



North Bristol
NHS Trust

Service:
General Surgery

Having a complex abdominal wall operation



This information leaflet has been created by the Southmead specialist complex surgeons:



Patient name:

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.....

Hernia type:

Incisional

Peri-umbilical

Epigastric

Other complex:

Complexity:

Large-sized hernia,

Loss of domain >20 %

Parastomal, lumbar, lateral and subcostal locations of hernias

Full-thickness abdominal wall defects

Distorted anatomy

Surgical wound CDC class 2 or more or none healing skin

Presence of enterocutaneous fistula

Patient history and risk factors

Recurrent hernia after an earlier mesh repair or component separation

Comorbidities/risk factors that impair wound healing

Increased intra-abdominal pressure: obesity, COPD

Previous wound dehiscence / mesh infection / mesh removal

Multiple hernia defects (e.g., 'battle-scarred abdomen')

Pre-op requirements:

Stop smoking: yes / no

Diabetic control target – HbA1c

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BM.....

Weight loss target (BMI or KG)

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Personal quoted risks rates:

Wound problems

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Overall other complications:

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.....

.....

Death:

.....

What is an incisional/complex hernia?

An incisional or complex hernia occurs when the layers of muscle of the belly wall split apart, either at a site of previous surgery or for complex reasons, leaving a gap through which the contents of the abdominal cavity protrude. This is what the lump or bulge is, at the site of your 'hernia'. These are much more complicated than simple groin or abdominal wall hernias.

What is a complex abdominal wall operation?

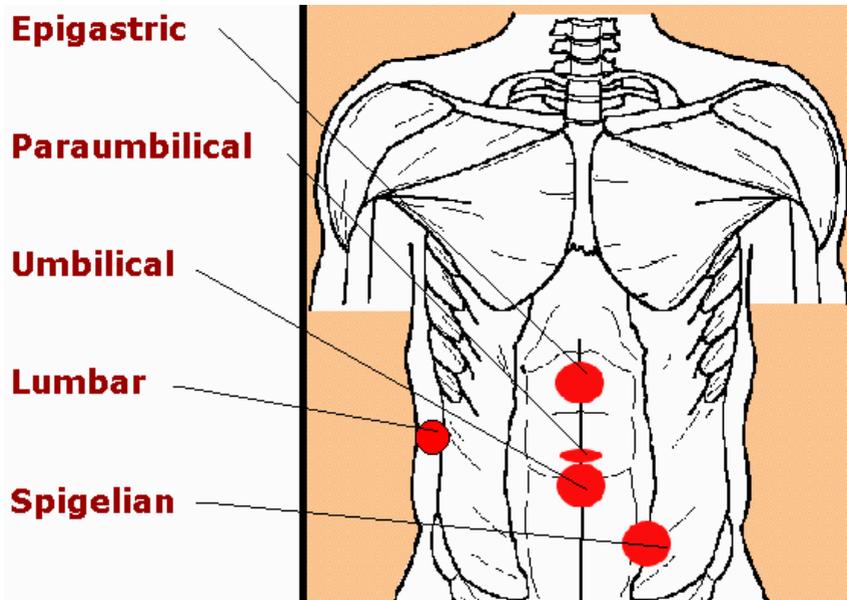
To repair a the gap of the hernia successfully and close the abdominal wall, the split in the layer that has produced the gap needs to be repaired by closing the gap shut with strong permanent internal stitches, and by reinforcing this with an artificial permanent (or semi-permanent) patch of material, often called a mesh.

Are there different types of complex hernias?

Yes. Complex hernias occur in several different areas of the body, in addition to common groin (Femoral and inguinal hernias). These include:

- **Umbilical or Paraumbilical hernias** (at or near the belly button). These are common, and become complicated if very large or other aspects of the abdominal wall is weakened or your risk factors are high.
- **Incisional Hernias.** These can happen after any surgery, particularly if there was a problem with infection at the time of the original operation, other risk factors were present and the wound was not reinforced with a mesh initially.
- **Epigastric/ventral hernias** (these occur anywhere in a line between the bottom of the breast bone and the belly button). Less common than complex, unless they become very large or other aspects of the abdominal wall is weakened.
- **Spigelian hernias** (at the side of the abdomen). These are very rare and are often confused with other hernia types.

Anatomical diagram of hernia sites



What sort of trouble can complex hernias cause?

A complex hernia may cause no pain or discomfort at all, and you may simply notice that there is a large lump present. Often the lump disappears when you lie down.

