Dr E D Ratahi FRACS

Orthopaedic Surgeon

Patient Information

Posterior Cervicoforaminotomy

Following your recent MRI scan and consultation with your Dr Ratahi, you have been diagnosed with having narrowing in your cervical spine causing nerve root compression (trapped nerve) and arm pain.

Cervical spine disease is a fairly common problem seen in adults. When that disease involves the compression of spinal nerves in the neck, people may seek advice from their doctor. Symptoms can range from mild neck pain to severe numbness in the hand and electric-like pain shooting down the shoulder, arm, and hand. Some patients can even experience significant weakness in the arm or hand. Fortunately, most people can be treated successfully without surgery or aggressive treatment. In a few patients, however, these symptoms can persist despite conservative treatment or become so severe that surgery is recommended for relief. Anterior cervical discectomy and fusion (ACDF) is a well-known procedure to address such a problem. It involves going through the front of the neck and removing disc material from a spinal level and then stabilizing that level by placing bone graft material and metallic hardware. When the spine is fused, there is no longer motion at that level. Posterior cervical foraminotomy is an alternative surgical procedure to relieve symptoms of a pinched spinal nerve. This procedure is performed through the back of the neck and it creates more space for the spinal nerve to pass through. In properly selected patients, posterior cervical foraminotomy is as effective as ACDF surgery without requiring a fusion procedure.

What happens before I come into hospital?

This information will help you prepare for admission to hospital. Treatment is always planned on an individual basis so your experience may differ slightly from the information given.

Dr Ratahi will perform your operation at Kensington Hospital.

All our staff are friendly and available to help answer any questions that you may have at any stage of your treatment.

Pre-assessment

If there are concerns around your fitness for an anaesthetic you may be asked to attend a pre-assessment. This is a medical examination made by the anaesthetist who works with Dr Ratahi to make sure you are well enough for surgery.

Transport

Patients are responsible for their own transport to and from the hospital. You will be informed of your admission and discharge date in advance so that you can arrange for a relative, friend or taxi to transport you.

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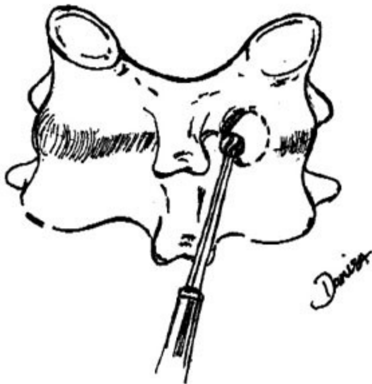
What happens on the day of surgery?

On the morning of your surgery you will be greeted by the staff at the hospital reception on your arrival. Before being taken to the theatre suite you will be greeted by the nursing staff who will be looking after you and ask you to change into a hospital gown to get you prepared for theatre. You will be assessed by Dr Ratahi and the anaesthetist to perform a final check that you are fit for surgery and answer any questions you may have. You will be asked to sign a form giving your consent to the operation. You will then go to theatre, accompanied by a nurse where your personal details and the operation will be confirmed.

About the operation

Posterior cervical foraminotomy relieves spinal nerve root compression by creating more room for the nerve root to pass through the foramen. When disc material compresses the nerve root on one side (unilateral compression), the cervical foraminotomy can be used to remove the portion of the offending disk. When a bone spur narrows the foramen and compresses the nerve root, a posterior cervical foraminotomy can be used to chisel away the spur to widen the passageway. Some refer to this procedure as minimally invasive, in that the incision is relatively small and no fusion of the spine is required.



The procedure is performed in the back of the neck, which means that you will be lying face down on the operating table. You will be under general anesthesia so that you will feel nothing during the procedure. The spinal surgeon will make a small 1 to 2 inch skin incision and with the help of magnification, he/she will dissect away soft tissue on the side of the compression. Precision instruments are used to carefully remove a small amount of bone which serves as the outer wall of the foramen. Once the foramen is opened, the nerve root can be seen. In cases of compression due to disc material, the nerve root is gently lifted and the disc material is removed. The wound is then closed, and the surgeon may provide you with a soft collar. A variation of this technique is a truly minimally invasive procedure where the surgeon may use an even smaller skin incision and use a tubular retractor to access your spine. Regardless of which approach, standard skin incision or with minimally invasive tubes, posterior cervical foraminotomy provides relief of nerve root compression with minimal bone removal. Symptomatic relief is seen in 85- 90% of cases. Some patients may require a short course of post-operative physical therapy. Risks of this procedure are uncommon but they include: bleeding, infection, neck stiffness, repeat disc herniation, incomplete relief of symptoms, damage to nerve root or spinal cord, or problems with anesthesia.

Risks and complications

As with any form of surgery, there are risks and complications associated with this procedure. These include:

