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## **Surgery for cervical disc prolapse or cervical osteophyte**

### **Cervical foraminotomy**

#### **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 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 an 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 areas of pressure on the nervous system. 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 discectomy or anterior cervical fusion. The operation from behind is a cervical foraminotomy.

## **What is actually done in a cervical foraminotomy?**

Cervical foraminotomy involves an incision on the back of the neck, usually just to one side of centre over the lower part of the spine. The muscles are separated from the spine and the bone overlying the point of pressure is exposed. Frequently a small injection of blue dye will have been performed in the x-ray department just prior to the operation, and the dye is visible to the surgeon near the point of pressure. This is an additional method often used to ensure that the correct point has been identified.

A highly sophisticated drill is then used to open the channel in the spine through which the compressed nerve passes. If the problem is due to bone spurs, then this is all that is required as the opening of the channel involves removal of at least some of the bone spurs automatically. If the pressure is due to disc prolapse, then removing the bone gives access to the part of the disc that is actually protruding. If this can easily be exposed, and particularly if there is a "loose" piece of disc jammed under then nerve, then that piece is extracted. The vast bulk of the disc is left undisturbed. If the disk is bulging but is not ruptured, then the surgeon may elect not to remove any of the disc at all, in which case the removal of bone is normally sufficient to relieve pressure on the nerve.

## **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. A blood transfusion is virtually never used in this operation. Specific complications include damage to one or more of the nerves 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 is needed, the usual stay would be about 8 days. If no myelogram is required, then allow about 7 days.

### **What can I expect after the operation?**

There will be some pain in the area of the wound itself, as well as some shooting pains in the arm in the first few days. There will be an intravenous drip inserted during the operation, and through this strong pain relief will be given for the first 48 hours or so. After that, tablets will be used, along with occasional injections as required. The first standing out of bed usually occurs 48 hours after surgery, though can be attempted sooner. After a few days, most people are able to get in and out of bed unassisted and to take walks around the ward quite comfortably. Bowel actions usually do not occur until the fourth or fifth 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. Undue bending and lifting during this time must be avoided. Driving is generally considered inadvisable in the early weeks, even as a passenger. 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. Swimming is an excellent exercise after spinal surgery, but should not begin until after you have attended your General Practitioner. The do's and don'ts will be discussed before you leave the hospital.

It is hard to predict how long it will take for recovery to be completed. In most cases, the symptoms due to the pressure on the nerve 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.



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February 2006