
بسم الله الرحمن الرحيم

DR. FATEMEH TABATABAEI

FELLOWSHIP OF MINIMALLY INVASIVE GYNECOLOGIC SURGERIES

TABRIZ UNIVERSITY OF MEDICAL SCIENCES, TABRIZ, IRAN

Management of Endometrioma

DEFINITION

- An ovarian endometrioma is a cystic mass arising from ectopic endometrial tissue within the ovary.
- It contains thick, brown, tar-like fluid, which may be referred to as a "chocolate cyst."
- Endometriomas are often densely adherent to surrounding structures, such as the peritoneum, fallopian tubes, and bowel.

THE GOALS OF ENDOMETRIOMA TREATMENT

- To relieve symptoms (eg, pain or mass effect),
- Prevent complications related to the adnexal mass (eg, rupture or torsion),
- Exclude malignancy(clear cell and endometrioid) which present with atypical appearance on imaging studies or enlarging size.
- Improve subfertility, and
- Preserve ovarian function.

TREATMENT OF SUBFERTILITY WITH ENDOMETRIOMA RESECTION

- **Excision of endometriomas improves spontaneous pregnancy rates in subfertile women but has no impact when advanced reproductive technologies are employed.**
- **Women undergoing ART should consider endometrioma resection only if they are having symptoms (eg, pain or mass) or to exclude malignancy.**

ENDOMETRIOMA EFFECT ON OVARIAN FUNCTION

- **While endometriomas themselves do not appear to diminish ovarian reserve, surgery to remove them is associated with reduced ovarian reserve as measured by (AMH) levels.**
- **While AMH level does not predict the probability of natural conception, it does predict live birth following IVF.**
- **There is a greater loss of ovarian function in females undergoing repeat surgery compared with those undergoing primary endometrioma resection.**

SURGERY IS USUALLY PROVIDED TO PATIENTS WITH THESE CHARACTERISTICS:

- -Young patients (<35y)
- -Short duration of infertility,
- -Adequate ovarian reserve (AMH > 2.5)
- -Unilateral and singular endometrioma,
- -Absence of associated factors for infertility,(male factor,…)
- -No previous history of surgery for endometriosis.

TREATMENT OPTIONS

- **Surgical removal (ie, cystectomy),**
- **Fenestration, drainage, and coagulation of cyst wall**
- **Sclerotherapy:**
  - **It can be a treatment option in patients with solitary recurrence of unilateral, single endometrioma and patients who have endometrioma without DIE.**
- **Plasma energy ablation**
- **Aspiration of the cyst content: not recommended**

CYSTECTOMY TECHNIQUE:

- **Mobilize the ovary and drain the cyst,**
- **Identify the cleavage plane, (either on the edge of the cyst, opening or a central incision) the incision should be away from the blood vessels in the hilum/meso-ovarium.**
- **Use hydro-dissection to aid dissection and identification of the cyst wall, (saline or vasopressin) (0.1–1 unit/ml)**
- **Apply traction and counter-traction by atraumatic devices.**
- **Use bipolar coagulation, suturing, or intra-ovarian haemostatic sealant agents to achieve hemostasis.**
- **Decrease in the AMH level (up to 40% decrease)**

FENESTRATION, DRAINAGE, AND COAGULATION OF CYST WALL

- Fenestrate the cyst walls and aspirate content,
- Inspect the interior of the cyst wall.
- Take a 1.5*1.5 cm biopsy.
- Coagulate the inner lining with bipolar forceps.
- Use 25–40 W setting.
- Start at a lower power setting and adjust it depending on the effectiveness of coagulation achieved.
- -Use very short coagulation times to minimize ovarian tissue damage

SCLEROTHERAPY:

- Consider all the preventive measures to avoid infection. (at the time of ovum pick up)
- Sclerotherapy is done by TVUS-guided puncture needles.
- Content of endometrioma is aspirated and it is washed with 5 times of its volume with normal saline 0.9%, then once with ethanol 96%, and at the end, 80% of cyst volume ethanol injected in the cyst and retained.
- Send aspirated chocolate material for cytological evaluation.

