Endometriosis and Infertility

What is endometriosis?

The endometriosis is a condition where tissue from the uterine cavity (endometrium) is found in other locations where it is not supposed to be (like in the abdominal cavity, fallopian tubes, and ovaries). The extent of spread and invasion of this "ectopic" tissue can cause infertility and/or pelvic pain. It is believed that endometriosis occurs in 5-10% of all women, though not all of these women will experience pain or infertility.

How is endometriosis diagnosed?

While many patients are told they may have endometriosis and may even be treated based on symptoms (chronic pelvic pain, pain with menstrual periods, pain with intercourse, etc), the definitive diagnosis requires laparoscopic surgery to inspect the inside of the abdominal cavity. With laparoscopy, endometriosis is found in:[1,2]

- 12-32% women of reproductive age with pelvic pain
- up to 50% of women with infertility vs. 6.7% with no history of infertility

Endometriosis may be mild, moderate or severe but there is little correlation between the extent of disease and the amount of pain the patient may experience. Often, women with the most pain do not have any or little endometriosis and women with severe disease may be symptom-free.

How does endometriosis affect fertility?

Though the belief that endometriosis causes infertility has never been proven, there is ample evidence to associate a strong association. Endometriosis may cause difficulty with conceiving by production of inflammatory substances that can affect ovarian or tubal function, and also may cause adhesions (scar tissue) distorting the anatomy of the uterus, fallopian tubes, and ovaries. In severe cases, women who have no known history of pelvic infection but have endometriosis can be found to have damaged, blocked, or fluid-filled fallopian tubes. It is also believed these inflammatory substances may affect ovulation, fertilization, and even implantation.

Endometriomas are blood-filled "chocolate" cysts that are often found in patients with severe endometriosis. Some patients may have pain from these cysts and other patients are only incidentally found to have them. The belief that these cysts affect ovulation, cause poor egg quality, or decrease the effectiveness of fertility treatment is controversial.

Another association between endometriosis and infertility that we often see but has not been scientifically proven involves diminished ovarian reserve. We may often see young patients with endometriosis exhibit lower egg quality and require higher doses of medicine compared to similar-aged patients without endometriosis.

How is endometriosis treated?

While this remains and area of controversy, the field is slowly shifting away from surgical treatment due to improvements in the medical treatment for endometriosis related pain and fertility issues. Medical treatment with injections of Depo-lupron for 6-month interval comes with side effects, but has been shown to greatly alleviate pain from endometriosis. The American Society for Reproductive Medicine (ASRM) views endometriosis as a chronic state that requires a life-long management plan maximizing the use of medical treatment and avoiding repeated surgery. However, there is a benefit of surgery in certain patients with endometriosis that may help their pain and/or infertility.

In our practice, treatment for endometriosis is individualized for each patient. Certain patients with pain need laparoscopic diagnosis and treatment of endometriosis lesions or cyst removal. Other patients who may not experience pain but have known endometriosis with infertility may need to pursue fertility treatment, often aggressively with they are demonstrating diminished ovarian reserve. Many factors are involved in the treatment decision-making process, including the patient's age and history, level of pain, length of infertility, status of her fallopian tubes, and the findings from prior surgery to help stage the level of endometriosis.

Mild to moderate endometriosis:

There are 2 randomized control trials that have evaluated the pregnancy rate when comparing women with mild to moderate endometriosis undergoing laparoscopic ablation/resection versus only laparoscopic diagnosis.[3,4] When the results of these two similar studies were combined, a statistical analysis found the number needed to treat was 12. This means that for every 12 patients with mild to moderate endometriosis diagnosed at laparoscopy, there will be 1 additional successful pregnancy if ablation or resection of endometriosis is performed compared to no treatment.

The mainstay fertility treatment in patients with normal ovarian reserve, open fallopian tubes, and mild-moderate endometriosis is gonadotropins (injectable medication) to stimulate the ovary, followed by insemination (IUI). If initial attempts are not successful, the treatment plan should be expanded to in vitro fertilization (IVF).

Severe endometriosis:

Unfortunately, patients with severe endometriosis have often been treated with multiple surgeries before addressing their fertility. These patients may have adhesions distorting anatomy and affecting the function of their fallopian tubes. After careful evaluation, IVF may be the best option for these patients.

1. Missmer SA, Hankinson SE, Spiegelman D , et al. Incidence of laparoscopically confirmed endometriosis by demographic, anthropometric, and lifestyle factors. Am J Epidemiol. 2004;160(8):784.

2. Sangi-Haghpeykar H, Poindexter AN. Epidemiology of endometriosis among parous women. Obstet Gynecol. 1995;85(6):983.

3. Marcoux S, Maheux R, Bérubé S. Laparoscopic surgery in infertile women with minimal or mild endometriosis. Canadian Collaborative Group on Endometriosis. N Engl J Med 1997;337:217–22.

4. Parazzini F. Ablation of lesions or no treatment in minimal-mild endome- triosis in infertile women: a randomized trial. Gruppo Italiano per lo Studio dell'Endometriosi. Hum Reprod 1999;14:1332–4.