

## Surgical Management of Endometriosis

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Endometriosis is a benign disease defined by the presence of endometrial glands and stroma outside of the uterus and is associated with both pelvic pain and infertility. The ectopic endometrial tissue is usually located in the pelvis but can appear anywhere in the body. Endometrioma is an ovarian mass arising from the growth of ectopic endometrial tissue within the ovary forming a pseudocyst. It is commonly seen in women of reproductive age who may wish to preserve their ovarian function. Surgical treatment is subjected to a high recurrence rate and its employment may cause a significant reduction in ovarian reserve that causes a disaster for younger women who undergo assisted conception. Laparoscopic excision of ovarian endometrioma prior to IVF does not offer any additional benefit over expectant management (1). Endometriosis should only be treated when either pain or infertility is a presenting symptom. As an incidental finding at the time of surgery, endometriosis does not require any medical or surgical treatment. The surgical management of endometriosis involves careful consideration of the indications for surgery, preoperative evaluation, surgical techniques, surgeon experience, and ancillary techniques and procedures.

Surgical management of endometriosis is indicated in the following groups.

1. Patients with pelvic pain
  - a. who do not respond to decline, or have contraindications to medical therapy
  - b. who have an acute adnexal event (adnexal torsion or ovarian cyst rupture)
  - c. who have severe invasive disease involving the bowel, bladder, ureters, or pelvic nerves
2. Patients who have or are suspected to have an ovarian endometrioma
  - a. Patients for whom the uncertainty of the diagnosis affects management (as with chronic pelvic pain)

- b. Patients with infertility and associated factors (i.e. pain or a pelvic mass)

A complete preoperative evaluation will assist for planning the surgical approach, the need for additional procedures and consultations. The value of a serum CA-125 test in preoperative detection of endometriosis is limited. Therefore, the test is not recommended routinely before the surgery but may be performed as part of the evaluation of an undiagnosed adnexal mass. Pelvic ultrasonography, particularly transvaginal is recommended when an adnexal mass is suspected from physical examination. Transrectal sonography, colonoscopy, barium enema, and MRI may also be useful to detect deeply infiltrating endometriosis of the bowel and rectovaginal septum in patients with dyschezia and in those with deep dyspareunia with nodularity on examination. Cystoscopy should be performed if there are cyclic bladder symptoms such as hematuria. Risks associated with surgery should be thoroughly discussed with the patient, and informed consent should be obtained and documented. Surgery may be either "conservative" or "definitive." The goals of conservative surgical management are restoring normal anatomy and relieving pain. This approach is most often applied for women of reproductive age who wish to conceive in the future or avoid induction of menopause at an early age. Definitive surgery involves bilateral oophorectomy to induce menopause and may include removal of the uterus and fallopian tubes and, ideally, excision of all visible endometriotic nodules and lesions. Women who have significant pain and symptoms despite the conservative treatment, and do not desire future pregnancies and have severe disease, or undergo hysterectomy due to other pelvic conditions, such as fibroids or menorrhagia should be considered.

Deeply infiltrating endometriosis refers to lesions that penetrate 5 mm or more. The lesions are often multifo-

### Implication for health policy/practice/research/medical education:

Endometrioma is an ovarian mass arising from the growth of ectopic endometrial tissue within the ovary forming a pseudocyst. It is commonly seen in women of reproductive age who may wish to preserve their ovarian function.

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cal and deeper than what is appreciated by visualization alone (2). Excision of these lesions is likely to be of beneficial in terms of pain relief compared to excision of superficial disease. Surgery in cases of rectovaginal infiltration, with involvement of the pelvic lateral side wall or bowel, requires a multidisciplinary approach. When deeply infiltrating endometriosis is diagnosed only at the time of diagnostic laparoscopy, it is preferable to avoid immediate excision. One should first obtain informed consent and conduct a proper preoperative evaluation owing to the complex nature of the disease. Laparoscopic uterosacral nerve ablation has not been shown to be effective for chronic pain relief in a large randomized control trial (3). Ovarian endometriomas indicates severe disease and presents a surgical management challenge (4). It is important to consider the patient's desire for fertility in order to determine the level of intervention required to preserve the ovaries and their function. Surgical options include excision of the cyst wall or drainage and coagulation of the cyst bed. A recent Cochrane review based on only two RCTs (5, 6) suggests that laparoscopic excision provides more benefits than simple laparoscopic ablation of ovarian endometriomas for pelvic pain. Excision resulted in reduced rates of endometrioma recurrence, dysmenorrhea, dyspareunia, non-menstrual pelvic pain, and requirement for further surgery. The cumulative pregnancy rate was higher in women who underwent cystectomy. Although there are benefits to laparoscopic excision of ovarian endometriomas, this technique has been associated with inadvertent removal of normal ovarian tissue. (7). Great care must be exercised to preserve ovarian tissue during the excision. After assessing the risks of inadvertent removal of normal ovarian tissue and the benefits of cyst excision, the decision to treat endometriomas surgically must be made based on the clinical presentation and surgeon preferences. It is reasonable to suggest excision of larger endometriomas (> 3 cm in diameter) in the presence of pelvic pain but simple drainage and ablation or expectant management of smaller cysts. Ovarian endometriomas recur in up to 30% of patients after laparoscopic excision. Postoperative hormonal suppression has been shown to result in a lower recurrence rate and better management of symptoms (8, 9). In patients not seeking pregnancy, CHC therapy (cyclic or continuous) should be considered after surgery. Since the risk of malignant disease is low and there is no evidence of improved fertility as an outcome, the decision about repeating the surgery should be based on symptoms and size of the cyst: the greater the pain or the size, the more likely the need for a repeated procedure. In conclusion, the recommendations include:

