Removal of a retropubic mesh sling
Information for patients

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BSUG

Patient Information Forum

The British Association of Urological Surgeons

This information is for women who are thinking about having surgery to remove a retropubic mesh sling – for example TVT. It is meant to help you make a decision about whether or not surgery is right for you and is to be used alongside the NICE PDA for mesh removal. It can be used as a basis for discussion with your GP, hospital care team and family or friends.

What is Mesh?

Mesh is netting woven from man-made materials. Surgeons use mesh to add support to parts of the body that have become weak. Other terms used for mesh include tape, ribbon, sling and hammock. In women, mesh has been used since the late 1990s to treat:

- Weak bladder problems, also called stress urinary incontinence.
- Problems with weak pelvic supporting tissues, called pelvic organ prolapse.

Mesh is meant to stay in place once fitted. This means it can be difficult or even impossible to take it all out.

COMMON TERMS EXPLAINED

Conservative management
Treatment or management that does not involve surgery.

Mesh sling
Mesh used to treat bladder problems of stress urinary incontinence is called mesh sling. A flat strip of woven synthetic material, usually made of polypropylene, which is placed surgically below the urethra (suburethral) for the treatment of stress urinary incontinence. Mesh slings are often inserted using trocars (needles) and can be placed behind the pubic bone (via the retropubic route) or through a part of the pelvis called the obturator foramen (via the trans-obturator route). Some mesh slings are also sometimes inserted using only a single vaginal incision (so called 'single-incision mini-slings').
These devices are also commonly referred to as 'tapes'.

Mesh erosion
This is a general term for any synthetic mesh or mesh sling that is found perforating an organ after surgery, such as the urinary tract or bowel. This term is also used to refer to mesh exposure or mesh extrusion. See Mesh exposure, Mesh extrusion, Perforation.

Mesh exposure
Mesh or mesh sling that is visible in the vagina or rectum. This can be asymptomatic (when the woman is not aware/ bothered by the potential problem) or there may be symptoms such as pain or bleeding. See Mesh erosion, Mesh extrusion, Perforation.

Mesh extrusion
Passage of the mesh sling gradually out of a body structure or tissue.
See Mesh erosion, Mesh exposure, Perforation.

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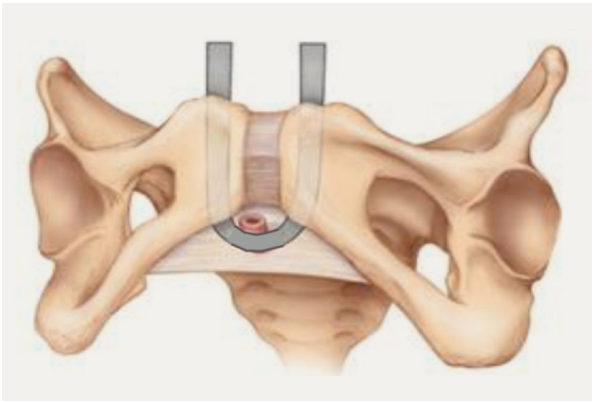
Perforation
Mesh or mesh sling that is in an organ. This can happen when the mesh is put into the body but can also happen sometime afterwards.

Fistula
An abnormal connection that forms between 2 hollow spaces in the body, such as bladder, intestines, or blood vessels. They can form after surgery, injury, infection or inflammation.

Multidisciplinary team (MDT)
A team of healthcare professionals that is formed to help diagnose and/or treat complex conditions. MDTs are generally used when it is suitable for care to be provided on an individual case basis and when the complex nature of the condition requires input from many professionals in different areas of medicine.

Obturator foramen
Openings in the pelvis that lie to the left and right of the pubic bone. Some surgical procedures for stress urinary incontinence are inserted through the muscles and tissues which lie over the obturator foramen (for example, a trans-obturator mid-urethral mesh sling).

Retropubic mesh sling



A method to insert a synthetic suburethral mesh sling to treat the symptoms of stress urinary incontinence. A needle is inserted upwards through a small incision in the vaginal wall below the urethra, passing behind the pubic bone and through the abdominal wall. Each arm of the mesh goes through the space behind the pubic bone and into the abdominal muscles in a U shape and supports the urethra (e.g. TVT, IVS). This is also known as a retropubic TVT, tension free vaginal mesh tape and retropubic mid-urethral mesh sling.

