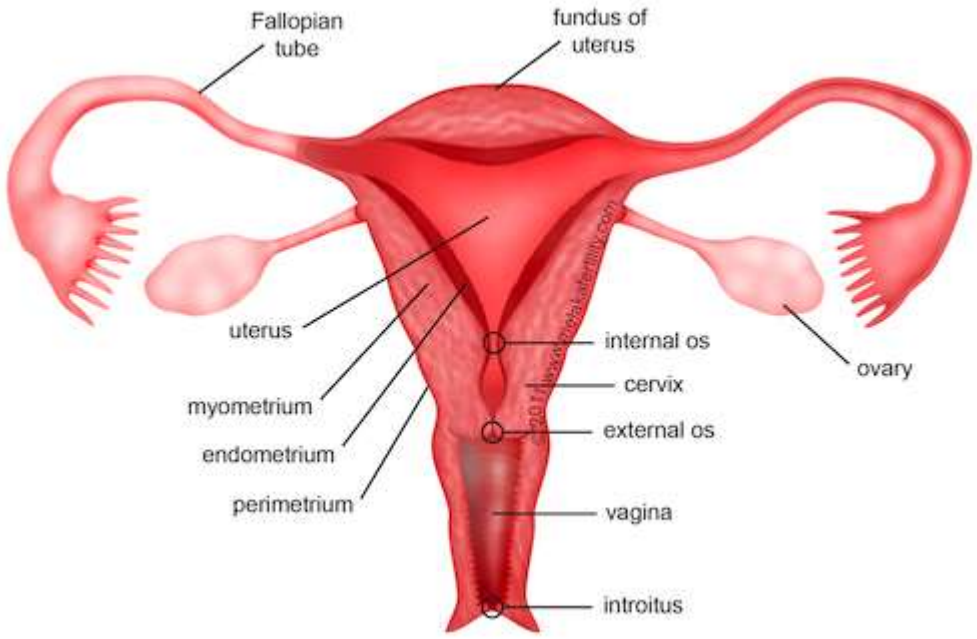
Painful Periods

A Guide about Endometriosis

What is Endometriosis?

Endometriosis is a common condition that affects women during the reproductive years. It occurs when cells similar to the uterine lining (endometrium) attaches to organs in the pelvis and begins to grow. These displaced endometrial cells cause irritation in the pelvis that may lead to pain and infertility.

To understand endometriosis, it is helpful to have basic knowledge of female anatomy as seen here:



Experts do not know why some women develop endometriosis. During each menstrual period, most of the uterine lining and blood is shed through the cervix and into the vagina. However, some of this tissue (blood and cells) enters the pelvis through the fallopian tubes. Women who develop endometriosis simply may be unable to clear the pelvis of these cells. The severity and course of endometriosis is highly unpredictable.

Some women may have a few endometriosis implants on the surface of the pelvis, the peritoneum, or pelvic organs, or they may invade the peritoneum and grow as nodules. Endometriosis may grow on the surface of the ovary as implants or invade the ovary and develop a blood-filled cyst called an endometrioma, or a "chocolate cyst." Chocolate cysts are so named because over time the blood they contain darkens to a deep reddish-brown color. These cysts may be as small as a pea or grow to be larger than a grapefruit.

Endometriosis may irritate surrounding tissue and produce internal scar tissue called adhesions. These adhesions can bind the pelvic organs together, cover them entirely, or involve nearby intestines. The adhesions may keep fallopian tubes from picking up the egg from the ovary during ovulation, resulting in fertility problems.

Endometriosis also may grow into the walls of the intestine or into tissue between the vagina and the rectum. In these cases, women may have symptoms related to bowel function or intercourse.

Up to 20% of all women may have endometriosis. Many women who have endometriosis experience few or no symptoms. Some women experience severe menstrual cramps, chronic pelvic pain, or painful intercourse. In others, infertility may be the only symptom of endometriosis. Often, endometriosis is diagnosed when a woman has pelvic surgery because of a persistent ovarian cyst or other reasons.

