ORTHOPAEDIC SURGEON
Provider no. 437669X

Anterior Cervical Discectomy & Fusion (ACDF)

Introduction

Because of your neck and/or upper extremity symptoms, your doctor has recommended surgery. The type of surgery is called a spinal fusion.

Indications for surgery

A spinal fusion is recommended for the treatment of several spinal disorders. These include pain due to arthritis, disc degeneration or herniation, or the slippage of one spinal bone or vertebra. Prior to recommending a fusion, your doctor has performed tests to identify the exact levels in your spine, which are causing the pain. A spinal fusion is performed to eliminate movement at these levels.

Description of procedure

To eliminate movement, the vertebra at the painful levels can be surgically fused together. To accomplish this, your surgeon will place additional pieces of bone along the sides and/or between the vertebrae. When this bone matures and becomes solid, the vertebrae are fused together, eliminating movement at that level of your spine. Those spinal levels, which are not surgically fused together, will continue to move as before. The spinal levels next to the fusion are under greater stress and future degeneration at the levels may be accelerated.

Additional bone used at the time of surgery can be your bone or from a bank bone. This is usually determined prior to surgery. Your bone is taken from the pelvis, through a separate incision. Bank bone is obtained from the Victorian Bone Bank but this source is infrequently used because your own bone is so much better.

Instrumentation

Based on your individual case, your doctor may recommend the surgical placement of rigid hardware, or instrumentation. The instrumentation would consist of plates attached to the vertebrae by screws, and wires may also be used. These are placed to immediately stabilise those vertebrae undergoing surgical fusion and increase the likelihood of a solid bony fusion occurring. The surgical risks associated with instrumentation are the same as those of the spinal fusion with the addition of an increase in surgical time of approximately one half-hour.

Until the bony fusion has become solid, great stress is placed on the instrumentation, which may cause it to loosen or even break, although breakage is rare. For this reason, patients with instrumentation are still required to wear a neck brace to minimise the stress placed on the fusion site. Loose or broken instrumentation can be associated with neck pain and/or arm pain. When warranted, the instrumentation can be surgically removed.

Risks

Your tests and examinations indicate that surgery is an appropriate treatment option for you. However, medicine is not a perfect science and your surgeon cannot guarantee total relief of symptoms following surgery.

All surgery has associated risks. There is a risk with general anaesthesia or being put to sleep. Lung problems, blood clots, fluid accumulation near the wound, and wound infections can occur. Unexpected complications, such as an allergic reaction to the anaesthesia, or injury to a major blood vessel, can result in death.

There are additional risks with spinal surgery. If a spinal nerve is injured, it could result in permanent pain, numbness, or weakness in a limb, or loss of bowel or bladder control. If the spinal cord is injured, it could result in permanent paralysis in the arms and/or legs.

The spinal nerves and spinal cord travel through the vertebrae in a sac filled with spinal fluid. If the sac is punctured, spinal fluid will leak out. This is known as a dural leak. If this occurs, the patient is to remain flat in bed for 48 hours to prevent a spinal headache and allow the puncture site to heal. On rare occasions, an injection or future surgery may be required to seal the puncture site.

Unfortunately, there is no way to guarantee the bone in your fusion will mature and become solid. Factors such as metabolism, age, and activity level play a role in your body's ability to "weld" together the

pieces of bone placed during surgery. The progress of your fusion will be monitored with x-rays at your follow-up appointments.

Studies have suggested that smokers have a significantly lower rate of successful solid fusions as compared to non-smokers. For this reason, it is strongly recommended that all patients contemplating a spinal fusion stop smoking prior to their surgery. Also, it should be noted that solid fusions will not always eliminate your pain.

Most fusion cases include harvesting bone from the patient's pelvis. Immediately following surgery, this area may be the greatest source of pain. In most cases, the pain subsides over time but may not completely go away.

Some fusions require the use of bone plugs. During the first several months following surgery, and before the fusion is solid, these bone plugs can become dislodged. Depending on the amount of movement that occurs, additional surgery may be required to reposition the bone plug.

The incision for an anterior (front) fusion is made on the side of the neck. The surgery requires tissues in the front of the neck to be pulled to the side. This may result in temporary or permanent hoarseness or problems swallowing. There is also a risk of problems breathing as a result of swelling or bleeding after surgery.

While these are the most likely complications, this list is not complete, and other complications can occur. These risks should not be taken lightly; however, the possibility of any of these happening is very low.

Bracing

Post-operatively a semi-rigid brace (Philadelphia collar) is used. This will immobilise the area of the fusion and allow the fusion to heal. The brace is used for six to twelve weeks after surgery. At that time, you will be instructed to gradually stop wearing it. You may take the brace off to shower.

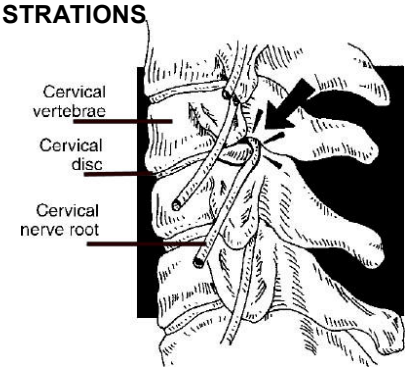
After surgery

Although most patients remain in the hospital two to four days after surgery, some patients remain longer. When you are sent home from the hospital you are normally self sufficient in personal care. However, depending upon your home situation, arrangements may need to be made for additional help. If you have any type of hardware put in place at the time of surgery; you will need antibiotics before and after any kind of dental work, including routine dental cleaning. You will need to call our office at least two days prior to your dental appointment.

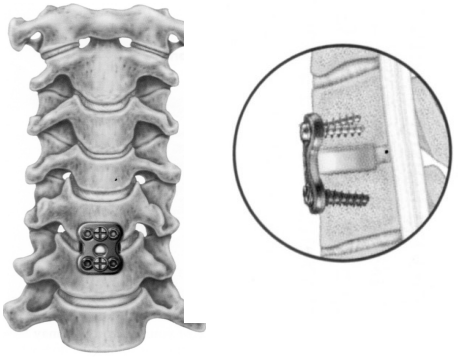
When you are released from the hospital, a prescription for a pain medication will be provided. It is recommended that you use this medication sparingly and only when Panadol or Panadeine does not give enough pain relief. No non-steroidal anti-inflammatory medications will be given for approximately three to six months after surgery. Prescription pain medication will be carefully monitored to guard against overuse and addiction. Non-addicting medication will be recommended as soon as possible.

There are substances produced in the brain, called endorphins, which are similar to Morphine. Endorphins help increase our tolerance to pain. When prescription pain medications are used, the brain slows down the production of endorphins. Over time, more and more pain medication is required to receive the same pain relief because of the loss of endorphins. For this reason, it is important to use prescription pain medication for only a short period of time. This will minimise their interference with the body's natural pain relievers.

ILLUSTRATIONS



This diagram demonstrates a disc prolapse pressing on a cervical nerve root which causes arm pain, weakness and/or numbness.



These diagrams show the disc has been removed, the nerve root has been decompressed and a bone graft and plate have been applied.