MELBOURNE NEUROSURGERY

SURGICAL PROCEDURE
INFORMATION

Prepared
For

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CERVICAL DISCECTOMY and ANTERIOR FUSION

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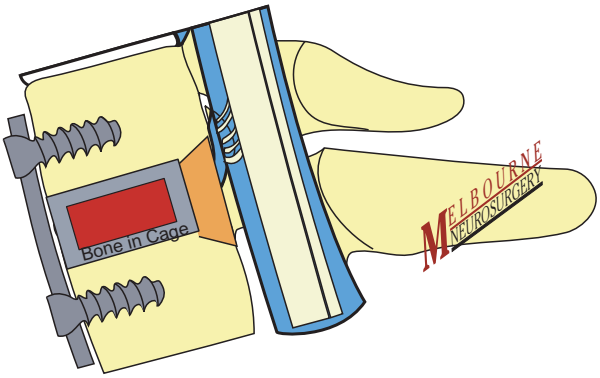
WHAT IS AN ANTERIOR INTERBODY FUSION?

The aim of a Cervical Interbody Fusion is to join two or more vertebrae together. This is done by removing a cervical disc and inserting a carbon fibre cage filled with bone or bone substitute into the space left behind. To hold things while this all sets (fuses) we need some scaffolding. This is in the form of Titanium plate screwed onto the front of the two vertebral bodies. . In a building the scaffolding is removed when everything has set. In the body it can stay under the skin as it is not seen and another operation would be needed for removal.



WHAT ARE THE REASONS FOR HAVING A CERVICAL FUSION?

The commonest reason is because you have a disc prolapse or boney spur causing compression of something in the neck. This may be a nerve or the spinal cord. The reason for the surgery is because your symptoms have not improved with non operative treatment

You may have pain, numbness or weakness in your arm/s. Some patients will have problems with their walking if they have pressure on the spinal cord. If the pressure is just on the nerve as it leaves the spine this will tend just to cause problems with the arm. You may have instability in one of the discs in the neck causing a slip of one vertebra on another called a Spondylolisthesis.

Sometimes the cause of your symptoms is a degenerative process in the neck where the facet joints enlarge, the disc bulges and the yellow ligament thickens (called Cervical Canal Stenosis). This all reduces the space around the nerves and the spinal cord to causes your symptoms. This may treated by a laminectomy but if we feel that the pressure is predominately from the front then removal of the spur from the front and a fusion is recommended.

Some other types of surgery for your problem that will have been considered are

Cervicaldiscectomy alone (no fusion)

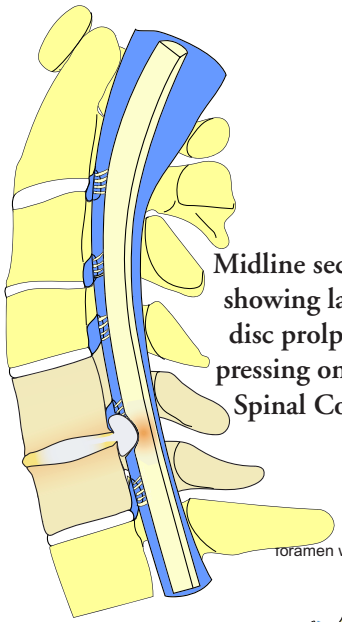
Cervical laminectomy

Cervical foramenotomy

Artificial disc replacement

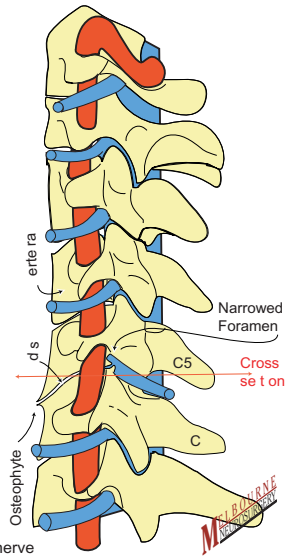
If you are having surgery it usually means that the symptoms have not gone away with other therapies such as physiotherapy, rest, anti-inflammatories, nerve root blocks or epidurals. Some patients do get better with time. Some patients may get a progression of their symptoms over time. In some patients the need for surgery is only a matter of time.