Endometriosis can affect women who have had children and can occur in teenagers and young women. Some specialists feel that endometriosis is more likely to be found in women who have never been pregnant. Endometriosis may be found in 24% to 50% of women who experience infertility and in more than 20% who have chronic pelvic pain.

SYMPTOMS OF ENDOMETRIOSIS

Menstrual Cramps

Many women experience mild menstrual cramps on the first or second day of the period. These are considered normal. When cramping is more severe or begins several days before the period, it is called dysmenorrhea and may be a symptom of endometriosis or other types of pelvic pathology such as uterine fibroids or adenomyosis. Severe cramping may cause nausea, vomiting, or diarrhea. Primary dysmenorrhea occurs during the early years of menstruation, tends to improve with age or after childbearing, and usually is not related to endometriosis. Secondary dysmenorrhea occurs later in life and may increase with age. This may be a warning sign of endometriosis, although some women with endometriosis feel no cramping at all.

Painful Intercourse

Endometriosis can cause pain during or after intercourse, a condition known as dyspareunia. Deep penetration can produce pain in an ovary bound by scar tissue to the top of the vagina. Pain also may be caused by bumping against a tender nodule of endometriosis behind the uterus or on the uterosacral ligaments, which connect the cervix to the sacrum.

Infertility

There is a large body of evidence that demonstrates an association between endometriosis and infertility. Endometriosis can be found in up to 50% of infertile women. Infertility patients with untreated mild endometriosis conceive on their own at a rate of 2% to 4.5% per month, compared to a 15% to 20% monthly fertility rate in normal couples. Infertility patients with moderate and severe endometriosis have monthly pregnancy rates of less than 2%. Even though endometriosis is associated strongly with infertility, *not all women who have endometriosis are infertile*. For example, many women undergoing tubal sterilization procedures are noted to have endometriosis.

A cause and effect relationship between endometriosis and reduced fertility is presumed but not proven. It is not known how minimal and mild endometriosis reduces fertility when there are no adhesions. It is presumed that endometriosis alters the pelvic environment in subtle but important ways. Theories include inflammation, altered immune system, hormonal changes, abnormal function of the fallopian tube, or impaired fertilization and implantation. It is easier to understand how moderate or severe endometriosis reduces fertility, since major pelvic adhesions, when present,

may prevent the release of eggs, block sperm entry into the fallopian tube, and prevent the fallopian tube's ability to pick up eggs during ovulation.

HOW IS ENDOMETRIOSIS DIAGNOSED?

Endometriosis cannot be *confirmed* by symptoms alone. Your physician may suspect endometriosis if you are having fertility problems, severe menstrual cramps, pain during intercourse, or chronic pelvic pain. It also may be suspected when there is a persistent ovarian cyst. Endometriosis is often found in close family members like a mother or sister. Remember, however, that many women with endometriosis have no symptoms at all.

Pelvic Exam

Certain findings of a pelvic examination may lead your physician to suspect endometriosis. The doctor may feel a tender nodule behind the cervix during a combined vaginal and rectal exam, or the uterus may be tilted back (retroverted). One or both ovaries may be enlarged or fixed in position. Occasionally, endometriosis implants may be visible in the vagina or the cervix. Although your physician may suspect endometriosis, based on your history and the results of a pelvic exam, surgery is needed to confirm endometriosis.

Laparoscopy

Laparoscopy is a surgical procedure that enables the physician to see the pelvic organs and look for endometriosis. During laparoscopy, a thin camera called a laparoscope is inserted into the abdomen through a small incision near the navel. The laparoscope allows the surgeon to see the surface of the uterus, fallopian tubes, ovaries, and other pelvic organs. Early endometriotic implants look like small, flat patches, blebs, or flecks sprinkled on the pelvic surface. The flecks can be clear, white, brown, red, black, or blue. Because of implants can appear differently, it is important to choose a gynaecologist who is an expert in the field of endometriosis to perform your laparoscopy if it is required.