- As cystectomy of endometriomas can be quite difficult, we discuss the potential need for oophorectomy with all women planning surgery.
- If there is extensive scarring around the ovary, the patient may benefit from an "en bloc" dissection of the ovary and surrounding tissue to reduce the risk of leaving behind a small piece of ovary.
- This dissection may necessitate opening the retroperitoneum, identifying and isolating the ureter, and ligating the infundibulopelvic ligament near the pelvic brim to avoid operating near the diseased tissue.
- Frozen section is performed in cases with suspicious or unusual morphology

OUR APPROACH (UP TO DATE)

- For women with known endometriosis and a symptomatic or suspected endometrioma, we suggest cystectomy, preferably by the laparoscopic route.
- We perform frozen section evaluation in cases with suspicious or unusual morphology, either by ultrasound or direct visualization at the time of surgery.
- After surgical resection, we recommend long-term treatment with an estrogen-progestin contraceptive to prevent endometrioma recurrence.

OUR APPROACH (UP TO DATE)

- In contrast, we suggest observation of small (generally less than 5 cm) and asymptomatic cysts that have the imaging-based characteristics of an endometrioma, in agreement with society recommendations.

ASYMPTOMATIC WITHOUT ANY DESIRE FOR PREGNANCY (ENDO GUIDE)

- Medical therapy (continues OCP or Progesterone± NSAIDs) +serial sonography, CA125 and AMH level (every 6 months)
- Informed consent (1% risk of malignancy)
- Operation is recommended if OMAs >3cm (may choose oophorectomy in>45 years old lady)
- Advancing age (≥ 45 years) and the size of endometriomas (≥ 8 cm) were independent predictors of development of ovarian cancer among women with ovarian endometrioma and require surgical excision.
- The rapid growth of an endometrioma and the presence of mural nodules were the most reliable predictors of malignancy which require surgical excision.

POSTOPERATIVE MANAGEMENT

- Women surgically treated for symptoms should be treated postoperatively to prevent recurrence, unless pregnancy is being attempte
- Oral contraceptives
- GnRH agonists and antagonists
- Levonorgestrel-releasing intrauterine device (IUD)

ORAL CONTRACEPTIVES

- Long-term use (greater than six months) of oral contraceptives (OCs) reduces the risk of endometrioma recurrence and the frequency and severity of dysmenorrhea.
- Continuous OC use was associated with a more but statistically non-significant reduction in endometrioma recurrence (risk ratio 0.54, 95% CI 0.28-1.05, p = 0.7).
- Thus, while postoperative treatment with either a cyclic or continuous OC regimen is reasonable, continuous-dose OC regimens may provide some additional benefit.
- Combined therapy with estrogen and progestin is preferred to progestin treatment alone.

GNRH AGONISTS AND ANTAGONISTS

- Both gonadotropin-releasing hormone (GnRH) agonist and antagonist therapy can be used for postoperative suppressive therapy.
- One limitation is that GnRH agonists are not approved for extended use by the US Food and Drug Administration (6 to 24 months of use, depending on the drug and concomitant use of add-back therapy).
- For most women, there is no demonstrable advantage of long-term GnRH plus add-back over OCs alone.
- Hence, cost and ease of treatment favor OC long-term management for women who are candidates for combined OCs.

GNRH ANTAGONIST:

- **Cetrorelix:**
- **3 mg once a week over 8 weeks could be a feasible medical treatment for endometriosis associated pain.**
- **Elagolix:**
- **Approved for the management of moderate to severe pain associated with endometriosis.**
- **Dose dependent (150 mg/day -200mg twice /day)**
- **Add-back therapy should be added , similar to using GnRH agonists.**

PROGESTINS

- **Dienogest was effective when used for prolonged durations up to 52 weeks with tolerable side effects. In a randomized trial, immediate postoperative insertion of LNG-IUS was associated with less recurrence of sever dysmenorrhea compared with surgery alone at the end of 1 year of follow-up with greater patient satisfaction.**
- **DMPA is associated with bone loss,**
- **NETA can lead to a reduction in HDL and significant increases in LDL and TG.**

Other medications:

- **Danazole:**
- **Gestrinone:**
- **Aromatase inhibitors (AIs)**
  - **1 mg daily for anastrazole,**
  - **2.5 mg daily for letrozole.**
- **SPRM: (Mifepristone, Asoprisnil, Ulipristal acetate, Tanaproget)**
- **SERM: (Raloxifine, Bazedoxifene, Chloroindazole, Oxabicycloheptene)**

RECURRENCE

- After surgical removal, endometrioma recurrence has been reported in approximately 25 percent of women.
- Risk factors for endometrioma recurrence included removal of a cyst >8 cm, younger age (<25 year) and preoperative cyst rupture.
- Recurrent endometriomas should be evaluated to exclude malignancy.(it is difficult to distinguish from a malignancy)
- Repeat cystectomy may be more damaging to the ovary than initial cystectomy.
- In repeat surgery, cyst wall specimen was thicker and contained more normal ovarian tissue in the recurrent endometrioma group as compared with the primary endometrioma resection group.

