Surgery for endometriosis: beyond medical therapies

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Endometriosis-associated pelvic pain and subfertility may be managed medically in many cases; however, the surgical management of this insidious disease remains a necessary part of the treatment algorithm. Laparoscopy for diagnosis alone is rarely indicated with the advancements in preoperative imaging. When surgery is performed, the ideal goal would be a therapeutic and effective surgical intervention based on the preoperative evaluation. Surgery for women with pain due to endometriosis may be indicated in patients who cannot or do not wish to take medical therapies; acute surgical or pain events; deep endometriosis; during concomitant management of other gynecologic disorders; and patients seeking fertility with pain. The role of surgery for endometriosis-related subfertility may be considered in those with hydrosalpinges undergoing IVF; management of ovarian endometriomas in specific circumstances; and when a patient requests surgery as an alternative to assisted reproductive technology (ART). Surgery for ovarian endometriomas requires special attention due to the risk of potential harm on future fertility. Finally, a combined approach of surgery followed by postoperative medical therapy offers the best long-term outcomes for recurrence of disease and symptoms. A patient-centered approach and a goal-oriented approach are essential when determining the options for care in this population. (Fertil Steril® 2017;■:■–■. ©2017 by American Society for Reproductive Medicine.)

Key Words: Endometriosis, laparoscopy, infertility, pelvic pain, ovarian endometrioma

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WHEN IS SURGERY INDICATED FOR THE TREATMENT OF ENDOMETRIOSIS?

The management of endometriosis-associated pelvic pain and subfertility has seen and will continue to see advancements in care options available for providers and their patients. The medical and surgical management schism is largely an issue of the past and most recognize the importance of an integrated approach for patients presenting with endometriosis-related health issues. However, there are circumstances in which surgical intervention is required, preferred, or requested. The aim of this article is to describe the role of surgery in endometriosis-related care.

SURGERY FOR DIAGNOSIS

Diagnostic Laparoscopy Should be Replaced with a "See and Treat" Approach

Surgery has been heralded as the gold standard for the diagnosis of endometriosis as it provides a histologic evaluation of excised specimens. This is further supported by the lack of a definitive noninvasive test for endometriosis despite the ongoing work being conducted globally (1). As a result, should diagnostic laparoscopy remain the optimal route for diagnosis?

Laparoscopy for diagnostic purposes alone has several limitations that should challenge this antiquated practice. Although one cannot argue the value of having a histologic tissue diagnosis, the following scenarios challenge routine diagnostic laparoscopy.

Unrecognized endometriosis lesions. Lesions with an atypical appearance may not be recognized by the surgeon or may be very small/subtle and thus preclude pathologic specimen retrieval. Deep lesions below adhesions, which may be attributed to pelvic inflammation from previous surgery or infection, may be missed. Finally, adjacent organ involvement including intestinal, urinary tract, and deeper nerve involvement may be missed by a laparoscopic evaluation.

Excision specimens. Excision of peritoneal or deeper lesions at the time of diagnostic laparoscopy may not always be performed or possible. There are many reasons for this including specimens destroyed by crush or thermal injury at attempted removal and lack of skill set to excise relevant disease areas.

Surgical risks. The complications from diagnostic and operative gynecologic laparoscopy overall may be considered

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relatively low, but they are still an important consideration in deciding on the role of surgery (2). The experience of the surgeon, the patient's history and comorbidities, and the extent of disease are all factors that determine the risk of complications.

To optimize patient outcomes and to minimize exposure to multiple surgeries, at present the role of surgery would ideally be reserved for diagnostic confirmation AND simultaneous treatment. The benefits of a "see and treat" approach offer women the opportunity to confirm the pathology and address the underlying condition all during one anesthesia. Ideally the one "perfect" surgery would also occur in the appropriate surgical setting with an experienced surgical team with the right equipment, time, and assistance for the level of disease expected. Although there are always going to be exceptions to the ideal setting (i.e., unexpected findings), which would result in halting a procedure and further planning, health care providers should strive for optimal surgical management based on a robust preoperative evaluation.

