Treatment of Endometrioma

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- 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.

TREATMENT GOALS

- The goals of endometrioma treatment are:

- To relieve symptoms (eg, pain or mass),

- Prevent complications related to the adnexal mass (eg, rupture or torsion exclude malignancy),

- Improve subfertility, and preserve ovarian function.

Relief of symptoms

Endometriomas that cause pain or a mass effect are removed to relieve the patient's symptom

Prevention of cyst complications

- Enlarging cysts are removed because they increase
- the risk for ovarian torsion, cyst rupture
- and the possibility of malignancy

Treatment of subfertility

- Excision of endometriomas improves pregnancy rates in subfertile women

  - In one study of women with subfertility and endometriomas, excision of the endometrioma was associated with an increased spontaneous pregnancy rate compared with women who had cyst wall ablation only

  - Conception and pregnancy rates are not improved when endometriomas are treated with hormonal treatments such as danazol or gonadotropin-releasing hormone agonists

- Endometrioma resection has not been shown to improve in vitro fertilization/intracytoplasmic sperm injection outcomes

- Women undergoing in vitro fertilization or intracytoplasmic sperm injection should consider endometrioma resection only if they are having symptoms (eg, pain or mass) or to exude malignancy

Endometriosis: Management of ovarian endometriomas

Efficacy of medroxyprogesterone treatment in infertile women with endometriosis: a prospective, randomized, placebo-controlled study.

Harrison RF, Barry-Kinsella C . Fertil Steril.

OBJECTIVE To determine the efficacy of medroxyprogesterone acetate (MPA), 50 mg/d for 3 months, in treating endometriosis, with a follow-up of 6 months

DESIGN Prospective, randomized, double-blind, placebo-controlled trial

RESULT(S) Whether initially high or low, both MPA and placebo therapy achieved similar statistically significant reductions in stages and scores at second-look laparoscopy. MPA was rated more effective in improving overall well-being. Side effects were minimal in both groups (10% MPA; 2% placebo). Six pregnancies occurred without other endometriosis therapy being instituted in the placebo group (3 during therapy), and one with MPA (0 during therapy)

CONCLUSION(S) Both MPA and placebo appear equally and significantly effective in treating endometriosis over a 3-month period, as judged by comparative laparoscopy. Therefore, not

the performance of placebo also suggests the need to review whether therapy should be instituted at all as well as the present concept that endometriosis is frequently a spontaneously progressive phenomenon.

Women undergoing in vitro fertilization or intracytoplasmic sperm injection should consider endometrioma resection only if they are having symptoms (eg, pain or mass) or to exclude malignancy

Preservation of ovarian function

- An endometrioma itself does not alter ovarian function. In a study of 244 women with unilateral endometriomas (55 percent with left endometrioma and 45 percent with right endometrioma) monitored for ovulation during 1199 cycles, ovulation occurred at similar rates from the normal ovary and the endometriotic ovary (49.7 percent versus 50.3 percent)

- Although the endometrioma may reduce the number of follicles recruited in the ovary by exogenous FSH stimulation, there is no evidence that the cyst has an effect on pregnancy or live birth rates.

- Ovarian surgery to remove the endometrioma can reduce ovarian reserve as assessed by anti-Mullerian hormone levels, but not by antral follicle count

  A meta-analysis of eight studies of endometrioma cystectomy reported 38 percent lower anti-Müllerian hormone levels in women after ovarian cystectomy compared with before cystectomy

Prospective study that assessed ovarian function reported a greater loss of ovarian tissue and antral follicles in the women undergoing repeat surgery compared with women undergoing primary endometrioma resection

TREATMENT OPTIONS

- Cystectomy

- Observation with serial imaging

- Medical therapy is an effective treatment for pelvic pain
- caused by endometriosis, it has no benefits over observation
- for management of endometriomas

- Surgical resection provides :

  a definitive diagnosis

  symptom relief

  exclusion of malignancy

  Risks of surgical resection

  decreased ovarian reserve after resection

  and standard surgical risks.

- Observation preserves ovarian function and avoids surgical risk.

  The risks of observation include

  lack of histologic diagnosis

  Inability to exclude malignancy

  Potential for disease progression

The effect of surgery for endometrioma on ovarian reserve evaluated by antral follicle count: a systematic review and meta-analysis

Ludovico Muzii et al. Hum Reprod.

Study question: Does surgical treatment of endometriomas impact on the ovarian reserve as? evaluated with antral follicle count (AFC)

Main results and the role of chance: AFC for the operated ovary did not change significantly after surgery (mean difference 0.10, 95% CI -1.45 to 1.65; P = 0.90). Lower AFC for the diseased ovary compared with the contralateral one was present before surgery, although the difference was not significant (mean difference -2.79, 95% CI -7.10 to 1.51; P = 0.20). After surgery, the operated ovary showed a significantly lower AFC compared with the contralateral ovary (mean difference -1.40, 95% CI -2.27 to -0.52; P = 0.002

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OUR Approach

- For women with known endometriosis and a symptomatic or expanding suspected endometrioma, we suggest cystectomy, preferably by the laparoscopic route .

- We perform frozen section evaluation in cases with suspicious or unusual morphology .

