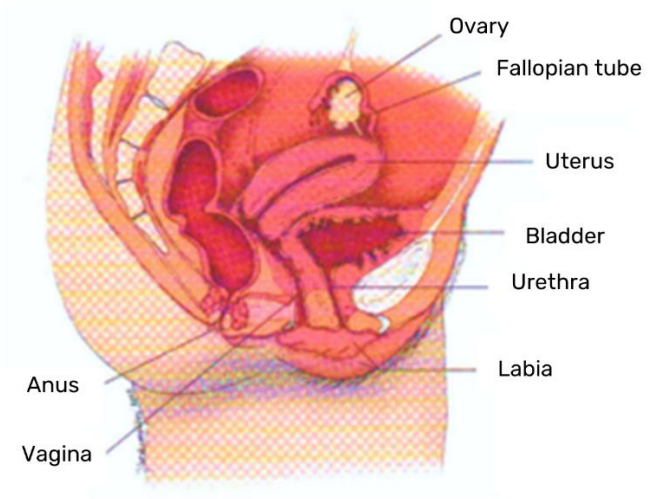
This instruction is intended for our patients who are in a care relationship. The Wellbeing. Services County of South West Finland. Turku University Hospital.

Endometriosis, surgical management

Endometriosis is a condition where tissue similar to the lining of the uterus grows outside the womb. There are three different types of endometriosis include superficial peritoneal endometriosis, endometriotic cysts that grow in the ovaries, and deeply infiltrating endometriosis, meaning endometriosis growths that infiltrate over 5 mm deep into other tissues. Endometriosis growths are most common in the peritoneal surface in the pelvis minor area, the ovaries, and the uterine ligaments.



Endometrium can also be present in:

- the bladder wall
- the intestines: on the surface or the walls of the large intestine, rectum, small intestine or the appendix
- the diaphragm
- the uterus
- the vaginal fornix
- the wall between the vagina and the rectum (this is called edometriosis of the recrovaginal septum)
- the surgical scars of the abdominal wall
- the surgical scars of the abdominal wall

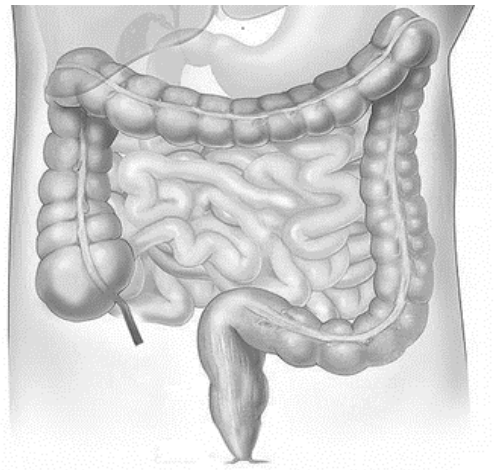
Surgical management of endometriosis – goals and surgical methods

Surgical treatment can be chosen if hormone treatment does not adequately ease the endometriosis symptoms. The endometriosis surgery aims to ease the pain caused by endometriosis and the goal is to remove all endometriosis growths. The surgery can also help with involuntary childlessness, because the surgery can improve the chances of spontaneous pregnancy as well as fertility treatment outcomes. At the discretion of the doctor performing the procedure, the uterus and the ovaries can be removed during the procedure if pregnancy is no longer an issue of concern.

The surgery can be performed as **a keyhole** (laparoscopic) **surgery or as an open surgery**. Both methods require general anesthesia. The benefits of keyhole surgery include fast recovery, lesser postoperative pain, short hospital stay and only short absence from work. Majority of surgeries are keyhole surgeries, but if the are many attachments or if the growths are situated in places which are hard to access, open surgery is chosen. The severity of the endometriosis can only be fully confirmed during the operation, and sometimes a surgery that has started as a keyhole surgery is converted to an open surgery during the operation.

Surgical treatment of intestinal endometriosis

The most common location for intestinal endometriosis growths are in the end of the large intestine and the rectum. Sometimes it is possible to peel the endometriosis growth off of the surface of the intestine. However, commonly a more extensive partial removal of the large intestine and rectum (called anterior resection) is required. This is performed by the colorectal surgeon, who takes part in the operation. After the infiltrated parts of the colon have been removed, the ends are connected together again. Small endometriosis growths can often be removed by partially removing the colon wall (discoid resection).



The can also be endometriotic tissue in the small intestine, and the affected part of the intestine can be removed. If there is endometriosis in the appendix, it is removed; if the appendix is normal, it is usually not removed.

Usually the intestines heal quickly after the surgery. If an intestinal seam has been made (anterior or discoid resection), you will be put on a liquid diet for the first postoperative day. After the first day, you will transition back to normal diet, if the recovery is progressing as expected. In the beginning you can experience problems with bowel function, such as poor or incomplete bowel movements, frequent bowel movements several times a day, and constipation. These symptoms will usually improve with time.

Surgical treatment of urinary track endometriosis

If endometriosis is located in the wall of the bladder, the affected part of the bladder wall is removed and the resulting hole is closed with sutures. Usually, the bladder recovers very well, but for the wound to heal, the bladder must remain empty in the beginning. For this reason, a catheter will be inserted, and you will need to wear it for about a week after the surgery. You can be discharged from the hospital with the catheter.

The ureters, which connect the kidneys to the bladder, travel through the pelvis minor, next to the ligaments of the uterus. Deep infiltrating endometriosis growths are usually located in the same area and they can compress the ureters and cause a condition called hydronephrosis (swelling of the kidney). During the surgery, the compressed ureter is freed or the damaged part of the ureter is removed. For the duration of the recovery, a stent (a thin plastic tube) is inserted into the ureter, so that urine can travel from the kidney to the bladder. The stent is removed 1 to 3 months after the operation using keyhole surgery. This operation does not require general anesthesia.

