

Information for patients

Anterior cervical discectomy and fusion (ACDF)

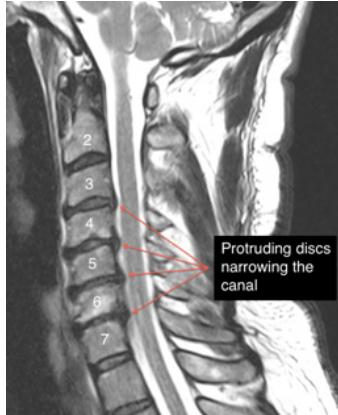


Spinal Disorders

Introduction

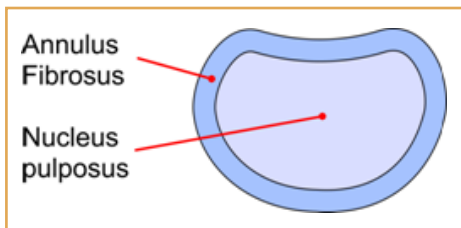
Following your recent MRI scan and consultation with your spinal surgeon, you have been diagnosed with having a cervical disc protrusion resulting in nerve root compression (trapped nerve) and arm pain and / or causing spinal cord compression leading to weakness in your legs or balance problems.

This is an example as shown on an MRI scan:



The intervertebral disc is the structure that is between vertebrae (bones of the spine). It acts as both a spacer and a shock absorber. The disc is composed of two parts: a soft gel-like middle (nucleus pulposus) surrounded by a tougher fibrous wall (annulus fibrosus).

Overhead view of an intervertebral disc (simplified):



Nerve root pain is felt in the area of the body that the nerve, as it leaves the spine, supplies. Symptoms may include pain, numbness, increased sensitivity or weakness of muscles. Nerve pain in the arm (brachial neuralgia) is very similar to sciatica but comes from the nerves in the neck.

Sometimes symptoms can come from pressure on the spinal cord itself. This is called Cervical Myelopathy and this can result in more widespread symptoms, which might involve your legs and balance as well as the fine function in your hands.

One possible cause of these symptoms is a cervical disc protrusion. In other patients this pressure on the spinal cord is a result of wear and tear related overgrowth of bones and discs.

Very few people who have a spinal problem need surgery. In general, if a patient's arm pain due to a cervical disc protrusion is going to get better then it will do so in about 6-12 weeks. However, if the symptoms have not resolved following conservative measures (manipulation, physiotherapy, medication or injections) surgery may be necessary.

About the operation

The surgery called cervical discectomy is performed to remove the problem disc. The exposure is usually made through the front of the neck as it gives good access to the spine through a relatively uncomplicated pathway. The operation is performed under general anaesthetic (so you are fully asleep). First, the skin incision is made, on the side of the neck and then one small muscle is cut. Access is then gained to the front of the spine. After the disc space has been identified on x-ray, the disc is then removed. Cervical fusion is then commonly carried out at the same time as cervical discectomy. To achieve a spinal fusion, a bone graft is used to connect two bones together. The patient's own bone from the pelvis helps to unite the bony blocks, completing the fusion. This process is similar to the way a broken bone heals.

There are several techniques to get the bone graft needed for spinal fusion:

- Patient's own bone (Autograft bone): this is usually taken through an incision over the pelvis (iliac crest).
- Donor bone (Allograft bone): this eliminates the need to use patient's own bone. The donor bone graft acts as a calcium scaffolding which the patient's own bone grows into and eventually replaces.
- Artificial bone (Bone substitutes).

These techniques may be used in conjunction with a cage to contain the graft and a small plate that can be applied to the front of the spine to add stability and prevent graft dislodgment.

X-ray showing the cages and plate in position:



Risks and Complications

As with any form of surgery, there are risks and complications associated with this procedure, which include:

The risks of a general anaesthetic

General anaesthetics have some risks, which may be increased if you have chronic medical conditions, but in general they are as follows:

- Common temporary side effects (risk 1:10 to 1:100) include bruising or pain, blurred vision and sickness, these can usually be treated and pass off quickly.
- Infrequent complications (risk of 1 in 100 to 1 in 10,000) include temporary breathing difficulties, muscle pains, headaches, damage to teeth, lip or tongue, sore throat and temporary problems speaking.
- Extremely rare and serious complications (risk of less than 1 in 10,000). These include severe allergic reactions and death, brain damage, kidney and liver failure, lung damage, eye injury, and damage to the voice box. These are very rare and may depend on whether you have other serious medical conditions.