Some people experience discomfort, aching, or an actual pain at the area where the lump appears. This is often worse towards the end of the day, when you have been on your feet a lot. You may notice that this discomfort can be reduced / stopped by lying down and pushing and massaging the lump away (the contents of the hernia go back in to the abdominal cavity). This is very common with large hernias and not a sign that there is a problem with the hernia.

Do all hernias need to be operated on?

No. Most wide-necked complex hernias, which are not causing discomfort, can be left alone. Sometimes a hernia will continue to grow, and eventually after months, but usually after several years, may reach a size where size alone

causes discomfort. This does not always mean an operation is needed but if your hernia should grow significantly larger tell your GP who will send you back to see a surgeon.

Can hernias develop complications?

Yes. Fortunately the majority of hernias do not develop complications but remain simply as a large lump, which may be painless, or cause minor discomfort.

The complications are:

- **Irreducible.** This means that the hernia lump never goes away. The hernia may always have been like that from the very start (common with complex hernias) when it is not painful, or only causes some discomfort. Other hernias may originally have gone away by themselves when you lay down or pushed on the but by having grown larger, have stopped going away. This does not automatically mean you need an operation but you should have it looked at by a doctor, particularly if the hernia lump becomes suddenly painful or you start to be sick in which case you need to be seen by a doctor as an emergency as it may mean that you have developed an obstructed or strangulated hernia.
- **Obstructed.** This is uncommon and means that part of the bowel has become stuck within the hernia, blocking the bowel from passing food and fluid along. This will result in colicky pains in the belly (like trapped wind, the pains come and go in waves), followed by vomiting. You will also notice that you have stopped passing wind from the back passage, and your hernia lump is hard, often painful and will not go away. It has become irreducible. If this happens you must seek immediate attention from your general practitioner or hospital Accident & Emergency department.
- **Strangulated.** This is the most severe complication that

a hernia can have, but is still uncommon. It occurs when there is severe pain at the site of the lump, sometimes followed several hours later by the skin over the lump becoming red, and often a griping pain in the belly. This may progress to vomiting and a stoppage of all bowel activity (you stop passing wind from the back passage, and your bowels don't work). **If this happens you must seek immediate medical attention from your general practitioner or hospital Accident & Emergency department.**

The hernia contents: either fat or bowel is and that it cuts off its own blood supply and the tissue in the hernia dies. This process can occur in just a few hours, which is why it is called a surgical emergency.

Fortunately this is a rare complication of a hernia.

- **Skin changes.** The skin overlying a longstanding complex hernia, can become stretched and thinned. At it's worst an ulcer can develop.

Can there be complications of an operation to fix my complex hernia?

Yes. All operations carry a risk.

There are general risks that are common to all operations:

- **Wound infection / breakdown:** the skin around the wound may go red and painful or the wounds may leak pus. You will be quoted an individual risk for this based upon your risk factors and operation type. This is very common for complex hernias. You should get your doctor or practice nurse to check your wound if this occurs as you may need antibiotics or to be seen by the surgeon again.
- **Bruising:** it is quite normal to experience some bruising where your wound is, often this does not appear until after you have gone home from hospital. Occasionally a very large bruise may form which take weeks to go away. The wounds may ooze a little bit of blood or clear fluid for the first 48 hours, requiring a change of wound dressing. This is quite normal.
- **Haematoma / seroma:** this means a collection of blood or fluid. In hernia operations, this commonly occurs just beneath the wound, forming a lump. A large lump may take several weeks to disperse. As it disperses bruising usually appears. This usually does not require any treatment.
- **Chest infection:** if you develop a cough, or feel short of breath after your operation you may have developed a chest infection. This is uncommon if you are fit and healthy, but high risk if you have a lung disease (chronic bronchitis, emphysema, severe asthma) and moderate risk if you are overweight, or are a smoker, and very high risk if both.
- **Internal bleeding:** this is rare (occurring in less than 1

in 200 hernia operations), but may require you to have a blood transfusion, or a second operation in order to stop the bleeding.

- **Allergic reactions** to antibiotics or anaesthetics: this is also rare (occurring in less than 1 in 10000 operations). If you have had a previous bad reaction to an anaesthetic or any medication, you **MUST** inform the surgeon or the anaesthetist before your operation.
- **Blood clots** in the legs: this is also known as deep venous thrombosis (DVT). It carries the risk of the blood clot moving from the leg up to the lungs (pulmonary embolus), which can be a life-threatening condition. A blood clot in the leg may not give any sign or symptom that it is there or it may cause a pain in the leg (usually in the calf muscle) or swelling of the leg. A fit healthy person has a very small risk of DVT. But again, your risk is higher if you are overweight, a smoker, in poor general health, have difficulty walking, or have had a previous DVT, and have had a very big operation.