The extent of endometriosis is evaluated during laparoscopy. A clinical staging system is used to describe the extent of endometriosis, adhesions, and endometrioma cysts in the ovary. There are several staging systems used by doctors to assess how much endometriosis is seen. However, the staging does not correlate well with a woman's chance of conceiving with fertility treatment or the degree of pain that she experiences.

Your physician may decide to treat your endometriosis during the laparoscopy. Additional small incisions allow your physician to insert surgical instruments. Endometriosis may be coagulated, vaporized, burned, or excised, and scar tissue or ovarian cysts may be removed. During laparoscopy, your doctor can determine if your fallopian tubes are open by injecting dye through the cervix into the uterus. If the tubes are open, the dye will flow out the ends of the fallopian tubes.

Other Diagnostic Procedures

In special cases, your doctor may use special imaging techniques such as ultrasound, computerized tomography (CT) scan, or magnetic resonance imaging (MRI) to gather more information about your pelvis. These procedures can identify cysts and help characterize the fluid within an ovarian cyst, although an endometriotic cyst and a normal corpus luteum cyst may have a similar appearance. These tests are useful when evaluating women experiencing infertility and/or chronic pelvic pain.

TREATMENT OF PAIN

Your doctor will consider your symptoms, physical examination, test results, and your goals and concerns before advising treatment. Women with mild symptoms may benefit from lifestyle changes or require no treatment at all. Hormonal therapy may be suggested when pain interferes with family, work, or daily activities, since these therapies usually reduce pelvic pain and dyspareunia (painful intercourse) in more than 80% of women with endometriosis. Since several effective treatments are available, the choice is made based on side effects and cost. Hormonal treatments are not effective for large ovarian endometriomas, and surgery is necessary. Surgery also may be indicated when medical treatment is unsuccessful or when medical conditions prohibit the use of hormone treatments.

Lifestyle Modifications

Some women have found that their pain is improved by exercise and relaxation techniques. Heat can often help to relax pelvic muscles; so applying a heating pad or having a warm bath may reduce pelvic pain. Others may find benefit in complementary therapies such as Traditional Chinese Medicine, Hijama, aromatherapy, yoga, homeopathy, naturopathic medicine or Reike.

A multitude of natural herbs and supplements have hormonal activity that may alleviate symptoms. However, it is important to consult your doctor when using these, because they can also interfere with other medications.

Herbs

- Chasteberry for hormonal modulation
- Evening primrose oil for hormonal balance and stress (do not take if using antipsychotics or medications that increase bleeding)
- Green tea for antioxidant, anti-inflammatory and stress relief; use caffeine-free type
- Cat's claw for inflammation, immune and antifungal activities (may increase the activity of blood thinning medications)
- Tumeric for inflammation (may increase the activity of blood thinning medications)

Supplements

- Omega-3 fatty acids such as fish oil (may interact with blood thinning medications)
- Multivitamins with A,C, D, E, B, Magnesium, Calcium, Zinc, and |Selenium
- Vitamin C for antioxidant activity
- Alpha-lipoic acid for antioxidant activity
- L-carnitine for muscle support
- Lactobacillus acidophilus for immune and digestive health
- Calcium d-glucarate to help lower estrogen (may interfere with hormonal medication)
- Diindolylmethane to alter estrogen metabolism (may interfere with hormonal medication)
- Coenzyme Q10 for antioxidant and immune support

Although natural supplements have not been shown to reduce endometriosis-related pain, over-the-counter, nonsteroidal, anti-inflammatory medications, like ibuprofen and naproxen, reduce painful menstrual cramps. When painful intercourse is a problem, changing positions prevents pain caused by deep penetration. In spite of these measures, medical treatment is frequently needed.