An asymptomatic patient with an incidental finding of endometriosis at the time of surgery does not require any medical or surgical intervention.

Surgical management in women with endometriosis related pain should be reserved for those in whom medical treatment has failed.

For women with endometriomas, excision rather than drainage or fulguration provides better pain relief, a reduced recurrence rate, and a histopathological diagnosis.

It's not recommended to perform laparoscopy in pa-

tients who desire fertility and have one or more following criteria:

Endometriomas smaller than 3 cm in diameter

Bilateral or multicystic endometriomas

Central endometriomas

Age of 35 or more

History of previous laparoscopic surgery for endometriosis

In such cases, the decision about the treatment strategies should be made by an infertility expert, and the surgery must be performed by an infertility professional laparoscopist. In patients not seeking pregnancy, CHCs (cyclic or continuous) should be considered after surgical management of ovarian endometriomas (10-12).

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## References

1. Le T, Giede C, Salem S, Lefebvre G, Rosen B, Bentley J, et al. Initial evaluation and referral guidelines for management of pelvic/ovarian masses. *J Obstet Gynaecol Can.* 2009;**31**(7):668-80.
2. Cornillie FJ, Oosterlynck D, Lauweryns JM, Koninckx PR. Deeply infiltrating pelvic endometriosis: histology and clinical significance. *Fertil Steril.* 1990;**53**(6):978-83.
3. Daniels J, Gray R, Hills RK, Latthe P, Buckley L, Gupta J, et al. Laparoscopic uterosacral nerve ablation for alleviating chronic pelvic pain: a randomized controlled trial. *JAMA.* 2009;**302**(9):955-61.
4. Chapron C, Pietin-Vialle C, Borghese B, Davy C, Foulot H, Chopin N. Associated ovarian endometrioma is a marker for greater severity of deeply infiltrating endometriosis. *Fertil Steril.* 2009;**92**(2):453-7.
5. Alborzi S, Momtahan M, Parsanezhad ME, Dehbashi S, Zolghadri J. A prospective, randomized study comparing laparoscopic ovarian cystectomy versus fenestration and coagulation in patients with endometriomas. *Fertil Steril.* 2004;**82**(6):1633-7.
6. Beretta P, Franchi M, Ghezzi F, Busacca M, Zupi E, Bolis P. Randomized clinical trial of two laparoscopic treatments of endometriomas: cystectomy versus drainage and coagulation. *Fertil Steril.* 1998;**70**(6):1176-80.
7. Abbott J, Hawe J, Hunter D, Holmes M, Finn P, Garry R. Laparoscopic excision of endometriosis: a randomized, placebo-controlled trial. *Fertil Steril.* 2004;**82**(4):878-84.
8. Matsuzaki S, Houille C, Darcha C, Pouly JL, Mage G, Canis M. Analysis of risk factors for the removal of normal ovarian tissue during laparoscopic cystectomy for ovarian endometriosis. *Hum Reprod.* 2009;**24**(6):1402-6.
9. Seracchioli R, Mabrouk M, Manuzzi L, Vicenzi C, Frasca C, Elmakky A, et al. Post-operative use of oral contraceptive pills for prevention of anatomical relapse or symptom-recurrence after conservative surgery for endometriosis. *Hum Reprod.* 2009;**24**(11):2729-35.
10. ESHRE guidelines. Reproductive Healthcare Ltd, Elsevier Ltd; 2010.
11. Canadian guidelines. Reproductive Healthcare Ltd, Elsevier Ltd; 2010..
12. Seracchioli R, Mabrouk M, Frasca C, Manuzzi L, Savelli L, Venturoli S. Long-term oral contraceptive pills and postoperative pain management after laparoscopic excision of ovarian endometrioma: a randomized controlled trial. *Fertil Steril.* 2010;**94**(2):464-71.