To reduce your chance of developing a DVT you will be encouraged to get out of bed as soon as you are sufficiently recovered from the anaesthetic. You may also be given an injection of a medicine called Heparin, which is proven to reduce your chance of developing a large pulmonary embolus. While you are on bed rest, you should exercise your calf muscles by moving your feet up and down.

Are there risk specific to me with an operation to fix my complex hernia?

There are risks specific to the patient's general health:

- **If you have heart disease:** having an operation can put a strain on existing heart problems, resulting in a heart attack around the time of surgery. This may result in death, or prolonged ill health
- **If you have breathing problems:** you may require special tests on your lungs, and an anaesthetic review. Your risk of developing a chest infection (pneumonia) will be markedly increased. People with severe breathing problems may require admission to the Intensive Care Unit.
- **If you are on warfarin or any blood thinners (NOAC, clopidogrel):** these will have to be stopped in advance of your operation. Depending on why you are on them, it may be necessary to keep your blood thinned with heparin prior to your operation; this needs to be done while you are in hospital. A plan will have to be made by your doctors who prescribes these medicine for cover around surgery. You are also likely to get a lot of bruising.
- **If you have diabetes:** mild diabetes controlled by diet or one tablets is often not a problem if you are having hernia surgery, and your control is good. If a combination of tablets, or insulin injections, is required to keep your diabetes under control then you may have a longer stay in hospital, having insulin given by a drip. Your risk of wound problems will be very much higher, and your control should be optimised before surgery.
- **If you are overweight:** this greatly increases your chances of developing a blood clot in the legs or lungs. You are also at increased risk of developing a chest infection (pneumonia) and a much high risk of wound problems.

People who are overweight are also at increased risk of having diabetes and heart disease, which also increases your risks when having surgery (as described above).

Obesity is also one of the main reasons a hernia occurs in the first place, and if you remain overweight after surgery there is a much higher chance of your hernia coming back in the future (recurrence). Sometimes you may not be able to have a hernia operation if you are too heavy as the recurrence rate makes the operation very likely to fail and not worth doing in the first place.

- If you are a smoker: you are at increased risk of developing a chest infection and blood clots in the legs after an operation. Smoking also increases the risks of heart disease, so you are at increased risk of developing a heart attack or stroke around the time of surgery, even from one cigarette a day.

Smoking also significantly stops your body's wound healing, even from one cigarette a day, such that you are much more likely to develop infections or wound problems. If you smoke you will be expected to stop for at least six weeks ahead of surgery and until you have healed.

Complications due to the mesh itself

All types of complex hernia operations require a mesh and most mesh used to repair hernias are usually made of synthetic material that is not absorbed by the body, but remains permanently in place. This is why they are so successful in repairing hernias. Rarely, however, there can be problems related to the mesh itself:

- **Pain:** The mesh is designed to induce scarring, which gives the hernia repairs its strength. Everyone gets some pain after surgery, but 10-20% of people may get pain

from the scarring that can take months to settle down. Uncommonly, one or two in 100 people will get a chronic pain syndrome from the hernia repair itself, thought to be due to scar tissue and this can be very hard to treat. It is important to think of this if you are having an operation for pain symptoms in the first place.

- **Infection:** all meshes are sterilised and free of germs when they are put in. However, everyone carries germs on their skin, so there is a small risk that one of your skin germs could get on the mesh at the time of surgery and cause an infection. You should have an antibacterial shower the night before your operation.

Mesh infection is a rare complication for hernia repairs performed as a planned operation with no existing skin infections, less than 0.5% of patients having a complex hernia repaired will get a mesh infection. However once a mesh is infected, antibiotics may not get rid of the infection, and you may require to have the mesh removed by further surgery. Having the mesh removed may result in the hernia coming back.

- **Bowel obstruction/bowel fistula:** this extremely rare complication can only occur if the bowel is in contact with the mesh. In most hernia repairs this contact does not happen, due to where the mesh is placed. Even where bowel is in contact with mesh, it is rare for this to cause a problem. Bowel can be in contact with the mesh in keyhole (laparoscopic) surgery, but these meshes are designed for this use.

