Laparoscopic surgery for endometriosis

Introduction

This leaflet covers laparoscopic surgery for endometriosis. It provides information for women and those assigned female at birth who have been offered or are considering laparoscopic surgery for the treatment of endometriosis. Medical terms have been highlighted in italics.

Diagnosis of endometriosis

Endometriosis is best diagnosed and assessed by actually looking at the disease. This is the only means of making a definite diagnosis. *Laparoscopy* is an operation in which a small telescope (*laparoscope*) is inserted into the abdomen to look directly at the tissues. A laparoscopy is carried out under general anaesthetic. At the same time various procedures can be performed in order to destroy or remove the endometriosis, endometriotic cysts and release scar tissue (*adhesions*).

Is laparoscopy always needed to diagnose endometriosis?

Laparoscopy is the best test to diagnose endometriosis. Endometriosis can sometimes be felt on vaginal examination or an endometriotic cyst seen on an ultrasound scan. A normal vaginal examination or a normal scan does not exclude endometriosis. A blood test measuring a protein, CA 125, may assist, however a raised level is not specific to endometriosis. It indicates irritation or inflammation inside the body and can be raised in endometriosis, as well as appendicitis, pelvic infection and ovarian cysts. A raised level does not mean a diagnosis of cancer.

Laparoscopic surgery is only one type of surgical procedure for endometriosis. It does not, as is commonly thought, turn a major operation into a minor one. It has the advantage of smaller cuts on the tummy (*abdomen*) and slightly shorter recovery than a bikini line cut (*laparotomy*). Laparoscopic surgery may not be suitable for all patients. Drugs may be combined with surgery and also importantly, can be taken both before and after surgery, in order to try and delay or prevent recurrence of the disease and symptoms. This may be useful for those who do not wish to conceive immediately or as a pain management strategy.

Laparoscopy

Hospital admission is often just for the day (day case surgery) but take an overnight bag just in case you are advised to stay. You will be given a general anaesthetic. Before the anaesthetic you must have nothing to eat or drink for at least 6 hours. Your hospital will give you detailed information about this prior to your operation. Some hospitals also require attendance at a pre-op assessment clinic where, for example, your blood pressure and/or other tests may be performed prior to your surgery. This is so that both the hospital and you are prepared for your specific operation.

At the start of the operation, the bladder is emptied (*catheterised*). A fine needle is then inserted inside the belly button (*umbilicus*) and the abdomen is filled with carbon dioxide gas. The gas flow is carefully monitored throughout. The carbon dioxide gas lifts the tummy wall away from the bowel to make introduction of the laparoscope safer. Two other small (approximately 1cm) cuts (*incisions)* may be made, usually one just inside the belly button and one on the bikini line for an instrument to assist with visualising the organs. A careful inspection is made of the womb (*uterus*), ovaries, fallopian tubes, Pouch of Douglas, bowel, bladder and all surrounding areas and a record of the severity of the disease is made by either drawing, photographs or video. Many different appearances of endometriosis have now been recognised. In some cases, if the tissues are stuck together (*adhesions*), it may not be possible to see some or all of these organs.

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Success rates of laparoscopic surgery

Different rates are reported, but studies suggest a 62.5% improvement or resolution of pain at 6 months, with 55% still improved at 12 months. Failure to respond to surgical treatment may be due to incomplete removal or destruction of the disease or because of recurrence. If endometriosis is severe and affecting other organs such as the bowel, it may not always be possible to remove all of the endometriosis during one laparoscopy, as occasionally other consultants (e.g. colorectal surgeon, urologist) may need to be present.

The recurrence rate of endometriosis is unpredictable, but is generally reported to be in the range of 5-20% per year. Those wishing to get pregnant should start trying as soon as possible after surgery. Those wishing to defer conception should consider medical or drug treatment e.g. continuous combined contraceptive pill, continuous progestogen therapy, or the Mirena coil, in order to try and prevent or delay recurrence.

Laparoscopic surgery techniques

Research has shown that laparoscopic surgery can improve the chance of pregnancy and reduce pain. For surgery to treat endometriosis, one or two further small incisions may be made on the abdomen. This is for the introduction of other instruments required for holding tissues, destroying or removing endometriosis, washing/cooling tissues, sucking out smoke, blood and/or washing fluid. At the end of the operation, the small cuts will be closed with a stitch, tape or glue. The stitches will either dissolve or can be removed after a few days.

The aim of the surgery is to:

- destroy or remove areas of endometriosis
- destroy or remove ovarian endometriotic cysts, by cutting away or excising the cyst wall (*capsule*) or opening the cyst, draining the chocolate fluid and destroying the capsule
- divide adhesions to free tissues or improve fertility

There are now a number of different techniques used by surgeons treating endometriosis. The type of surgery chosen by your specialist will depend on their training, experience, equipment and your disease. What treatment can and should be carried out will be discussed with you before your operation. Not all techniques are available at all hospitals.

