

Anterior cervical discectomy and fusion

Who needs it?

This operation is performed for two principal reasons, *myelopathy* and *radiculopathy*. In myelopathy there is pressure on the spinal cord and the patient commonly experiences symptoms of stiffness and clumsiness in the hands and legs whereas in radiculopathy the nerve roots are under pressure or are inflamed causing symptoms of arm or shoulder pain and weakness. The two conditions not infrequently co-exist. If conservative management has failed to control the symptoms or if they are not at an acceptable level surgery may be indicated.

How is it done?

The operation is performed under general anaesthesia through a small incision at the front of the neck. The incision is usually placed in one of the skin creases, when feasible, and may typically be 2 - 3 cm in length. By parting the tissues in the neck the spine can easily be reached and the disc can be removed (having first confirmed that it is the correct disc using an x-ray). The surgeon may then use an operating microscope to better visualise the nerve roots at the back of the disc space to ensure that they are fully freed up.

Some surgeons do not attempt to achieve a fusion, but allow the disc space to heal up on its own, others will insert either a bone graft or cage (a metal one made from titanium, or a plastic one made of PEEK) into the disc space, to distract the disc space back to its normal height and to allow the fusion to occur in the best position.

What are the risks?

There are short term risks, arising at the time of surgery and long term risks occurring thereafter. Short term risks include damage to the spinal cord behind the damaged disc. This is said to be around a 1% risk per disc operated upon. The nerve roots behind the disc may potentially be damaged by the surgery or bleeding causing a build up of pressure. The structures in the neck including the trachea, oesophagus and blood vessels are at risk. There is a small nerve, the recurrent laryngeal nerve, which runs in the groove between the trachea and oesophagus, which if damaged, may lead to vocal cord paralysis on the affected side. This may require treatment from a throat specialist or may resolve spontaneously.

Putting all these risks together, including the general risk of anaesthesia and infection, the total is around 1 - 2%.

The late risks include the possibility that the fusion will not heal, leading to a return of the pain the patient previously suffered, or that the bone graft will collapse, still fusing, but in a flexed posture. This latter is often prevented by inserting a metal plate over the bone graft.

Recovery

Most patients are out of bed on the morning after surgery, are generally given a soft collar to wear for comfort and are allowed home whenever they feel up to it, typically a day or so later.

Arm pain caused by the nerve being trapped by the disc usually resolves completely and quickly (often within hours of the surgery). Neck pain, however, may be due to multiple causes including the bad disc (which can sometimes be determined by discography pre-operatively) and, therefore, the results are less predictable.

X-rays are taken at six weeks post-operatively to ensure healing is occurring and may be repeated after a further six weeks.

Most patients are able to return to light work within two to three weeks but those in heavy manual labour will need to await bony fusion before returning, which may take three months. Sports need to be avoided until healing has occurred, if these involve contact (soccer, rugby, etc.) but non-contact sport can be recommenced typically four weeks after surgery.