical excision: recurrence up to 50% at 5 years

4

Indications for Medical Management and for Surgery

MEDICAL MANAGEMENT: 3 SETTINGS

- Empiric treatment of suspected endometriosis (clinical diagnosis), adults and adolescents
- Postoperative suppression to prevent recurrence
- Long-term maintenance after definitive surgery

INDICATIONS FOR SURGERY: 4

- Failure of medical management
- Target organ damage
- Large endometrioma
- Suspected malignancy

INDIVIDUALIZE BY

Pain severity · Fertility goals · Presence of pelvic masses · Disease extent and location · Age · Medication side effects · Cost

5

First-Line: NSAIDs and Combined Hormonal Contraception

NSAIDs

- First-line for mild pain
- Start on day 1 of menses; 1-2 days before if pain is severe
- Do not address disease progression

Combined hormonal contraception

- First-line hormonal therapy
- Continuous, no placebo week
- Risk of DVT and PE

Follow-up at 3-4 months. No improvement: different combination or progestin-only.

6

Progestins

Lower DVT risk than combined contraception · Inexpensive

Contraceptive

- Norethindrone 0.35 mg/day
- Depot medroxyprogesterone acetate
- Etonogestrel implant
- Levonorgestrel IUS 52 mg
- Drospirenone 4 mg/day (Slynd): limited endometriosis data

Non-contraceptive

- Norethindrone acetate 2.5-15 mg/day
- Oral medroxyprogesterone acetate 30-50 mg/day
- Dienogest 2 mg/day

Dienogest is not available alone in the US. Natazia is a combined contraceptive, not approved for endometriosis.

7

GnRH Agonists With Add-Back Therapy

Pituitary downregulation → decrease in estrogen → regression of implants

7-14 days	3-4 weeks	6 months	2-3 months
Initial symptom flare	75% reach menopausal estrogen levels	Leuprolide label; up to 12 months in total, only with add-back	Menses resume after stopping

Agent

- Leuprolide 3.75 mg IM monthly or 11.25 mg every 3 months
- Also nafarelin, goserelin, triptorelin

Add-back therapy

- Norethindrone acetate 5 mg daily (most common)
- Low-dose estrogen and progestin combination

8

GnRH Antagonists

Compared with agonists

- Oral
- Work immediately; no initial flare
- Rapid onset and rapid reversibility
- Dose-dependent suppression: the lower dose preserves some estrogen, with fewer side effects
- Decrease use of addictive pain medications

2 FDA-APPROVED MEDICATIONS

Elagolix/Orilissa

150 mg daily	200 mg twice daily
up to 2 years	up to 6 months

Myfembree

Relugolix 40 mg + estradiol 1 mg + norethindrone acetate 0.5 mg

Daily, up to 2 years; add-back built in

9

Aromatase Inhibitors and Danazol

Aromatase inhibitors

- Not first-line; off label
- Anastrozole 1 mg/day or letrozole 2.5 mg/day
- Combine with a GnRH analogue or combined contraception
- Reserved for failure of first- and second-line therapies

Danazol

- Synthetic androgen
- Mild disease: 200-400 mg/day
- Severe disease: up to 800 mg/day
- Androgenic and metabolic side effects limit use

10

Non-Hormonal and Interventional Options

Complement to medical and surgical therapy for refractory pain

Neuropathic pain medications

- Gabapentin
- Pregabalin
- Tricyclic antidepressants: nortriptyline, amitriptyline

Pelvic floor physical therapy

- Addresses the myofascial component
- Recommended as an adjunct

Targeted nerve blocks

- Superior hypogastric plexus: pelvic visceral pain
- Inferior hypogastric plexus: perineal and genital pain
- Ganglion impar: vulvar, anal, and coccygeal pain

Opioids: extreme caution. Strong opioids are a last resort: risk of dependence and central sensitization.

