

## **Spinal decompression**

This is the widely used term for a spinal surgical procedure whereby the pressure is taken off one or more nerves in the spine. The goal of surgery is to relieve the pressure on the nerve so that it may recover from the period of compression that it has suffered. Many terms are used for decompression operations to anatomically describe the area that is being decompressed. e.g. if there is central narrowing (stenosis) then one may perform a central decompression, lateral recess stenosis may require an undercutting facetectomy (removal of part of the facet joint) and compression of the nerve in the hole as it leaves the spine (foramen) is a foraminotomy. Some of the terms that may be used are listed below, but it is important to remember that the aim of all the surgeries is to alleviate pressure on the nerve without destabilising the spine.

*Lateral recess decompression*

*Undercutting facetectomy*

*Hemilaminectomy – half of lamina on one side removed*

*Laminectomy – entire lamina removed from back of spine*

*Foraminotomy*

*Intersegmental decompression*

*Indirect decompression - canal not entered, spacer or fusion fused*

*Micro – prefix used when a microscope is used*

### **Indications**

The classical indication for this procedure is neurological compression. This may cause constant pain or pain on activity including standing or walking (spinal claudication). Often a scan will show more than one problem at more than one level. It is important however to treat the patient and not the scan as sometimes radiological abnormalities are asymptomatic. In this case, besides clues from the history and examination diagnostic nerve root blocks may be used. If the correct is identified and decompressed well then the quoted chance of improvement in pain as a symptom is 80% - it may be higher in some individuals and lower in others. If back pain is a feature then this may improve in up to 60% (depending on the case) simply by taking the pressure off the nerve. Degenerative scoliosis and spondylolisthesis must be identified before surgery and so standing radiographs are mandatory in older patients.

### **Procedure**

Prior to surgery, you will be seen in the pre-operative clinic and consent will be obtained prior to the surgery on the ward. An incision is made at the identified level of the spine and careful blunt dissection to the spine is performed, retracting the muscle gently, using a microscope. The next part of the procedure depends on what needs to be decompressed. If there is any instability or there is a dynamic component to the stenosis then instrumentation may be required (see

spinal fusion). Closure is with internal sutures although clips are very occasionally used. Local anaesthetic is placed in the skin and muscle. A small dressing is used. Only in cases where multi-level surgery is performed is an epidural or patient controlled analgesia used. The usual post-operative plan is to commence mobilisation as soon as possible with the nurses and physiotherapists on the ward. Antibiotics are given during surgery.

### **Post-operative care**

<i>Sutures</i>	Often none, just paper strips. If clips, remove at 10 days
<i>Wound</i>	Keep dry until healed
<i>Physiotherapy</i>	Instructions given on discharge. Formal physiotherapy sometimes arranged depending on individual, but is not routine
<i>Driving</i>	When safe. Could you do an emergency stop and be in complete control of your car? Normally 4 weeks
<i>Work</i>	Desk based 4-6 weeks, Heavy manual 3 months
<i>Exercise</i>	It is important to keep the wound dry until it has healed and not to do anything that will overstretch the sutures. Once the wound is dry, a gradual and progressive return to activities is possible. Do not suddenly go back to full activity and take things sensibly. No heavy lifting or contact sports for 3 months following surgery (i.e. no straining). Normally, from 2 weeks can swim or cycle on exercise bike. When running, to start on a treadmill, then soft surfaces before road running.

Resolution of pre-operative symptoms may take a little while although most patients describe an instant benefit. If at 6 weeks, symptoms are not improving an MRI scan is requested to ensure that the decompression was adequate and/or plain radiographs to ensure that the spine has not moved.

### **Complications**

Fortunately most complications can be treated and although they are inconvenient and cause setbacks there are often no long term consequences. Total paralysis cannot occur from this type of surgery in the lumbar spine but a nerve has to be retracted and can theoretically be damaged, as can the nerves going to the bladder and bowel. Fortunately this is very rare (<0.1% cases).

*Other complications include:*

Bleeding - if significant may need further surgical exploration

- Infection - often antibiotics suffice, may need surgical washout
- CSF leak - spinal fluid leak (1%) - may need to lie flat post-operatively
  - csf leaks are more common in revision surgery
- Recurrence - 5-10% risk irrespective of activity, sometimes needs further surgery, may be at same or other level
- Scarring - some is inevitable, but sometimes the nerve becomes stuck down which is why early mobilisation is important
- Back pain - often improved after surgery, but may continue to be a problem. Often non-operative measures can help and further surgery is only rarely indicated.

These are the main surgical complications, but of course, any operation is a major undertaking for you and a large stress on your body and can cause cardiorespiratory, vascular, renal or gastrointestinal problems. This is extremely unlikely if you are fit and well. If you have other medical conditions then this can affect the outcome of your surgery and these should all be notified to Mr Harding, the nurses in clinic and the anaesthetist prior to your operation.

The aim of this is to inform and reassure. The list describes the main problems that may occur and if you have any concerns, worries or questions regarding these or others not listed then please discuss these with Mr Harding in clinic.