Bowel obstruction or fistula usually requires major surgery to deal with it, and this maybe part of the reason for you complex hernia surgery in the first place. The mesh may have to be removed, in addition to dealing with the bowel problem. Occasionally, a stoma (a piece of bowel brought

to the surface of the abdomen) is required to allow healing to occur.

Will I have a mesh hernia repair?

All complex hernias are now repaired with mesh. The usual mesh is made from synthetic material which is used to patch the muscle gap which is the hernia. These meshes are permanent but is usually placed deeply within the layers of muscle so that you are unaware of its presence. In complex infected cases or where the mesh cannot be completely covered with layers of muscle a biological mesh is used

The use of mesh has reduced the dramatically number of hernias that come back (called “recurrence” of a hernia), without a mesh all repairs would fail.

So, can hernias come back?

Yes. The risk of a hernia coming back is related to many factors:

- **The type of complex hernia you have.** The size of hernia (larger ones often have large gaps in the muscle which are more difficult to patch successfully).
- **The hernia is recurrent** (it has been repaired before but has come back again).
- **If you are diabetic** - you heal less well.
- **If you have an emergency operation.** If you have a heavy physical job or routinely undertake extremely strenuous exercise (which should be avoided for two months after surgery).
- **If you are on medication** which impairs healing - for example, steroids, immunosuppressive medication.

- **If you have a chronic cough.**
- **If you are overweight / obese.**

Will my hernia be repaired by keyhole surgery?

This depends on what type of complex hernia you have, it's size, and whether your surgeon is trained in keyhole (laparoscopic) surgery.

Keyhole surgery is a method of repairing a hernia through several small cuts on the belly, rather than a single larger one. Both keyhole and open surgery aim to close and patch with mesh the gap in the muscles that is the hernia.

Your surgeon will discuss with you which type of surgery they are planning to perform. Keyhole surgery is only an option for a small number of complex hernias. With a smaller size, it is generally not possible

Keyhole surgery always involves use of a mesh.

Are there any advantages specific to keyhole surgery?

Keyhole surgery for some complex hernias causes less pain than open surgery in the first few days after surgery. It is also associated with fewer wound infections. There is also evidence to support that patients have an earlier return to normal activities and less prolonged groin pain after keyhole surgery.

Are there any disadvantages specific to keyhole surgery?

Yes. Keyhole surgery involves placing hollow metal tubes the width of a pencil, or larger, through the muscle of the abdominal wall. The muscle of the abdominal wall protects the contents of your abdomen (bowel, bladder etc.) from harm, and on rare occasions these metal tubes may unintentionally puncture something. This is a rare complication. This damage is usually identified at the time it happens and is repaired, although it may prevent your intended operation from being completed.

Less commonly, damage is not seen at the time of your operation but you become unwell in the hours or days following your surgery, which alerts the doctors looking after you to the fact there is a problem. Under these circumstances you may require major surgery to correct the problem.

How soon can I go home after my operation?

To be able to go home you must be able to drink, be able to eat light meals and be able to walk about comfortably with no drain tubes left in place. You must also be able to pass urine normally. Small complex hernias will require a minimum overnight stay to achieve all of these.

For more larger and more complex hernias your surgeon will have given you an estimate of how long you will be in hospital at your clinic visit – typically three to seven days. This will also include an estimated length of stay if you suffer a complication of surgery - typically weeks. Most people need to take tablet-type painkillers after their operation. If you have had keyhole surgery, this may be only required for a few days but if you have an open operation, you may need to take them for longer.

Everyone is different when it comes to experiencing pain after an operation, so we can only give you an estimate about how you will feel.

Will I need to have somebody to look after me at home?

Many people feel tired and woozy after a general anaesthetic, and complex surgery, so someone able to look after you by making hot drinks, light meals etc is helpful. They can also phone the hospital on your behalf if you have an unexpected problem.

After the first 24 hours, you will need someone able to do shopping, cooking or cleaning, or run errands for you and look after any children or pets until you are fully mobile, which could be two to three months.

What will I be able to do when I go home?

It is normal to feel tired and a bit sore for several days. This is quite normal after complex hernia surgery. You should rest, and eat only light meals for the first day or two, and avoid any alcohol while taking painkillers stronger than paracetamol.

You may find your bowels tend to be constipated, this is as a result of missing normal meals around the time of your surgery, and is also a side effect of many painkillers. It should settle by itself, but if not, you can use a gentle laxative that you can buy from any chemist.