Dietary Changes

Consuming certain foods may increase the risk of developing endometriosis. However, other foods can often be used to manage the symptoms of endometriosis. According to one study, drinking 2 or more cups of coffee per day may double the chance of developing endometriosis. Also, alcohol

consumption has been linked to a higher incidence of endometriosis, especially for women with infertility.

Importantly, endometrial implants respond to estrogen and some foods can alter this in women. Low-fat foods such as lean meat and vegetarian dishes have been shown to decrease the levels of estrogen in blood, helping to reduce the pain of endometriosis. Eating more fruits and vegetables, but less fat, may also add to the benefits of medical treatments in some women.

- Eliminate possible allergens: dairy, gluten, preservatives and additives such as monosodium glutamate (MSG)
- Eat foods high in antioxidants: fruits (berries, cherries, tomatoes) and vegetables (kale, spinach, bell pepper)
- Avoid refined foods: white bread, pasta, sugar
- Eat less red meat and more lean meat
- Cook with healthy oils: olive oil or vegetable oil
- Eliminate trans fatty acids: commercially-baked cookies, crackers and cakes, fried foods, donuts, margarine, processed foods
- Avoid alcohol, tobacco, and caffeine
- Limit foods with high sugar, salt, and fat
- Drink 6-8 glasses of water each day

Hormonal Contraceptives

Birth control pills often reduce menstrual cramping and pelvic pain that may be associated with endometriosis. No one pill appears to be better than any other when treating endometriosis symptoms. Birth control pills may be prescribed continuously without pausing for menstrual periods to women with endometriosis. Common side effects of this approach include fluid retention and irregular spotting or bleeding. It also should be noted that endometriosis may be diagnosed in women taking birth control pills and that birth control pills have never been shown to prevent the development of endometriosis. No data are currently available concerning the effect of transdermal contraceptive patches and vaginal contraceptive rings upon endometriosis.

Progestins

Progestins are synthetic medications that have progesterone-like activity upon the endometrium, the uterine lining. Many progestins have been demonstrated to reduce endometriosis-associated pelvic pain. The most common side effects of progestin therapy are irregular uterine bleeding, weight gain, water retention, breast tenderness, headaches, nausea, and mood changes, particularly depression. Progestins are considerably less expensive than other medications and may be prescribed as pills, injections, or the levonorgestrel-containing intrauterine contraceptive devices (IUDs).

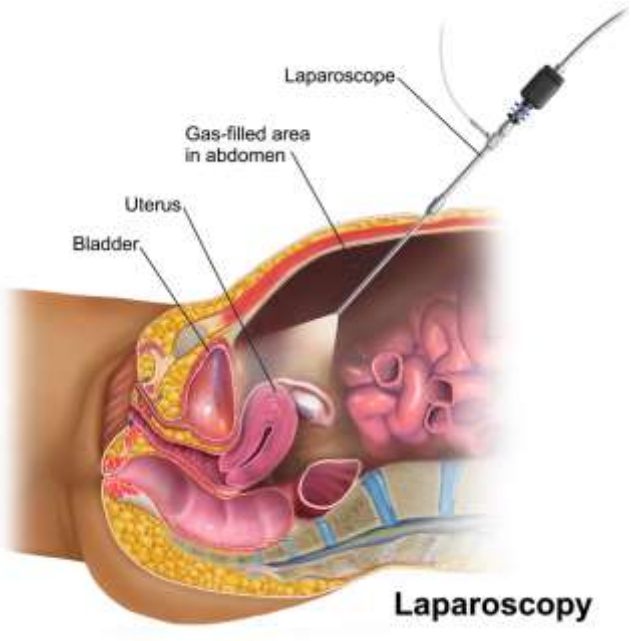
One progestin, dienogest, has been shown to decrease the pain and stop the growth of endometriotic implants. It is as effective as GnRH analogs but has much fewer side effects, allowing for longer therapy without interruption. This hormone stops ovulation and decreases many of the inflammatory components that are associated with endometriosis. Side effects include irregular menses, headaches, and mood changes.