Single-incision mini-sling (SIMS)
A surgical procedure to insert a synthetic suburethral mesh sling to treat the symptoms of stress urinary incontinence. This is also known as a mini-sling. The slings are shorter than retropubic and trans-obturator mesh slings and are inserted using only a single incision in the vagina. The sling is usually attached to the tissues at each end with a small plastic anchor. There are several designs of mini-slings, each of which have different tissue anchor or fixation points. e.g. Non-adjustable: Contasure Needless, TVT-Secur, MiniArc, Ophira; Adjustable: Ajust, trans-obturator (TOA).

Trans-obturator mesh sling
A method to insert a synthetic suburethral mesh sling to treat the symptoms of stress urinary incontinence. A needle like device is used to insert a mesh sling horizontally through the obturator foramen from the vagina to the inner thigh. Each arm of the mesh lies in the muscles that overlie the obturator foramen and in the muscles of the upper inner thigh. (e.g.TVT-O, TOT, MONARC, Obtape).

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What are the different types of mesh sling removal surgery?

If you are reading this leaflet because you are thinking about having a mesh sling removed, you will probably be having problems. There are treatments for some of these complications that do not use surgery. For more information on other types of treatment

No two cases are the same. Both the problems and possible answers to those problems will be different for each woman. The information in this leaflet is only a guide to helping you decide whether or not surgery is the right choice for you.

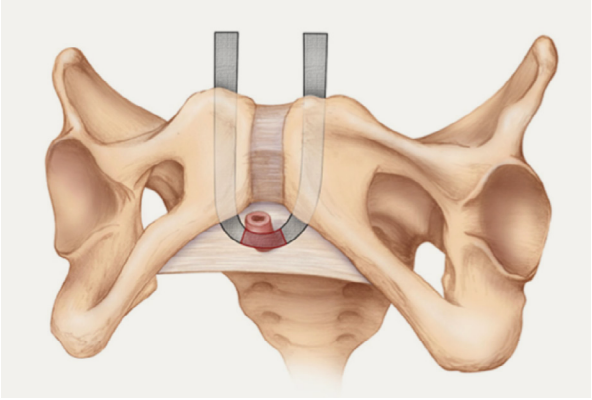
Surgery to remove mesh can sometimes be very complicated and may need to be done by surgeons with special expertise. If this expertise is not available in your own clinical team, they may recommend that you have your surgery in another mesh centre.

The different types are explained below.

MESH SLING DIVISION

The mesh sling can be divided or cut without removing any of the mesh by an operation through the vagina. This can help with difficulty emptying the bladder if the mesh sling is thought to be too tight. It can also relieve tension on the mesh that might be causing pain. Mesh sling division is usually done as a day case under local, regional (spinal) or general anaesthetic. **After this operation it is often still possible to find and remove the remaining mesh if needed.**

REMOVAL OF PART OF THE VAGINAL PORTION OF A RETROPUBIC MESH SLING



Part of the mesh sling can be removed by an operation through the vagina. This is usually done if the mesh has come through the vaginal skin (vaginal mesh exposure or extrusion). It usually means removing a few fibres or a few centimetres of mesh. It can be done as a day case under local, regional (spinal) or general anaesthetic. **After this operation it is often still possible to find and remove the remaining mesh if needed.**