You may not feel like leaving the house for the first few weeks, but make sure you walk about within the house or around the garden every couple of hours during waking hours to keep the blood circulating in the legs and reduce the chance of a blood clot forming in the legs. If you feel quite sore you should take your pain killers regularly to enable you to move about. If you are still feeling sore and requiring painkillers after you have

finished the supply provided by the hospital, contact your GP for a further supply (this is often necessary).

Younger people will usually return to normal more rapidly than an older person.

What should I do with my wound(s)?

The nurses on the ward will explain this to you in detail before you leave the hospital.

Most surgeons use skin stitches which go away by themselves, and your wound will be covered by a light dressing. For the first couple of days it is not unusual to have slight blood leakage on to the dressing. After 72 hours wounds are usually sealed enough for you to have a shower, and you should not have a bath for ten days after your surgery, and only when your wound is clean and dry.

It is normal for the wound to feel hard and tender for several months, it is also quite normal for you to feel a lump under the wound, as this is the healing ridge of tissue. The actual scar itself will appear red, and often remains red for many months.

If the skin around the wound develops redness extending more than one inch (three cm) from the scar, and this does not go away with 24 hours of you noticing it you should contact your practice nurse or GP as you may be developing a wound infection.

When will I be able to go back to work?

This depends on your type of work, and the type of hernia you have had operated on.

A desk job can usually be returned to after a week or two.

A heavy manual job will require longer off work, usually around two months, or a return to light duties only.

When can I start to drive again?

You must not drive within 24 hours of a general anaesthetic.

It is also recommended that you do not drive while on strong painkillers, as they may make you sleepy. Otherwise, once you can comfortably use all the controls in the car, it is safe to drive. This means being able to perform an emergency stop, and being able to turn round in your seat to safely reverse the car. Most people find they need one to three weeks to recover enough to drive safely.

It is always best to check with your insurance company to see if they have any specific rules related to the type of operation you have had done. This is particularly important for professional drivers.

When can I eat normally again?

Doctors opinions vary about this, most hernia operations do not change what you are able to eat. We do not have specific diet instructions are most hernia operations. Occasionally if there has been a complication of the surgery or a bowel injury you may be placed on a specific diet for a long period of time, or have extra tube feeding for nutrition. This is quite uncommon, but can happen.

When can I start to exercise again?

Doctors opinions vary about this, because of a lack of any detailed study in to this question. Your surgeon will be able to give you his/her opinion related to your specific type of hernia and the type of sport you have in mind. Walking is always encouraged as early as possible.

Will I be given a hospital review appointment after my operation?

This varies from surgeon to surgeon. Many surgeons do not routinely see the majority of patients after a hernia repair, but for more complicated cases your surgeon will decide.

The majority of patients make a good recovery from a hernia operation, but if you have problems your general practitioner can refer you back to see your surgeon if they have any concern.

Is it possible to be too unfit for hernia surgery?

Yes. This is usually because of heart problems or lung problems, but a variety of health conditions can make somebody have such a high risk of dying with surgery that the surgeons will advise them not to have surgery. We may also decide to have an anaesthetic doctor examine someone to help us assess whether they are fit for surgery or not.

You will be required to make changes to any risk factors that can improve your outcome for surgery, like not smoking, diabetic control and weight loss. Most surgeons will not operate on you if you do not stop smoking or agree to some reasonable weight loss targets.

If you are advised by a consultant surgeon not to have surgery on your hernia but you still wish to have the operation, you should ask for a second opinion from another consultant surgeon. We can suggest to your GP to arrange it for you in another regional hospital that does complex hernia operations.

Occasionally your surgeon may decide themselves to ask another centre for an opinion of your hernia due to its complexity, and some patients are discussed at a regional specialist meeting before agreeing to surgery. Occasionally we ask a regional expert to come to our hospital to help with particularly complex hernias.

Is there anything I can do to improve my health before having surgery?

If you are a smoker you must stop as far in advance (and at least six weeks) before your surgery.

If you are overweight you must lose weight to get down to your target weight for your surgery as specified by your surgeon. Your GP may have a nurse in the practice that can help you with a weight reducing diet, or you could join Weightwatchers. Occasionally we will recommend weight loss surgery ahead of a complex hernia operation and we will ask your GP to refer you for this.

If you are diabetic you need to keep your blood sugar levels in the correct range and you will be given a target for this. If your sugar control is poor you will not be able to have an operation.

If you have high blood pressure that needs to be well controlled before you can have surgery.

**PATIENT
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If you or the individual you are caring for need support reading this leaflet please ask a member of staff for advice.

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