



Lumbar Discectomy and Decompression

Advice sheet for patients

by

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Informed consent is the process of the surgical team providing information to the patient and their carers to enable them to come to a decision regarding the benefits and risks of a proposed operation. This document is intended to assist in that process. It contains information that Spine Surgeons of the British Association of Spine Surgeons believe represents a reasonable information source so that you, the patient, can consider the advantages and disadvantages of this surgery.

Introduction

No surgery is guaranteed and all surgery carries associated risks. This advice sheet discusses the potential risks and benefits of surgery specific to lumbar discectomy and decompression. It is intended that this information should supplement the specific advice given to you by your surgeon and the discussion that you have with them in clinic.

Lumbar discectomy and decompression is normally carried out for patients suffering with nerve pain in the leg (sciatica), which is normally caused by a disc prolapse or protrusion. In older patients it may be due to degenerative changes (wear and tear), which can produce a narrowing (stenosis) of the bony spinal canal. This latter condition is termed 'spinal stenosis' and typically causes symptoms of pain, numbness, and heaviness in the legs with standing and walking. Spinal claudication is the term used for leg pain or nerve symptoms that come on specifically with walking.

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In general terms, the purpose of a 'discectomy' operation is to remove what portion of the disc is pressing on the nerve and producing the nerve pain down the leg. If the pain is improving or not significantly affecting your quality of life then it may be best to leave things well alone. A 'decompression' removes the bone or soft tissue that is compressing the contents of the spinal canal. In some patients a combination of the two procedures may be required.

Back pain is a common symptom and there are many safe and effective ways of dealing with the symptoms of back pain that do not involve surgery, and these should be discussed with your surgeon.

Some important considerations

Spinal surgery for sciatica and spinal stenosis is more effective for leg pain than it is for back pain. Both the leg pain and back pain may improve. Symptoms of numbness or weakness may well persist after surgery.

In patients attending general practice for the first time with sciatica, 75% actually get better within 28 days. The sciatica pain may continue to improve without the need for surgery. The pain often improves anyway, and pain relief in the early stages may be achieved with tablets or injections. Surgery helps people to get better faster, but carries some associated risks. Surgery for disc prolapse has a recurrence rate of between 7% and 15% within ten years. This risk of recurrence of symptoms is actually the same whether or not you have an operation. Surgery appears to be the best option when severe or quite bothersome symptoms have not settled to the patient's satisfaction and have lasted around 4 to 6 weeks.

Surgery is safer and carries less risk for fitter and healthier patients compared to those who have increased specific risk factors. It is common sense for a patient to take responsibility to reduce their risks whenever possible. Simple measures such as stopping smoking, losing weight and improving aerobic fitness all help.

Older patients may have specific risk factors such as heart disease. Tablets used to thin the blood such as warfarin, aspirin, or clopidogrel increase the risk of bleeding and you must inform your surgical team regarding these. Patients who are diabetic have a slightly increased risk of infection generally, and their nerves may not recover as well as others.

Expected results

About 70% to 85% of patients experience a significant improvement in leg pain after surgery, depending on their pre-operative symptoms, the duration of their symptoms and their MRI scan. 20% to 25% may improve but still have persistent leg pain. 5% may have no benefit at all. 1% may even experience an increase in pain.

Lumbar Spine Decompression – What do we know?

Lumbar decompression surgery seems to improve pain symptoms in about 65% to 80% of patients and often improves the distance a patient can walk by a factor of about 4. The purpose of the surgery is to improve quality of life. That is, if the symptoms are acceptable to the patient then surgery may not actually be necessary, depending on the nature of your symptoms and the exact findings of your MRI scan.

Surgical or non-operative treatment for lumbar spinal stenosis?

In a randomised controlled trial of 94 patients (Malmivaara A Spine Jan 2007 1; 32(1): 1-8), although patients improved over the 2-year follow-up regardless of initial treatment, those undergoing decompressive surgery reported greater improvements in leg pain, back pain, and overall disability. The relative benefit of initial surgical treatment diminished over time, but outcomes of surgery remained favourable at 2 years.

THE OPERATION

The operation is usually performed under general anaesthetic and involves a short hospital stay (1 to 2 days), and quite often even just overnight. Most surgeons encourage an early return to normal activities as this helps people to get better faster.

A common surgical technique used now is 'microdiscectomy', which involves using a microscope (this is 6 foot tall, and allows for optimal vision and lighting), and a small incision. This removes the pressure on the nerve by removing the disc prolapse.

A decompression is the term used for removing bone or ligament that may be causing pressure symptoms on the nerve. If the bone removed is from under the

small joints (or facets) of the spine, it is called an 'undercutting facetectomy'. It is quite common to have a combination of 'discectomy' and 'decompression'.