- Damage to the nerve root and the outer lining or covering which surrounds the nerve roots (dura). This is reported in < 5% of cases (fewer than 5 out of 100 people). It may occur as a result of the bone being very stuck to the lining and tearing it as the bone is lifted off. Often the hole or tear in the dura is repaired with stitches or a patch. This could result in neck or arm pain, weakness or numbness, leaking from the wound, headaches or, very rarely, meningitis;
- Recurrent arm pain, as a result of scarring;
- Problems with positioning during the operation which might include pressure problems, skin and nerve injuries and eye complications including, very rarely, blindness. A special gel mattress and protection is used to minimise this;
- Infection. Superficial wound infections may occur in 2 – 4% of cases (up to 4 out of 100 people). These are often easily treated with a course of antibiotics. Deep wound infections may occur in < 1% of cases (fewer than 1 out of 100 people). These can be more difficult to treat with antibiotics alone and sometimes patients require more surgery to clean out the infected tissue. This risk may increase for people who have diabetes, reduced immune systems or are taking steroids;
- Blood clots (thomboses) in the deep veins of the legs (DVT) or lungs (PE). This occurs when the blood in the large veins of the leg forms blood clots and may cause the leg to swell and become painful and warm to the touch. Although rare, if not treated this could be a fatal condition if the blood clot travels from the leg to the lungs, cutting off the blood supply to a portion of the lung. It is reported as happening in fewer than 1 out of 700 cases. There are many ways to reduce the risk of blood clots forming. The most effective is to get moving as soon as possible after your operation. Walk regularly as soon as you are able to, both in hospital and when you return home. Perform leg exercises and keep well hydrated by drinking plenty of water.
- Bleeding in the wound and swelling in the windpipe (laryngeal oedema), which could result in difficulty breathing or swallowing. You must inform your consultant if you are taking tablets used to thin the blood, such as warfarin, aspirin or clopidogrel. It is likely you will need to stop taking them before your operation as they increase the risk of bleeding;
- Bone graft non-union or lack of solid fusion (pseudoarthrosis). This can occur in up to 5% of cases (5 out of 100 people). See below for factors which can affect fusion;
- Graft / cage movement can occur in up to 2 out of 100 cases, with 1 out of 100 requiring re-operation. In extremely rare cases, cage movement can cause severe damage and paralysis;
- Damage to the trachea (windpipe) or oesophagus (food pipe). This is reported in less than 1% of cases (fewer than 1 in 100 people);
- Possible complications associated with taking out bone graft include graft site pain and damage to a sensory nerve that supplies sensation to the front of the thigh (the lateral femoral cutaneous nerve);
- Also, the small nerve that supplies vocal cords sometimes does not function after surgery because of retraction during the procedure. This could cause temporary or rarely some permanent hoarseness of the voice. Retraction of the oesophagus can produce temporary difficulty with swallowing;
- In the long term, or in years to come, pain can develop from problems at the other disc levels in the neck; and
- There are also very rare but serious complications that in extreme circumstances might include damage to the spinal cord and paralysis (the loss of use of the legs, loss of sensation

and loss of control of the bladder and bowel). This can occur through bleeding into the spinal canal after surgery (a haematoma). If an event of this nature was to occur, every effort would be made to reverse the situation by returning to theatre to wash out the haematoma. Sometimes, however, paralysis can occur as a result of damage or reduction of the blood supply of the nerves or spinal cord and this is unfortunately not reversible; and a stroke, heart attack or other medical or anaesthetic problems, including death, which is reported as happening in 1 out of 250,000 cases under general anaesthetic.

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Factors which may affect spinal fusion and your recovery

There are a number of factors that can negatively impact on a solid fusion following surgery, including:

- smoking;
- diabetes or chronic illness;
- obesity;
- malnutrition;
- osteoporosis;
- post-surgery activities (see note of recreational activities); and
- long-term (chronic) steroid use.

Of all these factors, the one that can compromise fusion rate the most is smoking. Nicotine has been shown to be a bone toxin and it inhibits the ability of the bone-growing cells in the body (osteoblasts) to grow bone. Patients should make a concerted effort to allow their body the best change for their bone to heal by not smoking.

What to expect after surgery

Immediately after the operation you will be taken on your bed to the recovery ward, where nurses will regularly monitor your blood pressure and pulse. Oxygen will be given to you to via a facemask for a period of time, to help you to recover from the anaesthetic. You will have an intravenous drip for about 24 hours or until you are able to drink again after the surgery.

A small drain (tube) will come out of your neck wound, this prevents any excess blood or fluid from collecting there. This will be removed when the drainage has stopped, usually 24 hours later. You will have some discomfort or pain in your neck and also at the site where the bone graft was taken. The nursing and medical staff will help you to control this with appropriate medication. A sore throat is also common for a few days after surgery.

On the first day after your operation, your physiotherapist will help you out of bed. They will also show you the correct way to move safely.

Going home

You will normally be allowed to leave hospital when you and your physiotherapist are happy with your mobility. This tends to be 1 – 2 days after your operation.

Please arrange for a friend or relative to collect you, as driving yourself or taking public transport is not advised in the early stages of recovery.

Wound care

Your wound will most likely be closed with an absorbable suture. You must not get the dressing wet so care is required when washing. Please do not remove your wound dressing before two weeks. If it accidentally starts to come off you must present to your GP's nurse to have the dressing replaced.

Please contact your GP if you have any of the following:

- redness around the wound;
- wound leakage; or
- high body temperature.

Driving

When to resume driving after surgery does depend on the procedure carried out. You must feel safe and confident to drive and be able to turn your head easily and have full power and sensation in your arms and legs. If in doubt please discuss driving with your surgeon before leaving hospital.

Recreational activities

Walking is the best activity to do following your surgery. Any other sports should be avoided until you can discuss them with your consultant in your follow-up appointment.

Work

You will need to be off work for six weeks. The rate at which you return will depend on how physical your job is. You will leave hospital with either an ACC certificate or an off work certificate detailing a graduated return to work.

Lifting

Heavy lifting and carrying should be avoided for the first few weeks.

Follow-up

You will leave with an appointment to attend clinic six weeks after your operation. If you have any queries before your follow-up date to please contact Dr Ratahi's PA.