

Endometriosis

Alaa Mosbah*

Faculty of Medicine, Mansoura University, Egypt

*Corresponding author: Dr. Alaa Mosbah, M.D OBS & GYN, Prof. of Obstetrics and Gynecology, Faculty of Medicine, Mansoura University, Egypt, Email: alaamosbah@hotmail.com

Received Date: February 10, 2020; Published Date: February 12, 2020

Abstract

Introduction: Endometriosis is a common gynecological disorder identified by the presence of ectopic endometrial tissue outside the uterus. It affects reproductive-aged women and is a major cause of pelvic pain and infertility.

Aim: In this review, we explain the pathophysiology of endometriosis currently available in the literature and outline ways to diagnose and manage patients with this disease.

Methodology: A major review of the literature was undertaken including a Medline search, Cochrane library search and a reference search from a number of review articles about pelvic endometriosis from 2010 to 2020. Also, we added our experience in Mansoura university hospital about diagnosis and treatment of endometriosis during same period.

Conclusion: Laparoscopy is the gold standard method for diagnosis and treatment of endomeriosis. Postoperative medical treatment and a close follow-up to avoid a relapse seem to be the ideal lines of treatment.

Keywords: Endometriosis; Pelvic pain; Infertility; Diagnosis; Management

Definition

It is the presence of endometrial tissue outside of the uterine cavity.

Incidence

Endometriosis affects up to 10 percent of reproductive-aged women. It is more common in women with pelvic pain or infertility 70 to 90 percent and 21 to 40 percent, respectively. Endometriomas are probably the most commonly diagnosed form of endometriosis because of the relative ease and accuracy of ultrasound diagnosis. Although their exact prevalence and incidence are not known, they have been reported in 17–44% of women with endometriosis [1].

Risk Factors for Endometriosis

Early menarche ,First-degree relative with endometriosis ,Late menopause ,Low body mass index, Müllerian anomalies, Nulliparity ,Prolonged menstruation (more than five days) ,Shorter lactation intervals ,Shorter menstrual cycles (less than 28 days) and White race (compared with black race).

Sites of occurrence of endometriosis

The common sites of endometriosis are the ovaries, fallopian tubes, pelvic peritoneum, D.P, uterovesical pouch and uterosacral ligaments (called the “pelvic” site), whereas the atypical sites of endometriosis include the gastrointestinal tract, abdominal scar, urinary tract, soft tissues, and lungs (called the “extra-pelvic” site).

Causes of endometriosis: no cause discovered yet

Theories of What Causes Endometriosis

The retrograde menstruation theory (transtubal migration theory) suggests that during menstruation some of the menstrual tissue backs up through the fallopian tubes, implants in the abdomen, and grows.

One theory suggests that endometrial tissue is distributed from the uterus to other parts of the body through the lymph or blood systems. A genetic theory suggests that certain families have predisposing factors for the disease [2-4].

Surgical transplantation has also been cited in many cases where endometriosis is found in abdominal scars, although it has also been found in such scars when accidental implantation seems unlikely. Another theory suggests that remnants of tissue from when the woman was an embryo may later develop into endo or that some adult tissues retain the ability they had in the embryo stage to transform under certain circumstances.

Environmental toxins such as dioxin and PCBs, which act like hormones in the body and damage the immune system, can cause endometriosis. Dioxins are highly toxic chemicals which come from the production and use of pesticides and herbicides.

Diagnosis

Some women with endometriosis are asymptomatic, whereas others present with symptoms such as chronic pelvic pain, dysmenorrhea, dyspareunia, and decreased fertility. Hematuria and dysuria with bladder affection. Dyskasia with rectal lesions. Chest pain and hemoptysis with lung affection. Ultrasonography and MRI can diagnose endometrioma and other deep pelvic lesions. The detection of kissing ovaries at ultrasound is strongly associated with the presence of endometriosis and is a marker of the most severe form of this disease. Bowel and fallopian tube endometriosis were significantly more frequent in patients with kissing ovaries. Laparoscopy is the gold standard for diagnosis. The cancer antigen 125 (CA125) level is often elevated in women with endometriosis, but its specificity for the disease is low [5-7].

Biologic mechanisms that might Link endometriosis and infertility:

- Distorted pelvic anatomy
- Altered peritoneal function
- Altered hormonal and cell-mediated function
- Endocrine and ovulatory abnormalities
- Abnormal uterotubal transport

- Impaired implantation
- Oocyte and embryo quality

Staging of endometriosis

According to the American Society for Reproductive Medicine (ASRM), AFS-r,1985)

1. Minimal endometriosis also called stage 1, (1-5 points) endometriosis, and is characterized by isolated implants and no significant adhesions.
2. Mild endometriosis, stage 2, (6-15 points) is characterized by superficial implants that measure less than 5 cm in diameter without significant adhesions.
3. Moderate endometriosis, stage 3, (16-40 points) involves multiple deep implants, small cysts on one or both ovaries, and the presence of flimsy adhesions.
4. Severe endometriosis, stage 4, (more than 40 points) consists of multiple deep implants, large cysts on one or both ovaries, and thick adhesions.