We would not normally perform a fusion for neck pain alone as this generally does not improve with this type of surgery unless there is evidence of instability on your x rays.

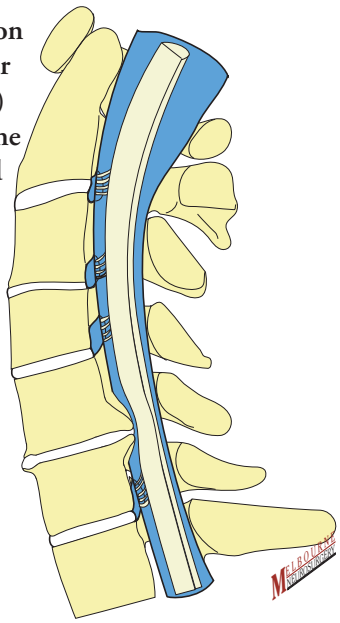


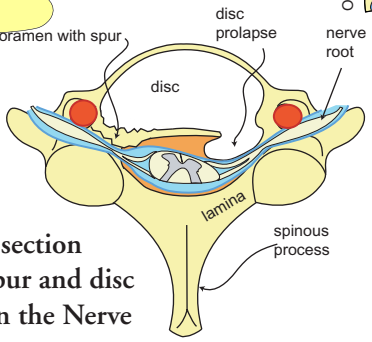
Midline section showing large disc prolpase pressing on the Spinal Cord

Side view of the spine showing spur (osteophyte) pressing on a Nerve as it leaves the spine

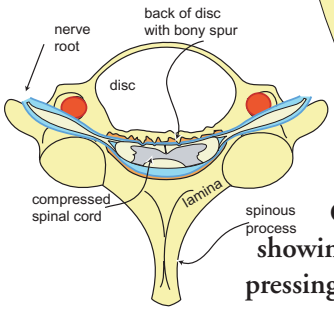


Midline section showing spur (osteophyte) pressing on the Spinal Cord





Cross section showing spur and disc pressing on the Nerve



Cross section showing spur(osteophyte) pressing on the Spinal Cord

WILL ALL YOUR SYMPTOMS GET BETTER WITH SURGERY?

This depends on the patient.
If arm pain and a **disc prolapse** is the reason for the surgery. If you have severe arm pain/weaknes and numbness then you should wake up with improvement in your arm pain. Most will get substantially better and some will get complete resolution. This may depend on the amount of damage done to the nerve from the compression. Typically the arm pain is the first to improve. The muscle strength will then get better next but any thinning of the muscle may not improve. The strength does not always return back to normal. Numbness should improve but may not. It may take 9 months for this to be evident.

If **spinal cord compression** has been the reason for the surgery the aim of the surgery is to try to prevent further worsening and any problems with walking and your hands may not improve. Some patients will see an early rapid improvement that will plateau out. Even with successful surgery you can see deterioration with age after an initial very good improvement. Hand problems such as numbness or clumsiness may improve but any burning may not and sometimes the burning in the hands or feet may get worse over time.

Some patients will get increased neck pain after the surgery. Chronic pain may not improve. It may take years for a good result from the surgery

WILL YOU GET BACK TO NORMAL?

Again this depends on the patient. Some will and some will not. The aim is to make a substantial improvement in your symptoms but some patients see no change at all. Not all your symptoms may be able to be treated with surgery. Most patients will have problems with the rest of the neck also. This means that the surgery may not resolve all symptoms as some may be coming from other discs.

COULD YOU NEED FURTHER SURGERY?

The spine is in a continual process of degeneration and the same surgery at the existing level may need to be repeated if you do not fuse. It is not unusual to need surgery at an adjacent level depending on the reasons for your fusion. It is felt that in some cases the fusion may put added strain on an adjacent level and cause deterioration that may need further treatment. If fusion does not occur the screws may work loose. This may need further surgery to correct. Some patients may develop a disc prolapse at the level above or below a fusion. If any compression cannot be fixed by anterior surgery alone you may need further surgery on the back of the spine such as a Laminectomy or Cervical Foraminotomy. If the fusion needs to be revised you may need to have a Posterior Cervical Fusion.