Laser ablation/excision

The word laser stands for Light Amplification by Stimulated Emission of Radiation i.e. a thin beam of concentrated light that is an intense energy beam and burns tissues. There are different types of lasers including carbon dioxide, KTP, Yag, Argon, Diode. The laser is very precise, is able to access difficult areas and produces less damage to surrounding tissues. It seals blood vessels and can therefore minimise bleeding.

Electrocoagulation/Diathermy

This is the use of electrical heat as used in general surgery. It can be used to destroy and remove endometriosis, as well as control bleeding.

Excision Surgery

This involves actually cutting out areas of endometriosis using either scissors or lasers.

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Helica Thermal Coagulator
This uses Helium gas and a small electric current to dry out endometriosis using a process called *fulguration*.

Harmonic Scalpel/CUSA (cavitron ultrasonic surgical aspirator)
These are devices with a vibration tip and can be used in the treatment of endometriosis.

Risks of laparoscopy and laparoscopic surgery
Laparoscopic surgery does not convert a major operation into a minor one. The surgery is still considered major, but the recovery time is quicker, because of the smaller incisions.

Although laparoscopy & laparoscopic surgery are regularly and frequently performed, there are risks attached. Most of these are minor, but others are more serious. Any situation where it is not safe to continue with laparoscopic surgery requires the operation to be changed to 'open surgery' (*laparotomy*). Out of every 1,000 people undergoing diagnostic laparoscopy, three will require laparotomy to repair injury. This means any woman undergoing laparoscopic surgery should understand that it is possible to awake after the operation with a larger *incision* on her tummy. In this situation, which may be life-threatening, it will not be possible to wake the patient up to discuss the options. Clearly, recovery from a more major operation will take longer, with possibly up to a week in hospital and 6-8 weeks recovery at home.

Other rare complications include failure to gain entry into the body (*abdominal*) cavity and failure to identify disease.

Infection (stitches or bladder (*cystitis*))	1 in 20
Bruise (*wound haematoma*)	1 in 20
Perforation of the uterus	1 in 200
Bleeding inside the tummy (*haemorrhage*)	1 in 200
Clot in a vein of the leg or lung (*thrombosis*)	1 in 200
Bladder perforation	1 in 200
Bowel perforation	1 in 250
Damage to a major blood vessel	1 in 500
Death	1 in 12,000

One in every 12,000 undergoing diagnostic laparoscopy dies as a result of complications. Surgery is more difficult, and therefore more risky, in those who are overweight or who have abdominal scars from previous surgery. Furthermore, obesity can limit the type of surgery performed and its effectiveness.

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After the operation

The anaesthetic finishes as soon as the operation is completed and waking occurs quickly. The anaesthetist will have given painkillers, so that they are already working when you wake up.

You will feel sore around the incisions and sometimes have a period-like pelvic pain. There may be some swelling or bruising around the wounds. The carbon dioxide gas is removed, but may cause a feeling of bloating and referred discomfort in your ribs and shoulders. This is normal and will disappear over a few days as the gas slowly reabsorbs. The discomfort can be relieved by painkillers. Fluid may be left inside the abdomen to prevent the formation of adhesions (and will be absorbed and removed over the following 48 hours). You may feel sick (*nausea*) or even be sick (*vomit*). This can be countered with an anti-sickness injection. It is important that you tell the nurses if you are experiencing any pain or nausea so that they can make you comfortable as quickly as possible.

Some patients feel well enough to go home the same day, but this will also depend on the extent of the surgery. Sometimes patients may be advised to stay overnight. It is essential to be accompanied home and to avoid driving or operating machinery for 48 hours. The time required off work will depend on the amount of surgery performed and should be discussed with your doctor but will usually be about 2 weeks. If more extensive work is undertaken during the laparoscopy, you may need more time off work. Also, the rate of recovery varies from one person to the next so you need to be guided by how you feel as well as the advice of your doctors.

At home you can take painkillers such as paracetamol if needed. Some patients may be given a course of antibiotic tablets to take home. Slight bleeding from the vagina is normal and is nothing to worry about. You can have intercourse again as soon as you are comfortable. The cuts should be kept clean and dried carefully after a bath or shower. Occasionally, wounds can become infected; if the cuts become red and inflamed or there is an unusual discharge, you should contact your GP or practice nurse for advice.

Sometimes you may receive prescription painkillers after surgery; if you are prescribed medication containing codeine, this can cause constipation so you need to take extra care to eat a well-balanced high fibre diet. You should discuss any concerns about this with your GP.

It is normal to feel sore after the operation. You should start to feel better within two weeks although this may take longer depending on the amount of work undertaken during surgery. It may take up to six months to feel the full benefit from the surgery.

Reasons to contact the ward or your GP after laparoscopic surgery

- Severe pain or fever after going home
- Nausea or vomiting
- Increased bleeding from the cuts
- One or more of the cuts become painful
- Smelly vaginal discharge
- Smelly discharge from the cuts

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Helpline: 0808 808 2227

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t: 020 7222 2781 information@endometriosis-uk.org www.endometriosis-uk.org

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