- After surgical resection, we recommend long-term treatment with an estrogen-progestin contraceptive to prevent progression

We suggest observation

Small (generally less than 5 cm)

Asymptomatic cysts that have the imaging-based characteristics of an endometrioma

Observation over time allows other benign ovarian cysts that can be confused for an endometrioma, such as hemorrhagic cysts, to regress .

Also, as surgical resection reduces ovarian hormone production, observation in asymptomatic women with subfertility or older reproductive age (age greater than 37) helps preserve ovarian function

For endometriomas that are being observed, a typical management plan involves physical examination and ultrasound every six months for one to two years, followed by annual examination and ultrasound

SURGICAL PROCEDURES

- For women who elect surgical therapy, first-line treatment is cystectomy because cystectomy removes the endometriosis but leaves the normal ovary .

- Cystectomy, preferably by laparoscopy, is preferred to cyst drainage or cyst wall ablation for the treatment of pelvic pain or infertility

- Aspiration alone is ineffective; recurrence rates of 80 to 100 percent have been reported at six months follow-up

  Fenestration and ablation (ie, removal of part of he cyst wall followed by the coagulation or laser

  vaporization of the inner side of the wall) is also less effective than cystectomy, both in terms of improving fertility and reducing pain

Oophorectomy

Women who have recurrent cysts

Have completed childbearing

Postmenopausal

Who have concerns for malignancy

Cyst sclerotherapy

- Sclerotherapy consists of injecting a sclerosing agent (ethanol, tetracycline, or methotrexate) into the cyst cavity and is thought to disrupt the cyst epithelial lining, which results in inflammation, fibrosis, and, ultimately, obliteration of the cyst

- The endometrioma recurrence rate after sclerotherapy has been reported to be as high as 63 percent, without an improvement in clinical pregnancy rate when compared with traditional cystectomy or no treatment

In meta-analysis of women with subfertility and endometriomas

, women undergoing cystectomy had nearly three times as many

pregnancies (54 versus 17 percent) and half as many recurrences

(13 versus 26 percent) as women undergoing cyst wall ablation

Women must balance the treatment of pain and infertility

with the potential negative impact of ovarian cystectomy

on ovarian reserve

A histologic analysis of endometriomas showed endometriosis

of the inner cyst wall rarely penetrates more than 1.5 mm into the

cyst capsule

- The hemostatic technique used on the ovary has been reported to impact the postoperative anti-Müllerian hormone (AMH) levels

Two different meta-analyses reported hemostatic sealants and suture caused less reduction in AMH levels compared with bipolar cautery

Generally, endometrioma removal is often more difficult than the removal of other benign ovarian cysts because the contents of the endometrioma can chronically leak into the peritoneal cavity.

This leakage causes dense scarring to structures adjacent to the cyst, making complete cystectomy more challenging.

- Many women with endometriomas also have other benign ovarian cysts, such as hemorrhagic corpus luteum cysts or follicular cysts.

  They are left in situ when possible in an effort to retain as much normal ovarian tissue as possible.

Definitive surgery (oophorectomy with or without hysterectomy)

—Oophorectomy is reserved for women with recurrent symptomatic endometriomas or in women with concerns for malignancy on imaging.

However, even after oophorectomy, the patient can develop an adnexal mass or recurrent pain because of a retained retroperitoneal ovarian remnant

POSTOPERATIVE MANAGEMENT

In a meta-analysis of three cohort studies and one randomized trial including 965 women, women who always used OCs had a lower risk of recurrent endometrioma compared with women who never used OCs (8 versus 34 percent; odds ratio 0.12, 95% CI 0.05-0.29)

In a meta-analysis of three trials and one prospective cohort study that assessed the impact of cyclic or continuous OC regimens after endometrioma resection, women who used continuous OC regimens reported lower recurrent dysmenorrhea rates compared with women who used cyclic OC regimens (risk ratio 0.24, 95% CI 0.06-0.91)

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.

A study of endometrioma cells reported that cell growth was suppressed more by combination therapy with ethynyl estradiol and progestin than by progestins alone.

Another option for postoperative suppressive therapy is a gonadotropin-releasing hormone (GnRH) agonist.

One limitation is that GnRH agonists, with or without add-back therapy, are approved for six months of use by the US Food and Drug Administration.

The expense and ease of treatment favor OC

long-term management for women who are

candidates for combined Ocs.

While a meta-analysis of three studies supports the use of the levonorgestrel-releasing intrauterine device (LNg IUD) to decrease dysmenorrhea associated with endometriosis, it Is not clear if the LNg IUD reduces endometrioma recurrence.

In a retrospective cohort study of 99 women who underwent laparoscopic cystectomy for endometrioma followed by three cycles on GnRH agonist treatment, the recurrence rate was similar among women who then received either an LNg IUD or cyclic OCs (median 17 months of follow up

The women who received the LNg IUD did report an early 70 percent reduction in the recurrence of dysmenorrhea.

Until further data are available from larger trials, we do not advise LNg IUD insertion for prevention of endometrioma recurrence and instead offer women treatment with oral contraceptives

- # RECURRENCE

In approximately 25 percent of women

High risk factors for endometrioma recurrence included:

Removal of a cyst >8 cm

Younger age (<25 years)

Preoperative cyst rupture

- Recurrent endometrioma can be difficult to distinguish from a malignancy, recurrent endometriomas should be evaluated to exclude malignancy.

  For women with an endometrioma recurrence, repeat cystectomy may be more damaging to the ovary than initial cystectomy