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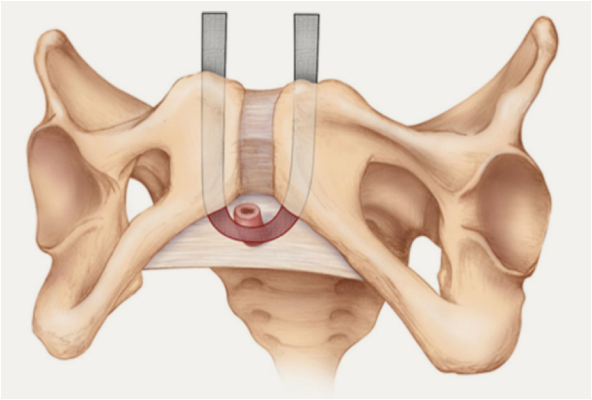
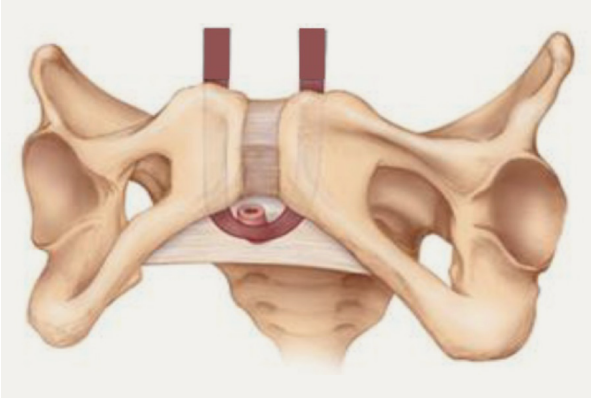
REMOVAL OF ALL OF THE VAGINAL PORTION OF A RETROPUBIC MESH SLING



The whole of the mesh under the skin of the vagina (about 5–8cm in length) can be taken out through a cut in the vagina. The mesh will be found, divided and then carefully removed from the urethra and the surrounding area as far back as the pubic bone. This operation may require an overnight stay in hospital. It is done under general or regional (spinal) anaesthetic. A bandage called a pack may be placed inside the vagina at the end of the operation to help stop bleeding. A catheter may be left in the bladder overnight. The pack and catheter are usually removed the following day. Although all of the vaginal part of the mesh is removed during this operation, the mesh arms that pass upwards behind the pubic bone and through the abdominal wall is left behind. **It is usually possible to remove the remaining mesh later (see Complete removal of a retropubic mesh sling).**

COMPLETE REMOVAL OF A RETROPUBIC MESH SLING (FROM THE VAGINA AND BEHIND THE PUBIC BONE)



Some women decide to have the mesh removed from behind the pubic bone at the same time as vaginal mesh removal, so that all of the mesh sling is removed from the body. This is a major procedure meaning several days in hospital and at least a month of recovery time before wounds are healed and any stitches are dissolved.

Retropubic (TVT) mesh slings can usually be removed completely with a combined vaginal and abdominal operation. The part of the mesh sling that goes behind the pubic bone can be removed later even if the vaginal part of the mesh has already been removed.

Complete removal of a retropubic mesh sling is done through a cut in the vagina and a cut or cuts in the tummy. Through the vaginal cut, the mesh will be identified, divided and then carefully removed from the urethra and the surrounding area as far back as the pubic bone. Cuts in the tummy are needed to remove the mesh sling from behind the pubic bone. Some surgeons remove the mesh through one cut in the tummy (open surgery) and other surgeons make several small cuts on the tummy and use keyhole surgery to remove the mesh from behind the pubic bone. If you are having keyhole surgery, an extra cut may be needed to remove the mesh as it goes through the muscles of your tummy. Not all women choose to have this small piece of mesh removed when they are having a keyhole operation.

Mesh removal from behind the pubic bone will mean a hospital stay of between two and four days. You will need a general anaesthetic. Sometimes a bandage (pack) is placed inside the vagina at the end of the operation if the vaginal part of the mesh has been removed at the same time, to help stop bleeding. A catheter is left in the bladder for at least one night, though may sometimes be required

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for longer. Your surgeon may also insert a thin plastic tube (a drain) into the cut above the pubic bone to draw blood away from the site at the end of the operation. Drains, catheter and pack are usually removed one to two days after surgery. The recovery time after complete mesh removal surgery is usually around four to six weeks.

REMOVAL OF MESH FROM THE URETHRA

Mesh that has gone into the urethra (extrusion or perforation) is a serious complication. The mesh is usually removed by an operation through the vagina. This involves opening up the vagina and urethra to remove the mesh and then repairing the holes in the urethra and the vagina. The urethra is a very delicate organ, and the repair may need to be reinforced with a Martius graft to help it to heal. A Martius graft is a piece of fat from inside the labia majora which is tunnelled under the skin to cover the urethral repair to help it to heal.

You may need to stay in hospital for two to four days. The operation can be done under general or regional (spinal) anaesthesia.