11

Stepwise Treatment Algorithm

1. **Step 1** NSAIDs + continuous combined contraception or progestins
2. **Step 2** Switch progestin: norethindrone acetate, levonorgestrel IUS
3. **Step 3** GnRH agonist or antagonist with add-back therapy
4. **Step 4** Surgical intervention: excision or ablation
5. **Step 5** Aromatase inhibitor + progestin or combined contraception, for refractory pain after surgery
6. **Step 6** Hysterectomy with bilateral salpingo-oophorectomy (last resort)

At each step: reassess in 3-6 months; multimodal pain approach

12

Medical Treatment After Surgery

RECURRENCE AFTER CONSERVATIVE SURGERY

21.5% within 2 years

40-50% within 5 years

Medical therapy suppresses residual microscopic disease

OPTIONS AFTER SURGERY

- Continuous combined hormonal contraception — First-line
- Progestins: oral, levonorgestrel IUS, implant
- GnRH analogues with add-back therapy
- Aromatase inhibitors and danazol — Refractory cases

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Surgical Menopause in Endometriosis

Abrupt estrogen decline: symptoms more severe and more acute than in natural menopause

Acute symptoms

- Vasomotor symptoms
- Vaginal dryness
- Mood disturbance
- Sleep disruption
- Loss of libido

Without estrogen replacement

- Cardiovascular disease
- Osteoporosis
- Cognitive decline and dementia risk
- Sexual dysfunction and urogenital atrophy

All women under 45: offer HRT to at least age 51 (British Menopause Society guideline)

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HRT After Surgical Menopause: Evidence and Regimen

Evidence

- HRT is first-line for surgical menopause symptoms
- Recurrence: small association, not statistically significant
- Under 50: no increased breast cancer risk (British Menopause Society consensus)

Regimen

Combined estrogen + progestogen, continuous, even after hysterectomy

UNDER AGE 45

High dose

Estradiol 0.1 mg patch + norethindrone acetate 5 mg/day

OVER AGE 45

Lowest dose

Titrate up based on symptoms

Continue at least until age 51

15

Recurrence and Malignant Transformation on HRT

Estrogen-only HRT

Majority of recurrences were on unopposed estrogen

Combined HRT

- Preferred by most specialists
- No increase in malignant transformation at 6-year follow-up

~1%

malignant transformation

Clear cell and endometrioid histology most common

Monitor symptoms; imaging for new pelvic pain or a new pelvic mass

16

HRT Contraindications and Non-Hormonal Options

4 absolute contraindications to HRT

- Known or suspected breast cancer or estrogen-dependent malignancy
- Active or history of DVT or PE, or clotting disease (stroke, MI)
- Undiagnosed abnormal uterine bleeding
- Liver dysfunction or disease

Non-hormonal options for vasomotor symptoms

FDA APPROVED

- Fezolinetant 45 mg daily
- Elinzanetant (Lynkuet) 120 mg daily at bedtime
- Paroxetine salt 7.5 mg/day

Genitourinary syndrome of menopause

- Moisturizers and lubricants
- Vaginal estrogen: cream, ring, or insert
- Minimal systemic absorption

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Key Takeaways

- Medical management is first-line for endometriosis pain; empiric treatment without surgical diagnosis is appropriate
- First-line: combined contraception and progestins. Second-line: GnRH agents
- Medical therapy after surgery reduces recurrence rates
- Surgical menopause: consider HRT to at least age 51
- Combined HRT is preferred over estrogen-only HRT: lower recurrence risk
- Individualize therapy through shared decision-making

Thank you

Drorit Or, MD, FACOG, MSCP · Mount Sinai West

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Recurrence of endometriosis and its control

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1

Goals in managing endometriosis

- Reduce pain
- Increase the pregnancy rate for women who desire to have children
- Delay recurrence for as long as possible

2

The downside of surgical treatment

- Despite proven efficacy, surgery has its perils
  - Invasiveness, morbidity, and rare mortality
  - Recurrence
  - Surgery, in and by itself, can promote lesional development