Gonadotropin-releasing Hormone (GnRH) Analogs

GnRH analogs, particularly GnRH agonists, cause estrogen levels to fall to menopausal levels, and menstruation does not occur. These drugs are highly effective for painful endometriosis. Side effects include menopausal symptoms: hot flashes, vaginal dryness, and loss of calcium from the bones. The medications are usually given for six months. Low-dose estrogen/progestin hormone therapy or progestins alone may be added to prevent bone loss when prolonged treatment is needed or if menopausal symptoms are severe. Calcium supplementation and exercise are recommended to reduce the loss of bone density that occurs with therapy. Most bone density loss is temporary and is regained after treatment is stopped.

Surgery for Pain

Surgical treatment of endometriosis often is performed when endometriosis is diagnosed. Laparoscopy is usually the first-line treatment for endometriosis. Laparoscopy is when a lighted telescope is placed through an incision below the belly button to view the pelvic cavity.



Laparoscopy

During laparoscopy, the doctor may remove adhesions, endometriotic nodules, and ovarian cysts. Laparoscopy often is used to treat recurrent endometriosis when the goal is to preserve future fertility. Sometimes the severity of endometriosis is such that major surgery is advised to remove endometriosis and adhesions. Removal of the entire ovarian cyst with its wall is superior to merely draining the endometriotic cyst for treating pain and prevention of recurrent cysts.

Overall, fertility-preserving endometriosis surgery improves pain for 60% to 80% of women. After surgery, medical therapy may be needed to control symptoms of endometriosis because 40% to 80% of women experience recurrent pain symptoms within two years of surgery. Recurrent symptoms occur within 5 to 10 years in more than 50% of women after completing a 6-month course of medical treatment. Long-term management of endometriosis-related pain usually is necessary.

Hysterectomy (removal of the uterus) with removal of the ovaries is an effective approach to definitively treat endometriosis after childbearing is completed. This surgery provides final relief from endometriosis-related pain in more than 90% of women. In contrast, if one or both ovaries are preserved, there is a much greater chance that symptoms will recur, and additional surgery will be required. If needed, low-dose hormone therapy (estrogens or progestins) reduces hot flashes and menopausal symptoms that occur after hysterectomy with bilateral removal of the ovaries.

Pregnancy

Although it has not been proven that pregnancy is therapeutic, endometriosis often regresses during pregnancy. The hormonal environment produced by pregnancy may inhibit the condition. However, endometriosis often returns some time after pregnancy. A woman must carefully consider her immediate and long-term goals before choosing pregnancy as a treatment for endometriosis.

Team Approach to Pain

Some women continue to experience severe pain in spite of hormonal and surgical treatments. When pain persists, a multidisciplinary "team" approach may be helpful. This approach combines the expertise of a group of specialist physicians at a "pain center," along with mental health specialists, counsellors, and physical therapists. Nerve blocks, acupuncture, or other treatments may be beneficial.

TREATMENT OF INFERTILITY

The entire infertility evaluation should be completed before considering treatment for endometriosis. For infertile women with suspected minimal or mild endometriosis, a decision must be made whether to perform laparoscopy before starting treatments to enhance fertility. Clearly, factors such as a woman's age, duration of infertility, and pelvic pain must be considered. Other infertility factors may co-exist and impact success rates and treatment outcome.

Surgery for Infertility

Laparoscopic treatment of minimal and mild endometriosis has been associated with a small but significant improvement in pregnancy rates. In the largest study to date, 29% of women who had their endometriosis treated conceived within nine months, in contrast to only 17% of women whose endometriosis was diagnosed but not treated during laparoscopy. Although this is a modest treatment benefit, it suggests that there is a period of enhanced fertility after laparoscopic treatment of endometriosis. Treatment of moderate and severe endometriosis by laparoscopy and/or laparotomy increases pregnancy rates for women in whom no other causes of infertility have been found. There is no evidence that the outcome is improved by any specific method used to treat endometriosis, such as electrosurgery, excision, or ablation.