WILL THE SURGERY ALWAYS BE DONE AS DESCRIBED PRE-OPERATION?

Some times while the surgery is being performed it may be felt that to get adequate control of the situation or to prevent further deterioration in the future that a different type or more extensive procedure may need to be performed. This may just be a further extension of the existing procedure or a much more involved procedure. A smaller procedure may be done to reduce the risk of a later deterioration or because the operative findings are not as bad as suggested by your imaging. This may also occur it is felt that your bone may be too soft for any screws. Some parts of the surgery may not end up being technically possible or safe.

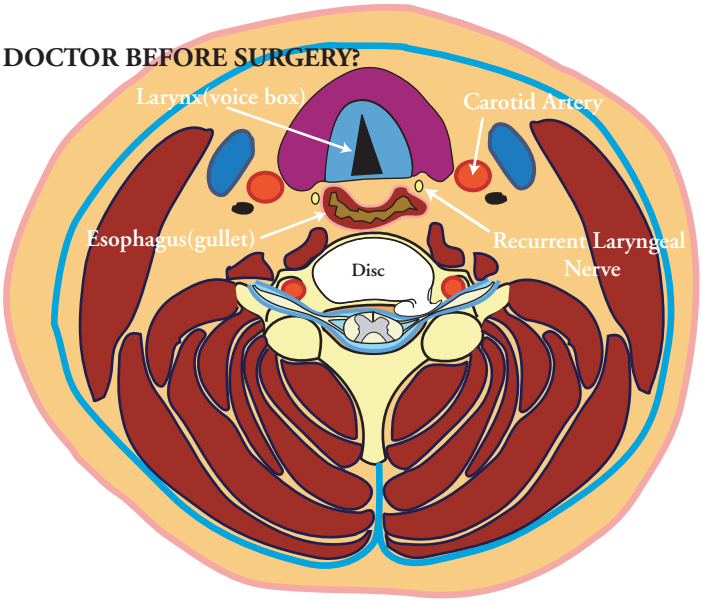
WHAT WILL HAPPEN IF YOU DO NOT HAVE THE PLANNED SURGERY?

In the case of a disc prolapse pressing on a nerve the longer that you wait the more likely you are to get better so you may improve enough to not need the surgery.
In the case of fusion for spondylolisthesis and canal stenosis the surgery may be inevitable.
The symptoms may not improve or may get worse.
If the situation worsens you may find that the symptoms of pain, numbness or weakness get worse. I f you have spinal cord compression and the compression becomes worse you may develop problems with your spinal cord that mean you have problems walking or using you hands. It may progress to paraplegia or quadriplegia. If you have a fall and injure your neck you may become acutely worse.

Sometimes if the compression to the nerves or spinal cord is left too long before decompression it reduces the chances of a complete or any improvement following surgery.

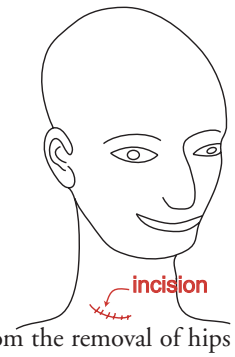
WHAT YOU NEED TO TELL THE DOCTOR BEFORE SURGERY?

If you have clotting problems
Any recent new Health problems or heart disease
If you are taking blood thinning agents
E.g. Warfarin / aspirin/anti- inflammatory
If you have improved from the time you decided to have surgery
Drug allergy
Any thing that you think is important for the doctor to know in making his decision to offer you surgery.