Your surgeon will discuss the specifics and principles of the procedure with you. Often the specific operation is tailored to the individual.

RISKS OF SURGICAL TREATMENT

Damage to spinal nerves:

The spinal nerve causing your pain may be already damaged by the disease process. The disc prolapse can cause scarring within the nerve such that it is unable to recover despite technically successful surgery. The nerve can be stretched in the attempt to remove the disc lying under the nerve. The nerve can also be damaged by direct surgical trauma. The risk of permanent nerve damage to specific muscles affecting the leg, foot, bowel, or bladder (depending on which level of the spine is affected) is about 1 in 150.

Paralysis:

The risk of paralysis, which means the loss of use of the legs completely, loss of sensation, and loss of control of bowels and bladder, is thankfully very low, especially in operations involving the lumbar spine as the spinal cord actually ends at the level of the first lumbar vertebra. It probably occurs in less than 1 in 300 operations. It can rarely occur due to bleeding into the spinal canal after surgery (an extradural spinal haematoma). The risk of paralysis is higher if patients are taking blood-thinning medications (warfarin, aspirin or clopidogrel). If an adverse event of this nature were to occur, every effort would be made to reverse the situation. Sometimes paralysis can occur as a result of damage to the blood supply of the nerves or spinal cord, and this is not reversible.

Infection:

Superficial wound infections are less rare and may occur in between 2% and 4% of spinal operations. The risks of infection are increased in diabetic patients, patients on regular steroids or those with a reduced resistance to infection.

Deep spinal infections are much more serious but thankfully less common. A deep spinal infection occurs in less than 1% of cases. To reduce the risk

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of infection, antibiotics are often given and the surgery is performed in ultra-clean-airflow theatres. If a deep infection occurs it may require repeat operations to washout the spine and a prolonged and extensive course of antibiotics.

Incidental durotomy:

This is where an opening occurs in the dura, which is the lining of the spinal canal. The spinal fluid within the spinal canal can leak out of the hole. It may occur deliberately if the surgeon intends to do it as part of the operation. It may occur as a result of the disc, bone, or ligament being very stuck to the lining of the spinal canal. In primary (first time, as opposed to repeat/revision) sciatica surgery it occurs in 3% of cases. In decompression surgery it is more common, occurring in up to 8% of cases.

If there has been a previous spinal operation then leakage of spinal fluid is even more common because of scarring. Repeat or revision operations have a higher risk of complications than first time operations.

Sometimes the hole in the spinal lining (the dura) can be repaired with stitches or a patch. Sometimes it is safer to leave it to heal. Sometimes the surgeon will insert a drain to divert the fluid. Usually the leak of fluid dries up within a few days and there is no long-term effect. Sometimes, despite precautions, spinal fluid will leak through the wound. This represents a risk of infection and meningitis, and further surgery might be required to correct the situation.

Damage to blood vessels:

This can result in significant bleeding which can potentially even be life threatening if severe. Damage to the main blood vessels at the front of the spine (the aorta) has been known to occur, but is extremely rare. The main blood vessels to the legs can also be damaged, which could even potentially result in loss of a limb. Events of this nature are thankfully very rare, occurring in less than 1 per 1000 operations.

Damage to vital organs:

The liver, kidneys and bowel are in front of the discs and are theoretically at risk of injury. This again could potentially be life threatening but damage of this kind is extremely rare.

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The wrong operation:

The spine has many discs and vertebrae. During the operation the surgeon will carry out X-rays to check that he is operating at the correct place in the spine. Many safety checks are completed to ensure that the right procedure is being carried out at the correct level. Occasionally, the X-rays will show that the wrong disc space has been opened, in which case the correct level will then be approached. Intra-operative checking like this is essential to avoid wrong level or wrong site surgery.

Death:

The risk of death is extremely low. It is difficult to quantify, but this risk of death from spinal surgery of this kind is probably less than 1 death per 700 operations for sciatica. Death may result from unexpected events such as blood clots in the legs passing to the lungs (pulmonary embolus), or catastrophic blood loss from major blood vessels. The risk will vary according to patient factors such as heart disease, high blood pressure, smoking and specific age-related risks. The risk of death from decompression surgery for stenosis is somewhat higher (possibly 1 per 350), as the patients tend often to be older and less fit.

BEFORE YOUR OPERATION

- You will be contacted by a member of our team to discuss your pre-admission process and to ensure that you are fit to go ahead with the procedure.
- Please inform the team if you are:
 - Diabetic
 - Have a cough, cold or any kind of infection.
- You must inform us prior to attending if you are taking any of the following medications:
 - Aspirin, warfarin or clopidogrel (these are likely to need to be stopped some days before the operation).
 - Antibiotics
- For females, we will need to know the start date of your last menstrual period, due to the use of X-ray equipment in theatre. If you think you might be pregnant then contact our team for advice.
- Blood tests and blood matching: You will need a routine blood test prior to your procedure. You will also get a blood cross-match in case you need a blood transfusion during or after the procedure.