If mesh is removed from the urethra, you will need a catheter in the bladder for between one and three weeks. This is to allow the urethral tissues to heal fully. If the tissues do not heal properly, there is a risk that that a hole (fistula) will develop between the bladder and the vagina. This can cause severe and constant leakage of urine. This would usually need more surgery to repair it.

Sometimes mesh in the urethra can be removed without opening the urethra, either by using a laser in the urethra or by cutting the mesh from the inside of the urethra. These are smaller procedures than removing the mesh through the vagina and can be done as a day case. But this means mesh can sometimes be left behind in the wall of the urethra and more surgery may be needed.

REMOVAL OF MESH FROM THE BLADDER

Mesh that has gone into the bladder (extrusion or perforation) is a serious complication. The mesh can be removed from the bladder using either keyhole or open surgery. During this operation the bladder is opened to remove the mesh and the bladder is then repaired with stitches. Removal of the rest of the mesh from the vagina or from behind the pubic bone can be performed at the same time as removal of mesh from the bladder.

A catheter is left in for one to three weeks after this surgery to allow the bladder to heal fully. If the bladder does not heal properly, there is a risk that a hole (fistula) will develop between the bladder and the vagina. A fistula would cause severe and constant leakage of urine. If this happened, you would usually need further surgery. The recovery time for wound to heal and stitches to dissolve after mesh removal from the bladder is usually around four to six weeks.

Sometimes it is possible to remove mesh in the bladder using a laser during a telescopic examination of your bladder (cystoscopy). This can usually be done as a day case. This approach is not always possible and there is a risk that mesh will be left behind in the wall of the bladder and more surgery to remove it may be needed.

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Complications of surgical removal of a retropubic mesh sling

There are some things that you can do before you have your operation to help with your recovery. Keeping as fit and active as possible before surgery and losing some weight (if you are overweight) can be beneficial and may lower the risk of complications. If you have any other conditions, such as diabetes or constipation, you should seek advice from your GP on improving these as much as possible before your operation. If you feel your mental well-being is affected please discuss this with your treating consultant.

Surgical removal of a mesh sling can make some problems worse. Because of this, mesh removal surgery may not be the right treatment choice for you. The risks of mesh removal surgery are different for each woman and depend on factors such as:

- How close the mesh is to your urethra or bladder.
- The amount of mesh to be removed.
- Previous mesh removal surgery.
- The amount of scarring.
- If you have more than one mesh implant in place.
- The presence or suspicion of infection around the mesh.

Mesh removal may not help all or even any of the symptoms you feel are related to having a mesh sling. Weak bladder symptoms may not improve, and new symptoms may develop. It is possible that the after effects of mesh removal surgery can cause worse problems than the original mesh complication. It is important to talk with your surgical team about how this might affect you. Even if symptoms do not improve or if they get worse, some women feel very relieved that the mesh implant has been removed from their body.

POSSIBLE COMPLICATIONS OF SURGERY

- There is a risk of injury to the urethra or bladder. If this happens, the injury will need to be repaired immediately. If the injury does not heal properly, a fistula can develop. A fistula is a connection between the urethra or bladder and the vagina and can cause severe and persistent leakage of urine. This is a serious complication which usually needs further surgery.

- There is a risk of significant bleeding requiring blood transfusion, especially with total mesh removal surgery.

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COMPLICATIONS AFTER YOUR SURGERY (SHORT-TERM)

- Post-operative pain may be worse than the pain before surgery, especially if you have long-term pain affecting other parts of your body.
- There is a risk of a lot of bruising and of your wounds becoming infected.
- If you have cuts on your tummy to remove the mesh, you can develop a bulge in the wound (hernia) which may need to be repaired with more surgery.
- All surgery carries a risk of developing a blood clot in your leg or lung (deep vein thrombosis – DVT and pulmonary embolism - PE). The risk of this complication is higher in women having total mesh removal as the operating time is longer and you may be less mobile for a few weeks after surgery.