SURGICAL TECHNIQUE FOR PREVENTION OF RECURRENCE

- **When surgery is indicated in women with an endometrioma, clinicians should perform ovarian cystectomy, instead of drainage and electrocoagulation, for the secondary prevention of endometriosis-associated dysmenorrhea, dyspareunia, and non-menstrual pelvic pain.**
- **However, the risk of reduced ovarian reserve should be taken into account.**

MEDICAL VERSUS SURGICAL TREATMENT FOR ENDOMETRIOSIS (ESHRE 2021, GDG)

- **The GDG recommends that clinicians take a shared decision-making approach and take individual preferences, side effects, individual efficacy, costs, and availability into consideration when choosing between hormonal and surgical treatments for endometriosis-associated pain. (in all subgroups of women with superficial, deep endometriosis or endometrioma)**

ENDOMETRIOMA SURGERY BEFORE ART

- **We did not find any RCTs comparing fertility outcomes after surgery for endometrioma in comparison with expectant management.**

CONSERVATIVE THERAPY, (SURGERY AND ART IS NOT THE FIRST CHOICE)

- **If we want to start hormonal treatment without previous tissue diagnosis, the patient should be aware of the estimated 1% risk of ovarian cancer. Informed consent should be taken and fallow up with TVS or TRS, AMH level and CA125 every 4-6 months is recommended.**
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PREVALENCE OF ENDOMETRIOSIS IN WOMEN WITH OVARIAN CANCER:

- -39.2% (198/505) for clear cell,
- -21.2% (147/694) for endometrioid malignancies,
- -3.3% (39/1173) for serous type,
- -3.0% (13/436) for mucinous type ovarian cancer.
- How ever, the overall risk of ovarian cancer amongst women with endometriosis remains low.

RISK EVALUATION

- Use of HE4 and CA125 together had the highest accuracy (94.0%) and sensitivity (78.6%) for the differential diagnosis of ovarian cancer from ovarian endometriosis.
- Endometriosis is associated with the early-stage and low-grade disease.
- Endometriosis may not affect disease progression after the onset of ovarian cancer.
- Low serum levels of HE4 and high serum levels of CA125 are important indicators in confirming the benign nature of endometrioma.

SERUM BIOMARKERS

- On the other hand, there was a false positive high ROMA index in 15% of the patients with endometrioma, indicating that it is important to be careful to interpret these markers in patients with typical sonographic appearance of endometrioma.
- Moreover, preventive screening with serum biomarkers such as CA125 for malignant transformation of endometrioma is not currently recommended.

PREOPERATIVE MEDICAL TREATMENT

- It is not recommended to prescribe preoperative hormonal treatment to improve the immediate outcome of surgery for pain in women with endometriosis.
- The GDG acknowledges that in clinical practice, surgeons prescribe preoperative medical treatment with GnRH agonists as this can facilitate surgery due to reduced inflammation, vascularisation of endometriosis lesions and adhesions. (according some recommendations)
- However, there are no controlled studies supporting this.
- From a patient perspective, medical treatment should be offered before surgery to women with painful symptoms in the waiting period before the surgery can be performed, with the purpose of reducing pain before, not after, surgery.

POSTOPERATIVE MEDICAL TREATMENT

- **Women may be offered postoperative hormonal treatment to improve the immediate outcome of surgery for pain in women with endometriosis.**
- **The interventions included were GnRH agonists, danazol, letrozole, OCP, and progestogens.**

ESHRE GUIDE 2021

- When performing surgery in women with ovarian endometrioma, clinicians should perform cystectomy instead of drainage and coagulation, as cystectomy reduces recurrence of endometrioma and endometriosis-associated pain.
- When performing surgery for ovarian endometrioma, specific caution should be used to minimize ovarian damage.

Thank you for your attention