

## **Lumbar Discectomy and Decompression INFORMATION FOR PATIENTS UNDERGOING SURGERY**

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. There are two helpful resources at the end of this page about getting well after your operation.

### **INTRODUCTION**

No surgery is guaranteed and all surgery has risks associated with it.

Your surgeon will discuss with you the potential risks and benefits of surgery specific to you. This is a general information source to complement that information.

This type of Surgery is normally carried out for patients suffering with nerve pain in the leg. (sciatica). Sciatica is common in patients in their 30s and 40s. In this group of patients, it is usually due to a disc prolapse or protrusion.

In the older patient it may be due to degenerative changes which can produce a narrowing or stenosis of the bony spinal canal. The condition is termed "spinal stenosis" and typically causes symptoms of pain and numbness to the legs with standing and walking.

Spinal claudication is the term used for leg pain or nerve symptoms that comes on specifically with walking.

In general terms a 'discectomy' operation is to remove the part of the disc that is producing the nerve pain down the leg. If the pain is improving or not significantly affecting quality of life it may be best to leave well alone. A 'decompression' is to remove bone or soft tissue 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 can be accompanied by milder symptoms into the legs. There are often safer and more effective ways of dealing with the distressing symptoms of back pain, both in the short term and the long term, that do not involve surgery. Some patients have a combination of leg pain and back pain.

This document is to tell you about the common operations for sciatica and spinal stenosis. There are general risks with any operation and spinal surgery has some specific risks that you need to know about.

### **SOME IMPORTANT CONSIDERATIONS**

Spinal surgery for sciatica and spinal stenosis is better for the 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% are better within 28 days. The sciatica pain may continue to improve without the

need for surgery. The pain often gets better anyway and pain relief in the early stage may be achieved with tablets or injections.

Surgery seems to get people better quicker but has some risks associated with it. Certain types of disc prolapse are more likely to recur than others. Surgery for disc prolapse has a recurrence rate of between 7% and 15% within ten years. This is the same whether or not you have an operation.

Surgery seems best when severe or quite bothersome symptoms have not settled to the patient's satisfaction and have lasted more than 6-8 weeks. Recent studies suggest that waiting around four months after the onset may be the best timing for surgery in terms of recovery and outcome.

Surgery has less risk and is safer on fit and healthy patients. It is common sense to take responsibility as a patient to reduce the 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 risks of bleeding and you must inform your surgical team regarding these.

Patients who are diabetic have a slightly increased risk of infection generally and the nerves in diabetic patients may not recover as well as others.

Specific risk factors may apply to you as an individual.

### **SPECIFIC USUAL BENEFITS**

70-75% of patients experience a significant improvement in leg pain. 20% may be better but still have persistent leg pain. 5% may have no benefit at all. 1% may be worse in terms of pain.

### **LUMBAR DISC SURGERY - WHAT DO WE KNOW?**

There are many studies published in the scientific literature. By combining them in a systematic review doctors can sometimes have an overview of the benefits of different treatments. The Cochrane review is an independent group of spine specialists that have done this, looking at 39 trials.

Cochrane Database Syst Rev. 2007 Jan 24;(1): Gibson A Waddell G

The authors conclusions: Surgical discectomy for carefully selected patients with sciatica due to lumbar disc prolapse provides faster relief from the acute attack than conservative management, although any positive or negative effects on the lifetime natural history of the underlying disc disease are still unclear. Microdiscectomy gives broadly comparable results to open discectomy. The evidence on other minimally invasive techniques remains unclear (with the exception of chemonucleolysis using chymopapain, which is no longer widely available).

Recent findings from America are similar. Surgical vs non-operative treatment for lumbar disc herniation: the Spine Patient Outcomes Research Trial (SPORT): a randomized trial.

Journal American Medical Association 2006 Nov 22;296(20):2441-50 Weinstien et al

This large study of 501 patients found little difference long term between those

that had surgery and those that did not. Patients in both the surgery and the nonoperative treatment groups improved substantially over a 2-year period.

## **THE MOST RECENT EVIDENCE**

Prolonged conservative care versus early surgery in patients with sciatica caused by lumbar disc herniation: two year results of a randomized trial.

Wilco C Peul et al **BMJ 14 June 2008.vol 336 p 1355-1358**

Prolonged conservative care versus early surgery in patients with sciatica from lumbar disc herniation: cost utility alongside a randomized controlled trial

Wilbert B van den Hout et al **BMJ 14 June 2008. vol 336 p1351-1354**

In nine Dutch hospitals 283 patients were entered into the trial . 141 underwent early surgery , that is within 6-12 weeks of symptom duration. 142 were assigned to conservative treatment for 6 months. 62 (44%) of these eventually came to surgery.

Early surgery achieved more rapid relief of sciatica than conservative care, but outcomes were similar by one year and these did not change during the second year.

The economic analysis suggests that early surgery resulted in higher cost from the healthcare perspective (1819 Euro's). Savings on productivity led to a negligible difference from the societal perspective (-12 Euro's, range -4029 to 4006 euro's). The cost per QALY was 40,000 Euro's. Overall the economic paper concludes that early surgery is likely to be cost effective.