COMPLICATIONS AFTER YOUR SURGERY (LONG TERM)

- There is a significant chance (over 50%) that your original urinary leakage symptoms will come back after division or removal of the mesh sling. It is difficult to know how likely this is, but the risk is higher the more mesh that is removed. It is possible to have surgery for this at the same time as mesh removal surgery. Your surgeon will discuss this possibility with you. Many women prefer to wait until they have recovered from mesh removal surgery before having surgery for bladder problems.
- **Pain may improve following mesh removal surgery but can return a few months later.** There is no guarantee that mesh removal surgery will improve symptoms of pain in the long term.
- You might need further treatment for complications after mesh removal surgery or for bladder problems.
- If you have not had all of the mesh removed, you may have more symptoms because of the mesh. If this happens, you may need more surgery to remove the mesh. **Your surgeon must explain how much mesh has been taken out during your operation and, if there is any left, where it is.**

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How will I feel after my surgery?

Your recovery will depend on the type of surgery you have had. It can be several months before you feel back to normal especially after surgery with a general anaesthetic and where you had to stay in hospital for several days.

INITIAL RECOVERY

- Your incisions may be uncomfortable for up to eight weeks; simple painkillers such as paracetamol and ibuprofen can help with this.
- You may be discharged with a catheter in your bladder.
- For the first few weeks, you should avoid any strenuous activity or heavy lifting. For example, no more than you can easily lift with one hand.
- After four weeks, you can go back to everyday activities if you feel well enough.
- For more strenuous activity such as running, gym exercises or at a very physical job, you should wait at least six weeks before gradually introducing exercise.
- Avoid vaginal intercourse for at least six weeks after the procedure (see below).
- You may be referred to the pelvic floor physiotherapist for pelvic floor exercises after your surgery to strengthen the pelvic floor and help with any weak bladder problems.
- You may be offered referral to a clinical psychologist to help you deal with the trauma of mesh complications and help you on the road to recovery after surgery.

PAIN

It is normal to have some pain after surgery. The aim of pain medications is to make you feel comfortable enough to get up, wash, get dressed, and do simple tasks in your home.

The following recommendations are general guidelines for taking pain medications:

- Unless your doctor gives you a different plan, paracetamol and ibuprofen are the most useful medicines to manage your pain.
- You may also get a prescription for an opioid such as codeine, hydrocodone or oxycodone. This should be added as needed to reduce pain that is not adequately relieved by ibuprofen and paracetamol. If you are given an opioid, you should also be prescribed a laxative as most people become constipated on these tablets.
- Painkillers are usually most effective in the first few weeks after surgery if you take them regularly rather than only when your pain is severe.
- If you have already been taking strong painkillers before your surgery, you may be seen by a pain specialist before surgery who can help with planning your pain relief after your operation.

BLEEDING

There is a risk of bleeding during the operation for complete removal of a retropubic mesh sling. You might see a lot of bruising afterwards.

If you have had a cut in the vagina to remove the mesh sling, some spotting of pink or red blood from the vagina is normal and can last for six to eight weeks. Brown-coloured discharge that gradually changes to a light yellow or cream colour is also normal and can last for up to eight weeks. The brownish discharge is old blood and often has a strong smell. This is normal.

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BLADDER FUNCTION

- You may be sent home with a catheter in your bladder. Before you go home, you will be told how to manage this and when the catheter is to be removed.
- It is normal for your bladder to behave differently after mesh removal surgery. You may notice that you have to wait before you start to pass urine or that your urine stream is slower. This will gradually get better, but it may take up several months before you are back to normal. Try to relax when sitting on the toilet and allow a little longer.
- Some women have urinary leakage after surgery. Often this gets better in the first few weeks but if it does not, tell your hospital treatment team when you see them after surgery.
- Drinking more water than usual will not help your bladder recover faster.

BOWEL FUNCTION

- Constipation is common after mesh removal surgery and can be made worse by pain medication. It is important to prevent constipation and keep your stools soft because straining can damage the stitches.
- You may be given a course of laxatives to take home with you. If not or you have difficulty opening your bowels, see your GP.
- Go for short walks if you can. Walking and being active will help you have a bowel movement.

If you feel worried about any of the above or something doesn't feel right, get in touch with your hospital care team or GP.

MENTAL HEALTH

You may feel anxious about your surgery or further treatment and may wish to talk to an independent person about your concerns. Everyone reacts differently. Sometimes people need additional help to talk through fears, worries, and stress caused by their experience. We would like to reassure you that additional help and support will be offered to you. Your Consultant will be able to advise you about what help is available for you.