Medical Therapy for Infertility

Whereas medical therapy is effective for relieving pain associated with endometriosis, there is no clear evidence that medical treatment of endometriosis by birth control pills, progestins, or GnRH analogs improves fertility. Furthermore, surgery combined with medical therapy has not been shown to enhance fertility. Instead, medical treatment before or after surgery may delay unnecessarily further fertility therapy. Nevertheless, these treatments are effective in reducing pelvic pain and painful intercourse associated with endometriosis. Therefore, hormonal suppression may improve comfort and sexual activity in infertile women with endometriosis and pelvic pain, thereby improving fertility after the completion of the treatment.

Expectant Management

A "watchful waiting" approach, also called expectant management, may be an option for younger women after surgery for endometriosis. Up to 40% of women may conceive during the first 8 to 9 months after laparoscopic management of minimal or mild endometriosis. Fertility-enhancing

treatments may be offered as an alternative to expectant management or if pregnancy fails to occur within a reasonable time frame. A woman's age is an important factor in deciding upon specific treatment. Women aged 35 and older have lower fertility potential and higher chances of miscarriage. The decrease in fertility due to endometriosis and age may be additive. Therefore, more aggressive fertility treatments seem reasonable in older women with endometriosis. Watchful waiting is not a good option for women with infertility associated with severe endometriosis.

FERTILITY-ENHANCING TREATMENTS

Controlled Ovarian Stimulation and Intrauterine Insemination

Several studies have shown that fertility is enhanced in women with minimal or mild endometriosis by controlled ovarian stimulation (COS) with intrauterine insemination (IUI). This treatment also is called superovulation with IUI. Without treatment, women with minimal/mild endometriosis-related infertility have spontaneous pregnancy rates of 2% to 4.5% per month. The monthly pregnancy rate with intrauterine insemination alone for endometriosis is approximately 5%, and it is approximately 4% to 7% per month for clomiphene citrate, human menopausal gonadotropin (hMG), or follicle-stimulating hormone (FSH) injections when used without intrauterine insemination. However, clomiphene plus IUI improves the monthly pregnancy rates to approximately 9% to 10%, at least for the first 4 treatment cycles. Human menopausal hormone (hMG) or FSH plus IUI improves the success to 9% to 15% per month. COS with clomiphene plus IUI carries a 5% to 15% risk of twins. Multiple pregnancy and ovarian hyperstimulation are risks associated with hMG IUI therapy.

Assisted Reproductive Technology

In general, couples diagnosed with endometriosis have success rates with assisted reproductive technology (ART) procedures such as in vitro fertilization and embryo transfer (IVF-ET) that are similar to those for couples with other causes of infertility. Success rates for ART procedures vary greatly depending on a woman's age. IVF-ET is the most effective treatment for moderate or severe endometriosis, particularly if surgery fails to restore fertility. Some physicians recommend long-term pretreatment with GnRH analogs before starting IVF in women with severe endometriosis, since some, but not all, studies have shown that this approach may improve IVF-ET outcomes.

CONCLUSION

Endometriosis affects more than 176 million of women throughout the world. It demands professional attention, especially when fertility is impaired or pain affects a woman's lifestyle. Endometriosis may be a lifelong problem, because pain frequently recurs after therapy, and endometriomas also may recur. It, therefore, has the potential to disrupt quality of life and cause significant emotional distress. A woman's age, duration of infertility, pelvic pain, and stage of endometriosis are taken into account when formulating an infertility treatment plan. Choosing a qualified specialist - one who is familiar with the latest developments in management of endometriosis - is your best strategy. The physician you choose will recommend the most appropriate course of treatment based on your personal situation.