Other risks from the surgery itself include:

- Some degree of difficulty swallowing food and hoarseness of voice is very common. It takes a few days to weeks to settle down. 5% of patients complain of something 'sticking in the throat' while swallowing large pieces of food. Chewing food thoroughly can help with this.
- Recurrent arm pain, as a result of scarring.
- Problems with positioning during the operation - including skin injuries and, very rarely, eye complications such as blindness.
- Infection (1-2%).
- Blood clots (thromboses) in the deep veins of the legs or lungs.
- Bleeding in the wound and swelling in the windpipe (laryngeal oedema), which could result in difficulty breathing or swallowing.
- Graft dislodgment.
- Damage to the trachea (windpipe) or oesophagus (food pipe).

- Possible complications associated with taking out bone graft include graft site pain and damage to a sensory nerve that supplies sensation to the front of the thigh (the lateral femoral cutaneous nerve).
- Also, the small nerve that supplies vocal cords sometimes does not function after surgery because of retraction during the procedure. This could cause temporary or rarely some permanent hoarseness of the voice. Retraction of the oesophagus can produce temporary difficulty with swallowing as well.
- In rare cases (1 in 500) the spinal cord may be injured resulting in complete paralysis. In patients with long-standing and severe spinal cord damage (myelopathy) this risk may be higher.
- The nerve roots that are being freed up may get damaged and not function properly after surgery. This functional problem recovers in a few months and is seen in 3-4% of cases. Permanent damage is rarer and seen in 1% of cases.
- Some patients may have a leak of the fluid (CSF) from around the spinal cord. This occurs when the dural covering of the cord gets punctured. The risk of this happening is 3-4%. This may give rise to headaches and difficulty with vision.
- In the long term, or in years to come, pain can develop from problems at the other disc levels in the neck.
- Non-union occurs in around 5% of patients - where the graft does not fuse. This may need further surgery if it is painful. The incidence of non-union is higher in smokers. It is important to follow post op. instructions to minimise this risk.

What to Expect after Surgery

Immediately after the operation you will be taken on your bed to the recovery ward, where nurses will regularly monitor your blood pressure and pulse. Some patients are kept in the High Dependency Unit (HDU) overnight. Oxygen will be given to you to via a facemask for a period of time, to help you to recover from the anaesthetic. You will have an intravenous drip for about 24 hours or until you are able to drink again after the surgery. Your surgeon may instruct you to take only sips of clear fluid in the first 24 hours.

A small drain (tube) will come out of your neck wound, this prevents any excess blood or fluid from collecting there. This will be removed when the drainage has stopped, usually 24 hours later. You will have some discomfort or pain in your neck and also at the site where the bone graft was taken. The nursing and medical staff will help you to control this with appropriate medication. A sore throat is also common for a few days after surgery.

In the first day after your operation, your physiotherapist will help you out of bed. They will also show you the correct way to move safely.

Going Home

You will normally be allowed to leave hospital when you and your physiotherapist are happy with your mobility. This tends to be 2-5 days after your operation.

Please arrange for a friend or relative to collect you, as driving yourself or taking public transport is not advised in the early stages of recovery. If you are likely to require patient transport please inform one of the nurses as soon as possible.

Wound Care

Your wound may be closed with clips or a suture that runs beneath the skin. You may shower when you get home but bathing should be avoided for two weeks, until the wound is completely dry. If a dressing is required then a simple dry dressing from the chemist is sufficient. When shaving, care should be taken to avoid the area until it is fully healed.

The bone graft harvest site commonly takes 3 to 4 weeks to settle down.

Please contact the ward if you have any of the following:

- Redness around the wound
- Wound leakage
- High body temperature

The ward staff will inform you if you need to see a district nurse for any attention to the wound.

Surgical Collars

Instructions for use of collars vary depending on the exact procedure carried out, so please check with a member of your consultant's team before leaving hospital.

Driving

When to resume driving after surgery does depend on the procedure carried out. You must feel safe and confident to drive and be able to turn your head easily and have full power and sensation in your arms and legs. If in doubt please discuss driving with your surgeon before leaving hospital. Typically patients will return to driving 6 to 12 weeks after surgery.

Recreational Activities

Walking is the best activity to do following your surgery. Any other sports should be avoided until you can discuss them with your consultant in your follow-up appointment.

Work

You will need to be off work for at least four weeks. This may be longer depending on the type of procedure undertaken and also your type of work. Please discuss this with your surgeon before leaving hospital. The hospital can give you a certificate or you can ask your GP.

Lifting

Heavy lifting and carrying should be avoided.

Follow-up

You will be sent an appointment to return to clinic 12 weeks after your surgery. An X-ray will be needed at that stage.

If you have any questions about your procedure, please discuss them with either the ward nurses or a member of your consultant's team.

Summary

Anterior cervical discectomy and fusion is a successful operation for relieving arm pain and preventing the worsening of co-ordination and balance symptoms. The results of surgery cannot be guaranteed. A decision to proceed with surgery is one taken jointly by yourself and by your Surgeon. The vast majority of operations are highly successful. There are some small risks associated with the surgery and if these occur, they can be significant.

If you require a special edition of this leaflet

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