Long et al. AJOG 2016
Liu et al. Reprod Sci 2016

3

A sword of Damocles

- Recurrence is a formidable problem
- Recurrence rate 24–72% of patients have relapse or require further surgery within 7 years
- 7-year recurrence risk is higher than playing a Russian roulette
- Reoperation → high health care cost
  - Readmission to hospital 4 yrs after surgery: 27%
  - >50% within 10 yrs
  - 27% need ≥3 surgeries
  - Damage to ovarian reserve
  - Increases the risk of
    - Adhesion
    - Premature ovarian failure
    - Organ injury

Evers *et al.*, 1995; Garry, 2004
Shakiba *et al.* 2008; Guo 2009;

4

How to beat the Russian roulette?

- What is the recurrence rate?
- What are risk factors for recurrence?
- How to minimize or remove recurrence risk?
  - Does post-surgery medication reduce the recurrence?
  - Is it necessary to treat all patients after surgery?
- What is the mechanism of recurrence?
- What is the better way to reduce the recurrence risk?
- …

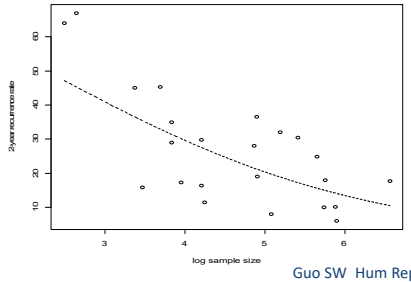
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Recurrence rate

- Reported rates vary greatly
- Sources of variation:
  - Definition of recurrence
    - Ultrasound
    - Return of pain (dysmenorrhea, acylic pelvic pain, etc)
    - Reoperation
  - Type of endometriosis
  - Type of surgery
  - Type of study
  - Sample size
- Some reported rates are utterly useless (“overall recurrence rate”)

6

The relationship between the reported two-year recurrence rate and its corresponding sample size (in log scale).



Guo SW Hum Reprod Update 2009

7

In summary

- Median 2-year recurrence rate is ~19%
- 5-year: 40-50%
- Rule of thumb: ~10% per year

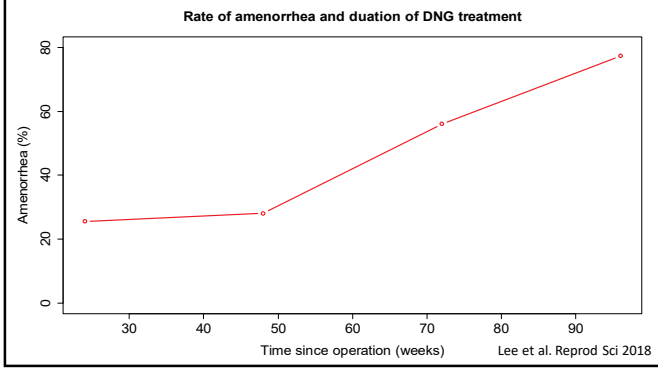
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The changing landscape…

- Dienogest can substantially reduce recurrence rate
- However,
  - Cost (esp. for low-resource countries)
  - Side effects
    - Bone loss
    - Amenorrhea

9

Rate of amenorrhea and duation of DNG treatment



Lee et al. Reprod Sci 2018

10

The changing landscape…

- Dienogest can substantially reduce recurrence rate (~1-2%)
- However,
  - Cost (esp. for low-resource countries)
  - Side effects
    - Bone loss
    - Amenorrhea
  - No reduction in lesion volume in DIE (Leonardo-Pinto et al. EJOGRB 2017)

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Risk factors for recurrence

- Another area of conflicts and confusion
- Sources of conflicts:
  - Type of surgery
  - Definition of recurrence
  - Length of follow-up
  - Subtype of endometriosis
  - Bias in selection
  - Statistical analysis

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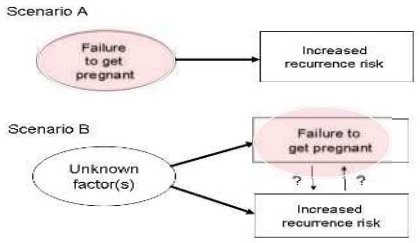
Risk factors