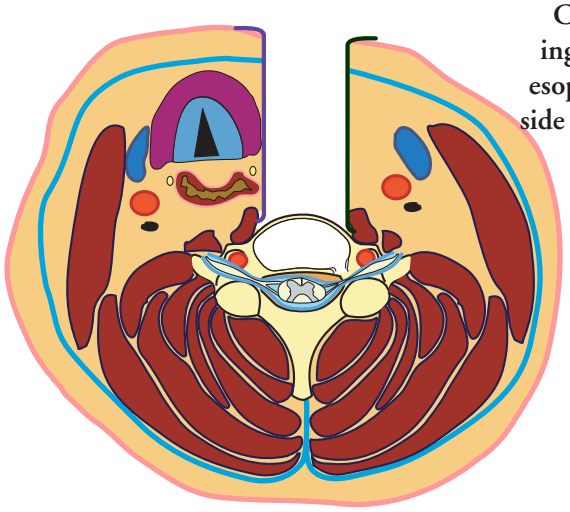
WHAT ARE THE STAGES IN THE SURGERY?

1. The exposure of the disc/s in the neck that need/s to be fused.
2. The decompression of the squashed nerves by the removal of the offending disc +/- bone.
3. Preparing the area for the bone grafts
4. Insertion of the cages and bone graft into the disc space
5. Placement of the plate on the front of the spine
6. Insertion of the screws to hold the plate to the spine
7. Getting control of any bleeding and closing up the wound.

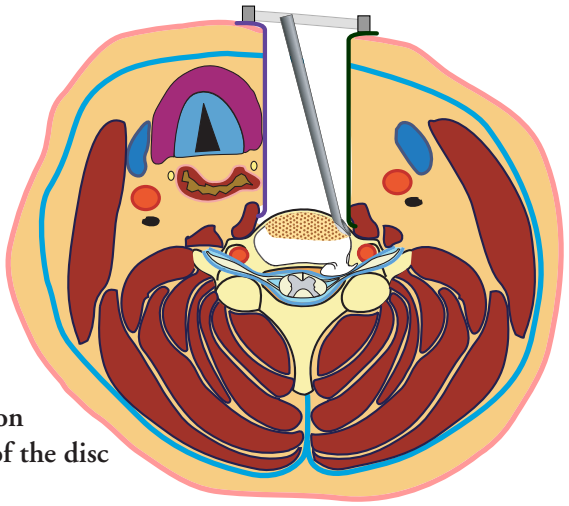


WHERE DOES THE BONE FOR THE FUSION COME FROM?

We save and use the bone from the decompression. We may bone that has been harvested and specially prepared from the removal of hips in hip replacement surgery(called Crunch)or synthetic bone if we cannot or you do not want us to use Crunch. We may add a synthetic bone growth promoting substance to the bone to encourage a quicker and more solid fusion. Most patients usually choose to use the Crunch because of the high incidence of pain from taking bone from the hip region.



Cross section showing the larynx and the esophagus moved to the side to allow access to the disc



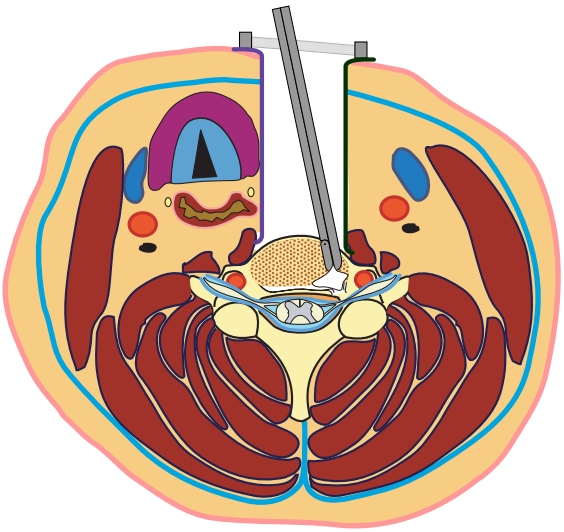
Cross section showing removal of the disc

HOW IS IT PERFORMED?