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How successful is mesh removal surgery

- Around 80-90% of women are able to pass urine without difficulty after they have had surgery to divide or remove all or part of the mesh sling.

- Long-standing vaginal or pelvic pain related to a mesh sling will be relieved or greatly improved in about 50% of women after surgery. It is not clear why pain persists or comes back some time after removal surgery. It may be because the nerves have become sensitised. Once the mesh is removed, pain that is not improved or that comes back will be managed with the pain team.

- There is currently very little information about whether other symptoms or conditions such as UTIs, pain elsewhere in the body, foreign body reactions and autoimmune disorders would be helped by removing all or some of the mesh.

WHO SHOULD I CONTACT IF I HAVE PROBLEMS AFTER MESH REMOVAL SURGERY?

Before you leave hospital, your clinical team will let you know how to get back in touch with the mesh centre if you have any problems in the initial weeks after surgery.

If there is an emergency, or you have a problem out of normal office hours, you may need to see your GP or attend your local walk-in centre or Accident and Emergency department.

You should contact your GP or walk in centre if:
- you think you have a urine or wound infection and do not feel very unwell or have a temperature
- you are worried about light vaginal bleeding or discharge
- You have problems with constipation
- You need additional painkillers or other prescribed medication.

You should seek immediate attention at your nearest accident and emergency department if:
- You have been sent home with a catheter and it is blocked (it has stopped draining urine) or falls out
- You are unable to pass urine or it becomes very difficult to pass urine (urinary retention)
- You have vaginal bleeding heavier than a period which is persisting
- You think you have a urine or wound infection and a high temperature (over 38 degrees) and feel unwell.

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What activities can I do after my surgery?

Listen to your body and gradually increase what you do. If you start to feel tired, sore or in pain, lie down to rest.

- Exercise is important for a healthy recovery. Start some physical activity, such as walking, as soon as possible after surgery. Start with short walks and gradually increase the distance and length of time that you walk.

- You can be referred for pelvic floor physiotherapy locally by your surgeon or GP after about three months.

- **Driving:** Do not drive while you are taking prescription pain medications. After you stop them, you may drive when you are sure you can move as quickly as you need to in an emergency without hurting yourself. Before you drive, sit behind the wheel and practice emergency stops and turning to look over your shoulder. If this hurts, wait and check again in a few more days. It is your responsibility to make sure you are fit to drive after any surgical procedure as this may affect your insurance.

- **Lifting:** Unless you are given other instructions, for six weeks after your surgery do not lift anything that you cannot easily lift with one hand.

- **Sex:** After your surgery, your hospital care team will talk to you about how long you may need to wait until you can start having vaginal sex. When you feel ready, things may feel different than before the surgery. The first few times may be uncomfortable. Talk to your partner about how you feel. Your hospital care team can also provide support if things do not improve.

- **Work:** The amount of time you will be off work after surgery depends on both your surgery and your job. This should have been discussed with your doctor before surgery. If you need a sick note, ask your doctor for one before you leave hospital.

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WHAT I WOULD LIKE TO ACHIEVE/ WANT FROM MESH REMOVAL SURGERY – MY GOALS

After you have considered carefully which treatments might be best for you, use this section to write down your thoughts about each treatment option. You may find it helpful to complete these sections with your doctor.

1. Which specific symptoms that cause you the most distress, are you hoping will improve after mesh removal?

2. Do you know the benefits and risks of each option?

3. Are you clear about which benefits, and risks matter most to you?

4. Do you have enough support and advice to make a choice?

5. Do you feel sure about the best choice for you?

6. What complications concern you the most about your choice?

7. Do you understand that during surgery, it may not be possible for the surgeon to remove all of the mesh?

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CONSULTANT COMMENTS

This section can be used for the doctor to write down comments about mesh removal surgery that are specific to you personally. This can be done after you have discussed the options with your doctor.

1. Which symptoms are likely to be addressed by having mesh removed?

2. Which type of mesh removal do you feel is most appropriate and why?

3. Have the different mesh removal choices and the pros and cons of each been explained. Also, that it is not always possible to remove all the mesh?

4. Have other goals of surgery been explored?

5. Are there any specific recommendations to help recovery after surgery?

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