- Somewhat consistently reported
  - rASRM score (but not rASRM stage)
  - Younger age
  - Previous treatment history
- Yet to be clarified
  - pregnancy

Guo, HRU 2009
Koga et al. F&S 2015

13

Possible relationship between pregnancy and recurrence



Guo, HRU 2009

14

Problems with risk factors

- Usually conflicting
- They provide little information on lesional histology, which may be more prognostic
- They may not be particularly specific for a given patient
- Nor do they offer any counter-measures for possible intervention

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Biomarkers of recurrence

- 1st: COX-2 (Yuan et al. F&S 2009)
  - 109 pts with endometrioma: 53 had recurrence by 30 months, 56 did not
- COX-2: plays a pivotal role in inflammation and pain in endometriosis
- COX-2 inhibitors have been reported to be promising to treat endometriosis (recurrence)
- Others
  - PR-B and NF-κB
  - Slit2 and ROBO1

Cobellis et al. EJOGRB 2004
Shen et al. AJOG 2008
Shen et al. AJP 2009

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Histology-based biomarkers of recurrence

- SLIT2, NF-κB, PR-B
- Presence of adhesion
- Sensitivity: 86%
- Specificity: 87%

Shen et al. AJP 2009

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Limitations of biomarkers

- They give no clue on the completeness or thoroughness of surgical removal of endometriotic lesions
- Nor do they offer us any counter-measures for possible intervention

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Lopsided interest in the post-operation medication

- There are a few RCTs, and those few RCTs spanned short time (2-y)
- Dienogest appears to be effective
- GnRHa does not seem to be effective (Vercellini et al. 1999)
- More RCTs are needed

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Causes of recurrence

- Does the new lesion arise from minimal residual lesions (*in situ* growth)?
- Or does it arise from a completely novel location (*de novo* growth)?

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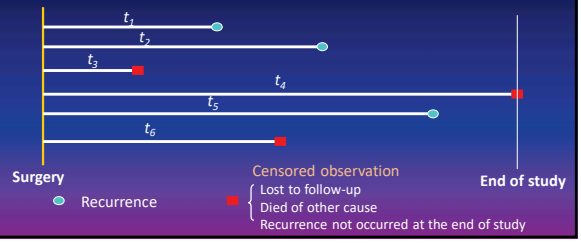
Survival analysis

- Censored data still contain information
- Data analysis should be done using survival analysis methodology

21

Patterns of recurrence

- A quintessential measure: time to recurrence



22

Issues

- What does the recurrence pattern look like?
- What is the hazard function look like?

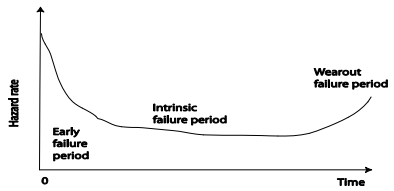
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A useful tool: Hazard function

- Hazard function *h(t):*
  - the rate of probability of recurrence is changing at time *t* given recurrence-free up to time *t*

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Age-specific mortality in humans (Bathtub curve)



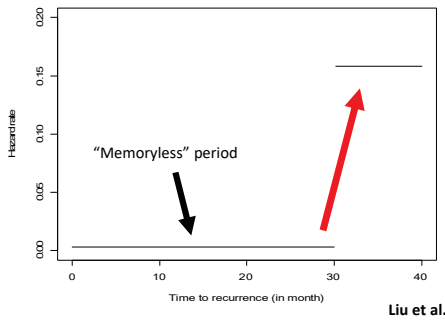
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The only study in town

- Liu et al. Obstet Gynecol 2007
  - Recurrence of either disease or dysmenorrhea is purely *random* or a chance event in the first 30 or so months
  - Recurrence risk swings to a new height after 30th months
    - New phase of recurrence?
    - Or it just take about 30 months to re-establish?
  - The existence of such a period: universal?
  - Length of the period, magnitude of the hazard depend on quality of care?
  - Or mere idiosyncrasies of the patient population?