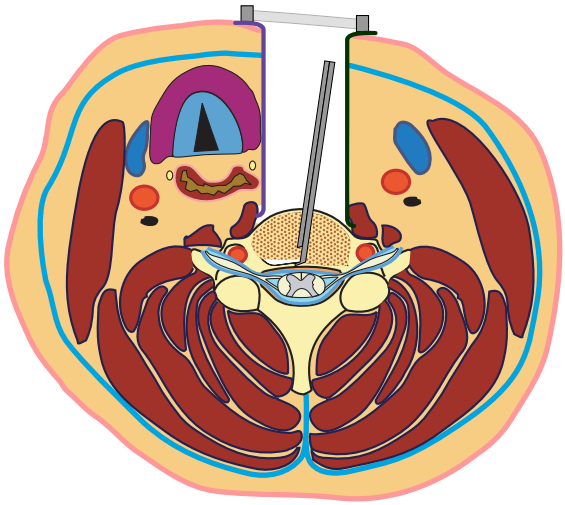
In the operating theatre you are given a general anaesthetic. A catheter may be inserted into your bladder. You are then positioned on your back with your neck bent backwards slightly on special frame. An incision is marked out and the area prepared with antiseptic. You are covered in drapes so that only the incision can be seen. The level is checked with X-ray. A cut is made through the skin down to the muscle of the neck. The muscle is opened to expose the carotid artery (main artery to the brain). Moving the carotid artery (main artery to the brain) to one side we identify the esophagus (gullet) and the larynx (voice box) and these are moved to the other side. These are then held out of the way with a special retractor. The disc is then removed and through this gap all the spurs and material around the spinal cord and exiting nerves is decompressed. This is done with a combination of punches and a high speed drill.

With the decompression complete the bone at the ends of each vertebra is cleaned to help encourage fusion. Then a cage (packed with bone) is inserted. The plate is then fitted to the front of the spine.

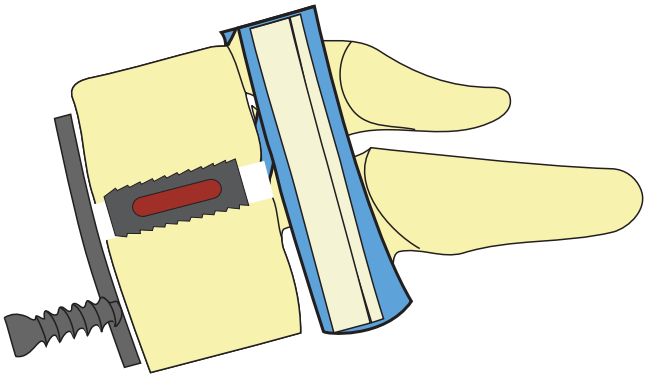
Identifying the insertion point for the screws, these are then inserted and X-ray may be used to confirm the position. There are two screws to each vertebra. Special attention is given to make sure all bleeding is stopped. The layers are then all sewn back to their normal positions. The skin may be closed with a nylon removable suture or with a dissolvable suture.



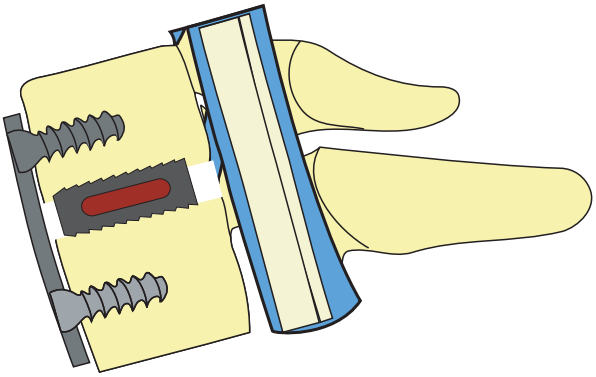
Cross section showing removal of the disc fragment pushing on the nerve



Cross section showing removal of anything pressing on the spinal cord



Midline section showing Cage inserted and the plate going on



Midline section showing the end result

WHAT HAPPENS NEXT?

You will wake up in recovery and after about 1 hour you will be transferred to the ward. The nursing staff will be continually checking your pulse/blood pressure/and leg strengths looking for any changes to indicate a complication. During the first night on the ward you will be woken for these observations. You will have intravenous analgesia that you will control by pushing a button (this will be explained pre-op).