Risks associated with surgical management

Infections

Different infections are most common surgical complications. If there is a higher risk of infection associated with the surgery (for example bowel operation, removal of the uterus), you will receive a preventative course of antibiotics in the operating room.

The most common infection is a urinary tract infection, and the use of a catheter increases this risk. A wound infection is also common, but the risk of wound infection is significantly lower in keyhole surgery than in open surgery. If spraying the wound with water and cleaning the wound does not heal the infection, a course of antibiotics will be used to treat the infection.

Venous thrombosis

Surgical treatment always carries a risk of venous thrombosis (“blood clot”). Factors such as being overweight, smoking, using contraceptive pills and having hereditary tendency to form blood clots increase this risk further. During the surgery, your individual risk of having venous thrombosis is assessed. If you are considered to be at an increased risk, a treatment of injectable medicine to prevent venous thrombosis is started after the surgery, and it will last for 1 to 4 weeks.

Bleeding

Regardless of method, surgery always carries the risk of bleeding. If there is heavy bleeding during keyhole surgery, the surgery has to be converted to open surgery. The bleeding will be compensated for with blood transfusions, if necessary. Sometimes the bleeding will only become apparent after the surgery, in the recovery room or at the inpatient ward, and can require another surgery.

Attachments

Often, endometriosis forms attachments, which can make the surgical treatment more difficult. The surgical treatment itself can also cause attachments to form. The tendency to form attachments is different from person to person. The attachments are usually freed during the surgery, but is it is difficult to prevent them from forming again. To prevent the formation of attachments, it is possible to leave substances that prevent their formation into the abdominal cavity during the surgery. Attachments are mostly harmless, but they can cause symptoms such as pain and bowel blockages.

Colostomy

Bowel surgery carries a small risk of requiring a temporary colostomy, which is usually closed 2 to 3 months after the surgery. Bowel surgery also carries a small risk of the seam opening, which can cause peritonitis (infection of the inner lining of the stomach). Peritonitis caused by the opening of the intestinal seam is treated with a temporary colostomy.

Nerve damage

When deeply infiltrating endometriosis is treated surgically, the growths that are removed can be located in areas where the nerves of the large intestine, the pelvic floor, the bladder and the vagina are located. Surgical treatment can damage these nerves and cause temporary or permanent bowel or bladder dysfunction, such as the incomplete emptying of the bowel or the bladder, more frequent need to urinate, or difficulty to orgasm. Dysfunctions are rare and often temporary. The most common problem is a partial urinary retention, meaning partial emptying of

the bladder. In this case, you will be taught how you can catheter yourself a couple of times a day, until the situation improves.

Smoking

To make sure that the surgery and post-surgery recovery is successful, we recommend that you stop smoking well before your surgery. Smoking affects the whole body through circulation, slows down healing and recovery, and increases the risk of surgery complications significantly. For example, the healing of wounds and intestinal seams slows down, because the carbon monoxide of the tobacco displaces the oxygen in the oxygen transport protein, hemoglobin, which leads to decreased oxygenation of tissues. At the same time, nicotine constricts the blood vessels, further decreasing the flow of oxygen into the tissue. The tobacco smoke activates your body's blood clotting factors and significantly increases the risk of developing a postoperative venous thrombosis, also known as blood clot. Smoking increases the risk of experiencing increased postoperative pain, lessens the effectiveness of some pain medications, and can increase dependency on strong painkillers.

Surgical treatment – effect on pain

Endometriosis is a chronic disease, and it has no cure. However, both hormone medication and surgery can often alleviate the pain. The severity of the endometriosis does not always correlate directly with the severity of the pain. Even a very mild form of the disease can cause severe pain, whereas some patients with severe endometriosis have no symptoms at all.

The primary treatment for pain is usually hormonal medical management. After the hormone treatment has finished, pain returns within a year in about 10 to 20 percent of patients, and within 5 years in as many as 75 percent of patients. Most hormone treatments are also suitable for long-term use. All hormonal treatment also prevent pregnancy, which is why medical management is not suitable for patients who wish to conceive.

For some patients, surgical management offers a more permanent pain relief than medical management. According to studies, 80 to 90 percent of patients report less pain after surgery. Within three years, the pain has returned in about 1 in 4 patients, and as many as half of patients end up having a second surgery within 5 years. Medical management can be continued after the surgery, or it can be started to prevent the endometriosis and the pain from reoccurring. The risk of reoccurrence of ovarian endometriosis in particular can be decreased by adopting postoperative medical management.

Surgical management and involuntary childlessness

The effect of mild endometriosis on women's fertility is not fully known. There are some indicators that surgical management of mild endometriosis can improve fertility. In cases of mild endometriosis, it is possible to wait for a few months after surgery and see if spontaneous pregnancy occurs. If pregnancy has not occurred, fertility treatments can be started. The outcomes of fertility treatments in patients with endometriosis are comparable with the outcomes of fertility treatments in patients with no endometriosis.

Usually, moderately severe and severe endometriosis decrease fertility significantly. In these cases, the best fertility outcomes are achieved using in vitro fertilization treatment. Surgical treatment is only considered for endometriosis patients who are undergoing fertility treatments when it is necessary due to pain. Large ovarian cysts are also usually removed, if possible, before the in vitro fertility treatments are started, if they make treatment more difficult. After surgical treatment, we aim to start the in vitro fertility treatment as soon as possible, even as soon as within the next few months. Hormonal medical treatment is usually used after the surgical treatment before the fertility treatment is started to prevent the endometriosis from worsening during this period.

You can find more information on endometriosis from www.terveyskylä.fi /Naistalo (available in Finnish and Swedish) and www.korento.fi (available in Finnish).