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Patterns of recurrence of ovarian endometromas



Liu et al. Ob Gyn 2007

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Musing over the recurrence pattern

- The *de novo* foci may be less likely
- Reseeding, reimplantation, re-growth of ectopic endometrium and emergence of symptoms would take longer than 30 months
- Recurring endometriotic lesions could arise from minimal residual lesions (MRLs) undetected or overlooked and thus unremoved during the primary surgery

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Evidence in support for MRLs

- Recurring lesions appear to grow from the residual foci (Nisolle-Pochet *et al.*, 1988)
- Learning curve effect
  - higher recurrence rate in the first 30 cases than later cases (Carmona et al. 2009)
- Recurrent deep lesions are located in the 'same' area of the pelvis involved in the primary surgery (Vagnali et al. 2005)
- Recurring endometrioma are more likely to occur on the treated ovary (Exacoustos *et al.*, 2006)
- Pts w/ +resection margins after surgery have a 6-fold increase in recurrence risk than those without (Nirgianakis *et al.*, 2014)
- Pts received the full-thickness disc excision or superficial excision had a total recurrence rate 3-fold higher than those who undergone bowel resection (Meuleman *et al.*, 2011)
- More extensive surgery leaves fewer residual lesions and reduces the recurrence risk (Roman et al. 2018)
- A 15% chance of pain persistence and 3–5% risk of pain worsening or new symptom development after hysterectomy (Vercellini *et al.*, 2009)

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Surgery is a double-edged sword

- Surgery can inflict trauma to the body
- Surgery can accelerate lesional development
  - Through the activation of adrenergic signaling and adrenergic receptor β2 in lesions
  - β-blockers can abolish the promotional effect of surgery
- Surgical history is a risk factor for endometriosis
  - OR=3.6 (1.1-12.3)

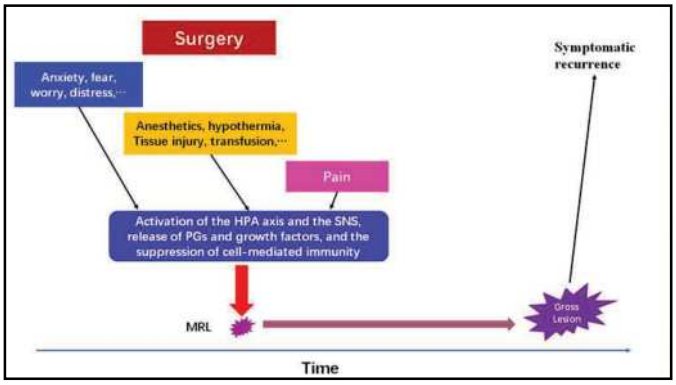
Long et al. AJOG 2016
Liu et al. Reprod Sci 2016

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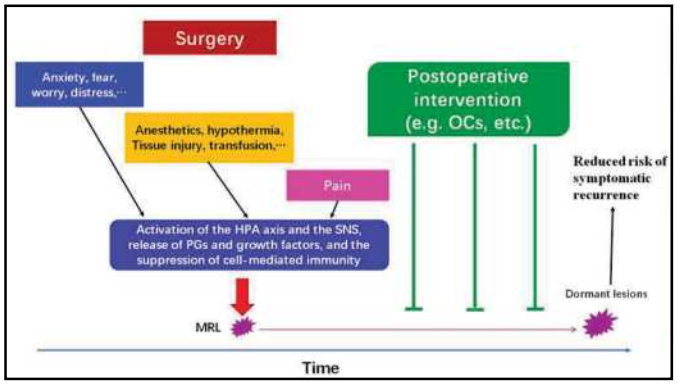
Peri-operative period: A critical time window for recurrence

- Surgical stress can induce the release of PGE_2 and adrenoline/noradrenoline
- Pain, anxiety, fear, worries can also activate the HPA axis
- Adrenoline/noradrenoline and PGE_2 can suppress cell-mediated immunity