At present, there is a greater focus on advanced imaging for endometriosis and the management of deep and ovarian endometriosis has seen a fundamental shift in practice (3, 4). The use of imaging to help diagnose and plan surgical intervention is critical to the management of women with signs and symptoms suggestive of endometriosis.

SURGERY IN ENDOMETRIOSIS-ASSOCIATED PELVIC PAIN: WHEN IS IT NECESSARY?

The role of surgery in pelvic pain requires careful consideration and should be individualized based on the patient's presenting complaint and findings on evaluation. Chronic pain is complex and often involves multiple factors beyond simply a diagnosis of endometriosis (5). Abnormal exaggerated pain responses from the central nervous system (central sensitization) further complicate the management of the patient with pain. Surgery for endometriosis may be an appropriate intervention, but it should ideally only be used when its therapeutic benefit outweighs the risks. Patient-centered care would prioritize pain reduction and improvement of quality of life versus optimal "debulking" of disease that may not offer those benefits or may lead to harm. For the present discussion we will consider endometriosis-associated pelvic pain (EAPP) as pain symptoms attributed to endometriosis in the absence of other causes or central sensitization.

A general statement of the benefits of surgery for EAPP at present is very difficult to define due to the limited evidence available through randomized control trials, the varying disease presentations (i.e., deep, ovarian, extrapelvic, and superficial), and the differing surgical approaches and skill sets (6, 7). Based on the Cochrane review by Duffy et al. (7), "moderate quality evidence" suggests that the surgical management of mild and moderate endometriosis reduces overall pain, yet there were limited comparisons to medical therapies and poor reporting on adverse events. However, as Hirsch et al. (8) point out in their 2016 systematic review, there is significant variation in outcome reporting in endometriosis trials prohibiting larger generalization of outcomes. Becker et al. (9), on behalf of the World Endometriosis Research Foundation collaborative, have published guidance on basic data that should be gathered for surgical endometriosis research. Despite the need for clarity in the literature and further higher quality evidence, surgery continues to have a significant role in managing EAPP.

SURGERY MAY BE CONSIDERED IN THE FOLLOWING SCENARIOS

Patients Who Decline, Do Not Respond to, Do Not Tolerate, or Have Contraindications to Medical Therapy

Medical management for EAPP has its benefits but unfortunately there is no single medical treatment that will work in all patients (10). At present, medical management of endometriosis is restricted to hormonal suppression and once medications are discontinued, in the reproductive aged woman, the pain symptoms will return (6, 11). Medical treatment itself has limitations due to an incomplete response or intolerable side effects such as irregular menstrual bleeding, headache, or mood changes (12). Therefore, surgery may be required in women who decline long-term therapy, experience significant side effects, or have contraindications to medical therapy.

Another important aspect to consider for surgical interventions for EAPP is patient choice. Patients may elect to undergo surgical management for many reasons such as declining medical options, requesting surgical confirmation, or perceived failure of therapy. This is an important consideration that many surgeons will face.

It is important to counsel patients regarding the benefits and limitations of surgical intervention. Although there is an overall improvement in pain symptoms, there is a risk of pain recurrence or persistence. As a result, repeat surgical intervention, in women who decline or cannot use medical therapies, may be necessary. A 2010 review by Berlanda et al. (13) suggested that repeat surgery may have the same results as primary surgery for EAPP; however, with up to 50% recurrence of pain at 5 years, there may be many women in need of repeat intervention.

Acute Surgical or Pain Event

An urgent admission for severe pain in women of reproductive age is part and parcel of gynecology emergency care. When there is not a clear diagnosis of the underlying etiology, a presumed adnexal event (i.e., torsion), or ruptured hemorrhagic ovarian cyst in an unstable patient, surgery may be indicated. At times the underlying finding may be endometriosis related (ruptured ovarian endometrioma) or endometriosis may be found concomitantly. In these circumstances it is important to consider documenting the findings, managing the issue at the time, and planning for elective care whether it be long-term medical or surgery in the future.