Endometriosis fertility index (EFI): A clinical tool that predicts pregnancy rates (PRs) in patients with surgically documented endometriosis who attempt non-IVF conception. Its use provides reassurance to those patients with good prognoses and avoids wasted time and treatment for those with poor prognoses. The sum of those scores determined intra-operatively after surgical intervention that describe the function of the tube, fimbria, and ovary on both sides and data from history of infertile case such as age and duration of infertility.

Treatment

Treatment depend on the age of patient, desire for fertility, presence of sufficient number of children and stage of endometriosis.

Treatment may be medical or surgical and includes nonsteroidal anti-inflammatory drugs, gestagen, dienogest, combination estrogen/progestin contraceptives, progestin-only contraceptives. Other treatments include gonadotropin-releasing hormone analogues, danazol and letrozole drugs and levonorgestrel-releasing intrauterine system (Mirena). Laparoscopy is used to confirm the diagnosis and to treat many cases such as cystectomy for ovarian endometrium and electric diathermy coagulation for endometriosis implants and adhesolysis for pelvic adhesions. Hysterectomy and BSO for severe cases not desiring fertility.

Intrauterine insemination combined with ovarian stimulation is an effective option provided that tubes are patent for treatment of infertility.

In mild cases, if no pregnancy within 12 - 18 months, surgical

treatment could be indicated.

Laparoscopic removal of endometriosis is effective to improve fertility in minimal and mild cases.

IVF is first-line in preference in more severe cases, advanced female age, or reduced sperm quality. Two cycles of IVF might be more effective than second surgeries.

Cystectomy for endometrium larger than 4 cm in diameter, if possible, improves fertility more than simple ablation (drainage and coagulation). Cystectomy should be performed with expertise and care, identifying tissue planes and carrying out careful dissection and avoiding the removal of surrounding ovarian tissue. Ovarian reserve should be considered prior to surgery. There is growing evidence that surgery of endometriomas affects ovarian reserve.

Postoperative medical (hormonal) therapies delay and do not enhance pregnancy. Three-step approach for large endometrioma: First step involves opening and draining the endometrioma. Inspect the cyst cavity and take a biopsy. Second step, start GnRH agonist therapy for 3 months, during which time the thickness of the cyst wall significantly decreases, with atrophy and reduction in stromal vascularization of the cyst. Third step, complete the surgery with a second laparoscopy in the form of cystectomy, CO₂ vaporization, bipolar diathermy, or plasma ablation of the cyst wall lining. Surgical treatment of endometriotic cysts could be associated with the unintentional removal or destruction of ovarian follicles, which can be identified by post-operative reduction in: serum anti-müllerian hormone (AMH) levels or antral follicle count (AFC) on transvaginal ultrasound examination [8,9].

Treatment of deep infiltrating endometriosis (DIE)

Excision of DIE remains the most complex surgical procedure in the domain of endometriosis. Four different scenarios are encompassed in DIE: bladder infiltration, lateral disease (with or without ureteral compromise), sigmoid affectation, and rectovaginal nodules. All of those surgeries, except for some minor bladder lesions, require expertise and, in many cases, interdisciplinary surgical teams, including

gastrointestinal surgeons and urologists.

References

1. ACOG Committee on Practice Bulletins--Gynecology. (2000) ACOG practice bulletin. Medical management of endometriosis. Number 11, December 1999 (replaces Technical Bulletin Number 184, September 1993). Clinical management guidelines for obstetrician-gynecologists. *Int J Gynaecol Obstet* 71(2): 183-196.
2. William C. Andrews, Veasy C. Buttram, Jr., S. Jan Behrman, Erskine Carmichael, et al. (1985) Revised American Fertility Society classification of endometriosis. *Fertil Steril* 43(3): 351-352.
3. Christian M Becker, Anis Feki, Grigoris F Grimbizis, Lone Hummelshoj, et al. (2017) Recommendations for the surgical treatment of endometriosis. Part 1: Ovarian Endometrioma; *Human Reproduction* 2017(4): 1-6.
4. Collinet P, Fritel X, Revel-Delhom C, Ballester M, Bolze PA, et al. (2018) Management of endometriosis CNGOF/HAS clinical practice guidelines short version. *J Gynecol Obstet Hum Reprod.* 47(7): 265-274.
5. Dunselman GA, Vermeulen N, Becker C, et al. (2014) ESHRE guideline: management of women with endometriosis. *Hum Reprod* 29(3): 400-412.
6. Hughes E, Fedorkow D, Collins J, Vandekerckhove P, Brown J, et al. (2007) Ovulation suppression for endometriosis. *Cochrane Database Syst Rev* (3): CD000155.
7. Koga K, Takamura M, Fujii T, Osuga Y (2015) Prevention of the recurrence of symptoms and lesions after conservative surgery for endometriosis. *Fertil Steril* 104(4): 793-801.
8. Macer ML, Taylor HS. Endometriosis and infertility. *Obstet Gynecol Clin North Am.* 2012;39: 535-549.
9. Vercellini P, Viganò P, Somigliana E, Fedele L (2014) Endometriosis: pathogenesis and treatment. *Nat Rev Endocrinol* 10(5): 261-275.