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Shifting focus

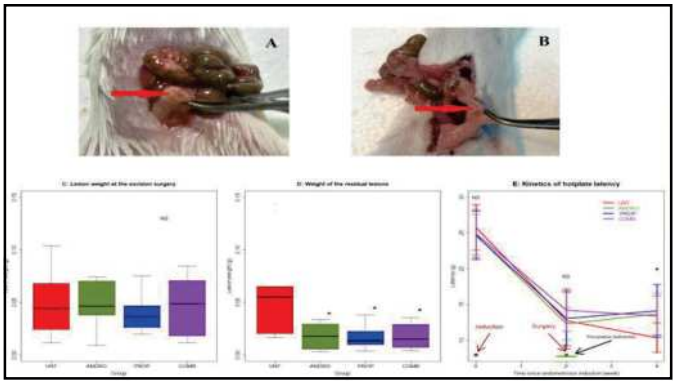
- Would peri-operative intervention reduce the risk of recurrence?

34

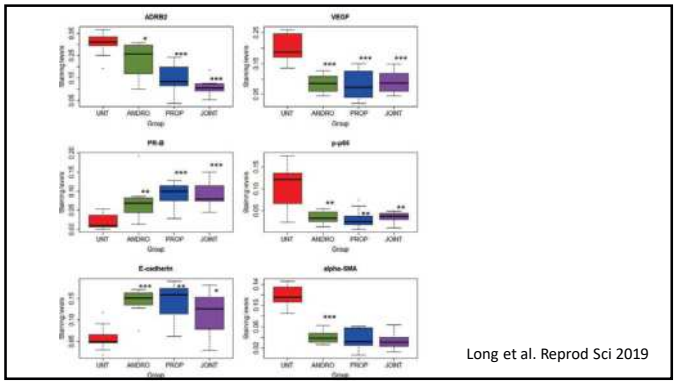
Perioperative intervention for incomplete excision

- Mouse experiment (incomplete excision)
- 4 groups
  - Untreated
  - Andrographolide (NF-κB inhibitor)
  - Beta-blocker (propranolol)
  - Combined
- Incomplete excision of endometriotic lesions

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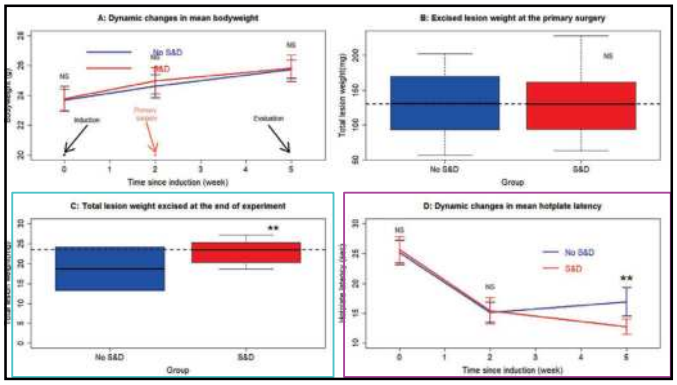
Long et al. Reprod Sci 2019

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What about incomplete excision and/or spillage and dissemination?

- Establishing a spillage and dissemination model
  - All lesions were surgically removed when lesions were fully developed
  - A portion of excised lesion tissues was minced to fragments, and a small amount was subsequently injected intraoperatively

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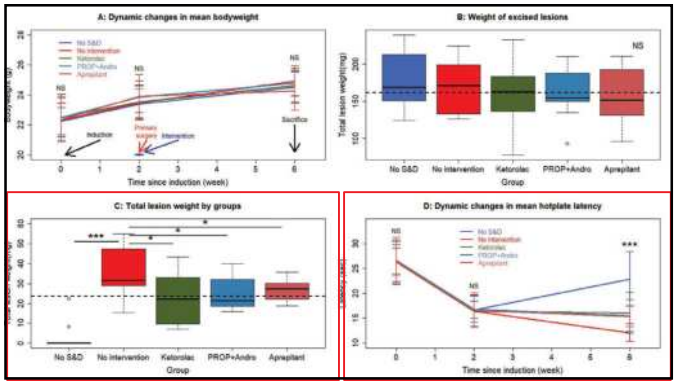


