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Surgery for cervical disc prolapse or cervical osteophyte

Anterior cervical fusion

What is a cervical disc prolapse?

A cervical disc prolapse is a protrusion of one of the discs in the neck. This protrusion frequently causes pressure on one of the nerves to the arm ("a pinched nerve"). On occasions, a cervical disc prolapse may press against the spinal cord, causing symptoms potentially much more serious than those of a single pinched nerve.

Prolapse of a disc is often referred to as a protruding disc, a herniated disc, a slipped disc, a bulging disc, a ruptured disc or even a collapsed disc. These terms usually refer to the same process.

Cervical disc prolapse is often associated with overgrowth of bone, the latter occurring as part of a degenerative process known as spondylosis. Spondylosis is extremely common. Nearly everyone over 35 years of age develops some degree of spondylosis. Spondylosis can make a disc prolapse more likely to cause pressure on the nervous system, resulting in neurological symptoms. In some cases, pressure on the nerve or spinal cord is caused by a spur of excess bone (an osteophyte), rather than a prolapse of the disc.

Why should the disc prolapse?

A normal healthy disc does not undergo prolapse, unless a severe accident occurs. Most cases occur as "the straw that breaks the camel's back". There has been gradual deterioration in the structure of the disc going on behind the scenes over many years, causing only minor or intermittent neck pain. Eventually, the disc prolapse occurs in an already weakened disc, and the severe symptoms develop. Often some fairly ordinary activity seems to have caused the prolapse, such as a game of tennis or an episode of gardening, but in reality this is only the "last straw". Not infrequently, people develop the symptoms of a cervical disc prolapse without being aware of any specific injury or event.

What are the symptoms of a cervical disc prolapse or osteophyte?

The most important symptoms are neurological symptoms, meaning those symptoms due to pressure on the nerve(s) in the neck. These symptoms are usually felt in one arm. Pain is often severe, especially in the shoulder and upper arm, and may shoot down the arm to the hand or fingers. Tingling or numbness in one or more of the fingers is very common. Loss of strength is also common, particularly with strength at the elbow. The exact pattern of symptoms depends on which particular nerve is involved.

If the disc prolapse causes pressure on the spinal cord, then symptoms in all four limbs can occur. Rather than causing pain, pressure on the spinal cord causes tingling in the arms or legs (or both), as well as causing impairment of walking due to unsteadiness of gait. Control over bladder and bowel function can also be impaired.

Neck pain is a common part of the picture, but is usually not due to the disc prolapse itself. So too is headache a common complaint. However these symptoms are not usually considered to be caused by pressure on any one particular nerve.

How is the diagnosis made?

The diagnosis is often suggested on CT scans of the neck which your referring doctor may already have arranged. However, before surgery is performed, either a MRI scan or a myelogram will usually be needed.

What is an MRI scan?

This is a simple and safe test, similar in many ways to a CT scan. The scans are produced using a technique known as magnetic resonance imaging, and no radiation is involved. There is no need for admission to hospital. People with heart pacemakers cannot have the test. There is usually no need for any injections, but people prone to claustrophobia may find the examination somewhat stressful, and should report any anxiety at the time of the test.

What is a myelogram?

This is an X-ray examination done in hospital, usually involving an overnight stay. A radiologist (specialist doctor) injects a small quantity of dye into the spinal fluid of the lower back, after which x-rays and CT scans are performed. The dye outlines the spinal canal, clearly revealing any pressure on nerve(s). It is usually a simple and safe test, but headaches occur after the test in about 20% of people. The headaches can be severe, though they are rarely dangerous and usually pass in a day or two.

Why do I need surgery?

The main reason for recommending surgery is to relieve the pain that radiates down the arm. If there is evidence of nerve damage causing weakness in the arm, surgery may also be advisable even if the pain is not severe. It is not customary to perform surgery for the relief of neck pain.

What operations are done?

There are two main types of operation done for cervical disc prolapse or osteophyte causing pressure on the nervous system. One is done through the front of the neck, and the other is done through an incision over the back of the neck. Some surgeons perform all their operations one way or the other, but most will plan an operation specifically suited to the particular problem. Surgeons will therefore inevitably differ to some degree on the operation advised for a particular situation.

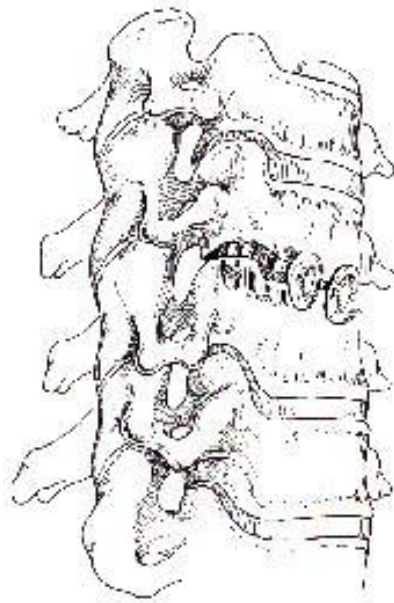
The operation done through the front of the neck is usually called anterior cervical fusion or discectomy and arthroplasty. The operation from behind is either a cervical foraminotomy or a cervical laminectomy.