In the clinical results paper the Roland Morris and VAS scores are the outcome measures. By 26 weeks there is little difference in the two groups. The VAS for leg at entry was 6.5 reducing to 1 at follow up. There is an advantage to the patient of earlier recovery of leg pain in the short term from surgery. Complications occurred in the 1.6% of all surgical patients.

In both treatment groups 6% of surgically treated patients had recurrent sciatica that led to a second surgical intervention during the two years of follow-up. Early surgery and prolonged conservative treatment both produced a 20% proportion of patients with unsatisfactory outcomes. Early surgery failed to reduce this.

A conclusion of the study is : **'since the treatment effects of early surgery are gone after six months, well informed patients, rather than physicians, should decide whether and when to have surgery'**

## **LUMBAR SPINE DECOMPRESSION - WHAT DO WE KNOW?**

The operation of lumbar decompression seems to improve pain in about 65-70% of patients and often improves the distance a patient can walk by a factor of about four. The operations are for quality of life issues. That is, if the symptoms are acceptable to the patient the question of having surgery or not having surgery should be made by patient in discussion with the surgeon. Many spinal disorders improve or do not get worse.

Surgical or nonoperative treatment for lumbar spinal stenosis? A randomized controlled trial. Malmivaara A Spine Jan 2007 1;32(1):1-8 A study of 94 patients. Although patients improved over the 2-year follow-up regardless of initial treatment, those undergoing decompressive surgery reported greater

improvement regarding leg pain, back pain, and overall disability. The relative benefit of initial surgical treatment diminished over time, but outcomes of surgery remained favorable at 2 years.

This link will take you to a calculator that will allow you to estimate the likely probability of benefit from decompression as linked to the SPORT study on spinal stenosis. You or your surgeon may find the interpretation of this difficult!

## **THE OPERATION**

The operation is usually done under general anaesthetic and involves a short hospital day, quite often just overnight. Most surgeons encourage an early return to normal activities as that helps people to get better quicker.

The common techniques are a 'microdiscectomy' which involves using a microscope, or a 'minidiscectomy', the results of these operations are very similar. They are mainly to relieve pressure on nerves most commonly by removing a disc prolapse. A decompression is the term used for removing bone that may be causing pressure symptoms on the nerve. If the bone removed is from one under the small joints (or facets) of the spine it is called an 'undercutting facetectomy'. It is quite common, particularly as people get older for a combination of 'discectomy' and 'decompression' to be required.

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**

**Death** The risk of death is low, it is difficult to quantify and is probably less than one death per 700 operations for sciatica. It would be 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 higher (possibly one per 350) than for disc surgery as the patients are usually older and less fit.

**Paralysis** The risk of paralysis, which means loss of use of the legs, loss of sensation and loss of control of bowels and bladder is low. Probably occurring less than one per 300 operations. It could occur through bleeding into the spinal canal after surgery (an extradural spinal haematoma). The risk of paralysis is higher if patients are taking blood thinning medication (warfarin) or if there is an incidental durotomy (leak of spinal fluid). If an adverse event of this nature was 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 not rare and may occur in between 2% and 4% of spinal operations. Risks of infection are increased in diabetic patients, patients on steroids or those with lowered resistance to infection.

Deep spinal infections are much more serious but less common. A deep spinal infection occurs in less than 1% of cases. To reduce the risks of infection antibiotics are often given and the surgery is often performed in ultra clean air

flow theatres. If a deep infection occurs it can 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 will drain 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 or bone being very stuck to the lining of the spinal canal. In primary sciatica surgery it occurs in 3% of cases. In decompression surgery it is more common, happening in 8% of cases.

If there has been a previous spinal operation it 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.

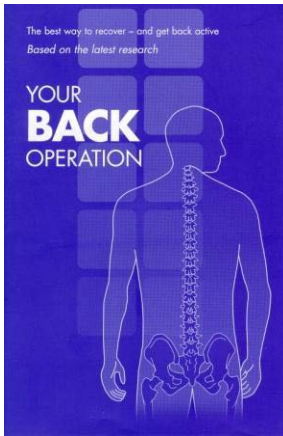
**Damage to spinal nerves** The spinal nerve causing the pain may be already damaged by the disease process. The disc prolapse can cause scarring within the nerve such that it is unable to recover despite technically successful surgery. The nerve can be stretched in trying to remove the disc lying under the nerve. The nerve can also be damaged by direct surgical trauma or by pressure effects necessary to control bleeding.

**Damage to blood vessels** This can result in significant bleeding which can be life threatening. Damage to the main blood vessels at the front of the spine (the aorta) has been known to occur. The main blood vessels to the legs can also be damaged which could result in loss of limb. Events of this nature are rare, occurring in less than 1 per 10000 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 would be life threatening but rare.

**The wrong operation** The spine has many discs and vertebra. During the operation the surgeon will commonly carry out x-rays to check that he is operating at the correct place in the spine. Many safety checks occur to make sure that the patient has the correct procedure. 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.

An early return to activities has been shown to give better results. Within a few weeks you should be back to most basic activities. Keep moving- pace your activity

Move about before you stiffen up. Do a little more each couple of days. It will hurt but you will not harm your back.



This booklet is suitable for most patients, it is a guide for patients who are having surgery for sciatica or spinal stenosis. It is based on the latest research.  
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