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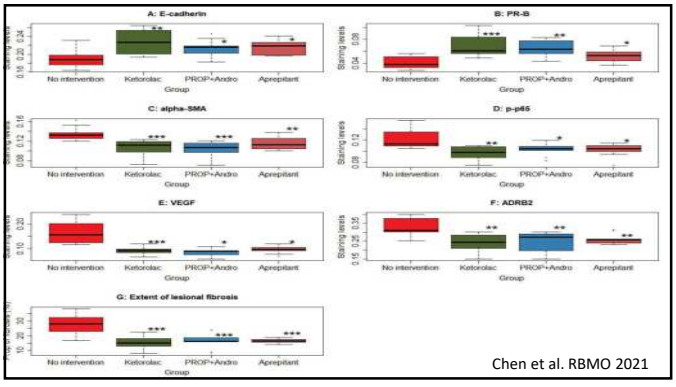
What about incomplete excision and/or spillage and dissemination?

- Mouse experiment (spillage and dissemination)
- 6 groups
  - No S&D
  - S&D but no intervention
  - Andrographolide + Beta-blocker (propranolol)
  - Ketorolac (COX1/2 inhibitor)
  - Aprepitant (NK1R inhibitor)
- Re-evaluation after 2 weeks

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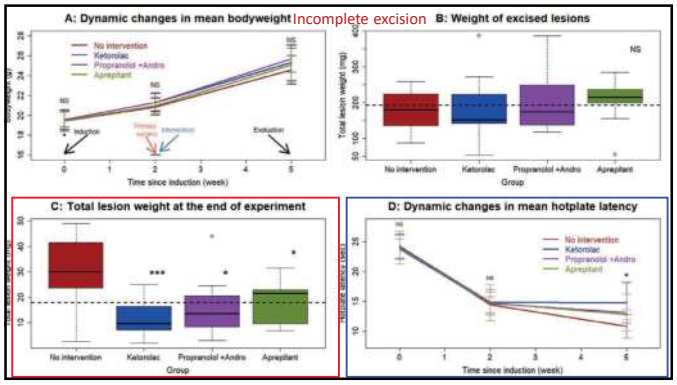


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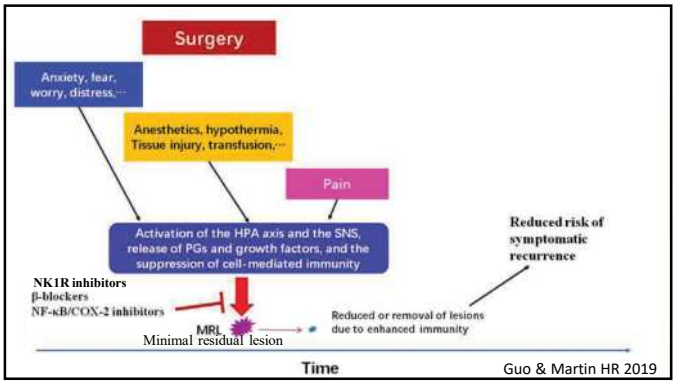


Chen et al. RBMO 2021

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Peri-operative period is a critical yet neglected time window for controlling recurrence

- Compared with a long post-op period, peri-op period is short
- β-blockers are generally safe and inexpensive
- So are COX-2, NF-κB, and NK1R inhibitors
- If works, it should be much more economical than post-op intervention

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Conclusions

- Reducing recurrence risk is an unmet medical need
- Nearly all efforts have been focused on post-op intervention
- Pre- and Peri-operative period is a critical yet neglected time window that deserves more attention
  - A possible way to beat the Russian roulette
- If works it should be more economical and have less side-effects
- Pilot studies or even clinical trials can be done
- Mechanistic work is still needed

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- .
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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/