The next day the drip in your arm will be removed after your first walk and then you will be given regular Oral analgesia. Gradually over the next 1-2 days you will be able to get around as normal. When you are comfortable you will be able to go home.

It is important after the operation to walk as much as possible. Prolonged rest in bed can produce hip pain and clots in the legs.

All patients are only fitted with a cervical collar if more than one level is fused or if a plate is not placed on the front of the spine. This will need to be worn for at least 6 weeks after the surgery.

Sometimes a couple of days after the operation the discomfort in your arm may return, this is due to swelling and usually settles with anti-inflammatory tablets.

If you have removable sutures then they are removed between 5 and 7 days.

HOW LONG WILL YOU BE IN HOSPITAL?

You may be admitted on the day of surgery or the day before. You will fast from midnight on the day of surgery. You will be discharged about 1-3 days post-operatively. On discharge you will be able to perform most tasks of daily living (e.g. showering/dressing/etc.)

WHAT YOU SHOULD NOTIFY YOUR DOCTOR OF AFTER SURGERY?

Weakness in the legs or arms
Difficulty passing your urine
Increased difficulty swallowing
Increasing arm pain or numbness
Fever
Chest Pain
Increasing neck pain
Swelling or infection in the wound
If you do have any concerns do not hesitate to contact the practice or your local doctor

WHAT HAPPENS WHEN YOU GO HOME?

(See the postoperative leaflet for more information)

You may need to wear a cervical collar for at least 6 weeks
You should avoid Heavy lifting
You will not be able to drive for at least 2-6 weeks
You should be able to return to some sort of work at about 1 month.
It is important to walk as much as is comfortable.
You will be reviewed at 6 weeks and will have follow up X-rays regularly.
If you smoke it is best to try to give this up.
If you are overweight then loss of weight is important

WHAT ARE THE RISKS?

(Discuss these and anything important to you with your surgeon)

Some of the possible complications are:

Infection (treated with antibiotics)
Damage to the gullet(esophagus) causing difficulty swallowing / infection
Damage to the nerve to your voice box(recurrent laryngeal nerve) causing hoarse voice, difficulty breathing.
If not completely damaged will normally get better after a month or so
Damage to an artery to the brain causing stroke(paralysis down one side of the body) or death.
Damage to the nerve that is compressed by the disc.
This may cause weakness, numbness and/or chronic pain
Damage to the dural sac containing the spinal cord and producing a fluid leak.
Stops with bed rest but may need surgery to repair
Damage to spinal cord causing paraplegia,difficulty walking or death from inability to breathe
Producing a droopy eyelid on the side of the surgery from injury to its nerve
Post operative blood clot. May require drainage or cause death.
Wound breakdown
Bone graft site pain and infection
Paraplegia +/- loss of bowel and bladder function (very rare)
Screw or Cage misplacement or movement
Surgery on the wrong disc
Blindness
Death
Symptoms may be made worse
Further surgery may be required
Blood transfusion complications
Medical complications not related directly to the surgery

e.g. Clot in the legs (can travel to the lungs [uncommon])
Pneumonia
Heart attack
Urine infection
Kidney failure
Stroke
Drip or catheter infection

WHAT ARE THE COSTS OF THE SURGERY?

Discuss this with your surgeon

There are out of pocket costs for the surgery above the amount you will get back from your health fund. It is important to discuss this with your doctor and to contact your fund to understand not only the cost of the surgeon but also the costs of the hospital admission and other people involved. The assistant will send an account for 20% of the value of the surgeons' fee.

If you have no health insurance and wish to have the surgery privately then you should discuss with the office staff to organize an estimate.

YOU WILL BE ASKED TO SIGN A CONSENT FORM TO SAY THAT YOU UNDERSTAND ANY RISKS.
IF YOU ARE NOT SURE ASK BEFORE YOU SIGN.

If you feel that you need a second opinion we recommend that you ask your local doctor to arrange an independent opinion for you.

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