ON THE DAY OF THE PROCEDURE

- Ensure that you do not have anything to eat after midnight the night before your surgery. You may drink water only till 2 am.
- Bring a list of your medications with you.
- When you arrive at the hospital, a nurse will complete your admission details and check that you are fit for your procedure.
- You will be asked to sign a consent form, which details the risks and benefits. We will be able to answer any further questions you may have at this time.
- You will get a 'mark' on your back with a pen. Though the site of the operation is obvious, it is still a requirement.
- The anaesthetist will see you prior to the operation to explain the anaesthetic and to answer your questions.

THE PROCEDURE

The procedure is performed in the operating theatre and is always carried out using fluoroscopy (live X-ray) to ensure that the right levels are done.

From the ward, you will be taken down to the theatre, where the anaesthetist and the team await you. You will then be given the anaesthetic.

- You are positioned stomach down. The surface of your skin is always cleaned thoroughly with Chlorhexidine antiseptic. Sterile drapes are used to protect the whole field and make it sterile. The theatres have laminar ultraclean airflow, to keep the surgical field clean.
- An incision is made in the relevant area on your back once the X-ray has been used to locate the relevant level. The muscle is dissected with as little blood loss as possible.
- Micro-retractors are then inserted and large microscope is used to perform the rest of the procedure.
- For a lumbar discectomy, a small amount of bone is often removed with the ligament that surrounds the spinal canal. The affected nerve root is then very gently retracted and the disc is approached. An X-ray is taken at this point to re-confirm the correct level.
- With the nerve root carefully protected, the disc is then removed and the area washed out with normal saline.
- For a decompression, more bone is removed, along with the ligament surrounding the spinal canal. If the facet joint (the joint between two different vertebra) is causing some of the narrowing of the spinal canal, some of this

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may have to be removed as well to complete the decompression. This is called an undercutting facetectomy.

- The wound is then closed with multiple layers. Your skin is likely to be closed with sutures under the skin.
- You will wake up in the recovery area. You will be quite sleepy and may not recollect this part. You will be asked to move all your limbs to ensure that your nerves are all still working properly.

BACK ON THE WARD:

- You will be allowed to sit up and out of bed when you are ready after coming back to the ward. The physios and nurses will indicate when they feel you are ready to stand and start walking after the procedure (if you have an incidental durotomy (see above) you will be expected to stay flat). You will be given something to eat when you are ready.
- The next day, if you are walking safely and all is well, you will be allowed to go home. Occasionally patients require a second day to get over the anaesthetic.
- The area around the operation site can give discomfort to varying levels for up to six weeks after the procedure. The team will ensure you have adequate painkillers to take home.
- Ensure you have spare dressings to take with you as well. The dressing is kept on unless there is wound fluid (diluted blood) coming through.

YOUR RECOVERY

Once back home:

- Keep your wound dry at all times, including when washing.
- Keep yourself mobile, but do not undertake any strenuous activity for the first three weeks. Do not lift anything heavy.
- If you have a journey to work and have a desk job, it may be a month before you can fully get back to work. You can start intermittently working from home when you feel comfortable to sit for short periods of time. A manual job may require 6 weeks off work.
- Do not drive for a month following the procedure.

At 2 weeks:

- An appointment will be made for you to come to the clinic to have your wound inspected. You are likely to still be uncomfortable from the procedure, and may not at this stage yet be feeling the benefits of the operation.

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- If all is well, a physiotherapy appointment will be made at this point. If you don't have a physiotherapist assigned to you, Mr. Montgomery can arrange this for you.

At 3 weeks:

- Physiotherapy will probably begin at this point. This will focus on increasing your flexibility, slowly building your core strength, and ensuring that your posture is correct.

At 4 weeks:

- You should be ready to return fully to your desk job.
- You can commence driving if all is well.
- You can start increasing your activity levels.

At 6 weeks:

- You will have another follow-up appointment back in the clinic. This is to ensure that you have made a good recovery and to answer any further questions you might have. It is also to ensure that you are appropriately engaged in a physiotherapy exercise regime to help reduce the chance of a similar problem occurring.
- If all is well, you are likely to be discharged from the clinic at this point. Your physiotherapist will monitor your progress until they feel that you are able to continue the regime at home without their help.

The above information is used with thanks from <http://www.spinesurgeons.ac.uk> and the British Association of Spinal Surgeons (BASS).

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