What is actually done in the operation?

In an anterior (from the front) operation, an incision is made just to the right side, often running in a skin crease. It usually heals to a fine line quite quickly. The wound is on the right even if the symptoms are on the left. The surgery is performed between the throat and the blood vessels of the neck. The correct level is identified with an x-ray taken during the surgery, then the procedure is performed.

The details vary depending on the particular problem, but generally the disc is completely removed, along with some bone from the vertebrae on either side of the disc. This is rather like removing the mortar between two bricks, and then trimming a little of the brick on either side of the gap. This gives space for the surgeon to remove the offending particle of prolapsed disc or to trim away the osteophyte as the case may be. In either case the object of the exercise is to relieve pressure on the nerve or the spinal cord, depending on the symptoms and results of preoperative investigations.

Once the decompression is complete, there is usually a gap in the structure of the spine where the disc was. Options: a) fusion b) arthroplasty. Often this gap is filled using a hollow synthetic "cage" into the gap. The cage is filled with bone particles and has a thread, which enables it to grip the bone. The cage is illustrated below:



What about risks and complications?

The risk of serious complications is low, and the risk of death is remote. The risk of less serious complications is somewhat higher. Complications are of two types, general and specific. General complications are those that can occur with any operation, while specific complications are those relating to surgery on the cervical spine. General complications are in general related to age and to underlying disease. A person aged 75 years with diabetes and a history of heart attack is at greater risk of complications than a 40 year old with perfect health.

General complications include stroke, heart attack, bleeding in the wound postoperatively, blood clots in the legs (which can travel to the lungs or heart) and infection. Specific complications include damage to one or more of the nerves or spinal cord travelling through the spinal canal. This could cause permanent numbness or weakness in the limbs, and could affect control of bladder or bowel.

Serious complications are rare. You should not be unduly concerned with the risk of serious complications. However, failure of the surgery to meet expectations (without anything going wrong) is a more likely possibility. This means that despite the best efforts of the patient and the surgeon, the symptoms do not respond to surgery, as one would normally expect. This is very disappointing but does occur in up to 10 percent of cases. Reasons are not always obvious.

How long will I be in hospital?

If a myelogram were needed, the usual stay would be about 6 days. If no myelogram is required, then allow about 5 days.

What can I expect after the operation?

There will be some pain in the area of the wound itself, as well as a sore throat, possibly with some slight difficulty in swallowing for a day or two. Normally, a firm collar is required. If a bone graft has been taken from the hip, the hip wound will be sore, often more so than the neck wound. You will be able to get up, sit out and move around the day after the operation. Bowel actions usually do not occur until the third or fourth day after surgery - this is quite normal and should not cause any concern.

Will I need physiotherapy?

Most patients are seen by a physiotherapist during their stay in hospital, mainly to ensure that the simple movements like getting out of bed are done correctly. There is usually no physiotherapy during the first six weeks or so after discharge from hospital, and only a minority of people will need on-going physiotherapy after that.

What about when I get home?

The most important aspect of the first six weeks after surgery is rest. Just as concrete needs time to dry and harden, so too does the wound need time to heal, internally as well as externally. This takes at least six weeks. The best plan is to

schedule two good walks of about 15 mins each per day, and to spend most of the remaining time resting. If your occupation is sedentary, then a return to work in 4 to 6 weeks is likely. If your work is manual, then a longer time off work can be expected. A collar maybe used for the first 6 weeks. Generally, it is safe to remove the collar, but it should be worn only if it provides comfort. The details of collar usage will be discussed before you go home. Your first review appointment will be about six weeks after the operation.

It is hard to predict how long it will take for recovery to be completed. In most cases, the symptoms due to the disc prolapse will have eased within six weeks, but you should not regard this as a deadline - some people take much longer than this to get benefit from surgery.

If your neck problem is the result of an injury at work, then you will require a rehabilitation program. The type of program needed will depend on the nature of your work, the size of the workplace, the duration of symptoms and on the details of the surgery itself. Rehabilitation may involve input from a number of sources, such as your family doctor, your employer or rehabilitation service providers, whether they be as an inpatient or outpatient.

A handwritten signature in black ink, appearing to read 'P. D'Urso', with a stylized flourish extending from the end.

Paul D'Urso
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