For Appointments :
044 4000 6000, +91 87544 56711
orthoneurospine@kauveryhospital.com

These instructions are provided by
Dr G Balamurali
for his patients. It will vary for each surgeon.

Dr G Balamurali,
MBBS, MRCS (Ed), MD (UK), FRCS (Surgical Neurology)
Senior Consultant Spine and Neurosurgeon
Kauvery Hospital, Chennai

ADVICE FOR PATIENTS UNDERGOING

MINIMALLY INVASIVE CERVICAL MICRODISCECTOMY AND LAMINECTOMY SURGERY

Dr. G. Balamurali

DISCLAIMER

This information pack aims to provide you with the answers to commonly asked questions about spine surgery.

This leaflet provides basic information and is a general guide. Your care may differ from the information here. This will depend on your specific case which will be guided by your surgeon.

In all cases, a doctor will explain the type of operation and procedure to you prior to surgery and will answer any questions you may have. You will then have to sign a consent form to say that you understand the procedure and any risks that may be involved. Following your surgery, doctors, nurses and physiotherapists will be available to answer any new questions you may have.

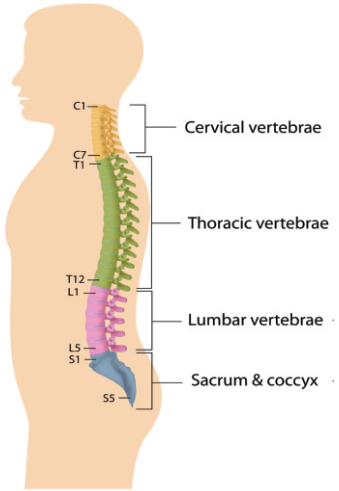
Compiled by,

Dr. G. Balamurali,

MBBS, MRCS (Ed), MD (UK), FRCS (Surgical Neurology)
Senior Consultant Spine & Neurosurgeon
Kauvery Spine Centre
Centre of Excellence for Minimally Invasive Spine Surgery
Chennai, India

KNOW YOUR SPINE

Spine is made up of vertebrae, discs, spinal cord & nerves, ligaments& muscles.



1. VERTEBRAE

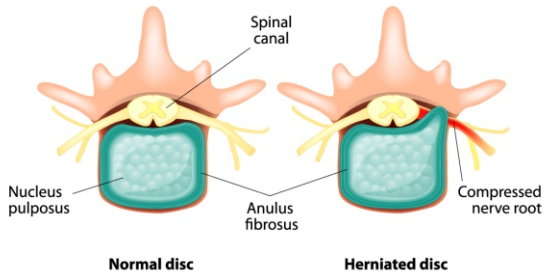
The spine is composed of 33 bones called vertebrae, which provide support for the body. These bones forming the vertebral column protects the spinal cord and nerves

2. INTERVERTEBRAL DISC

Between each vertebra, there is an intervertebral disc. These discs are "shock absorbers" for the pressure put upon our spine. The intervertebral disc is made up of two different parts:

- Annulus - an outer ring of fibers
- Nucleus - the center

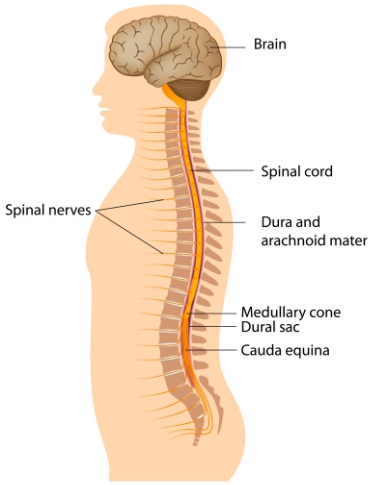
TOP VIEWS OF VERTEBRAE

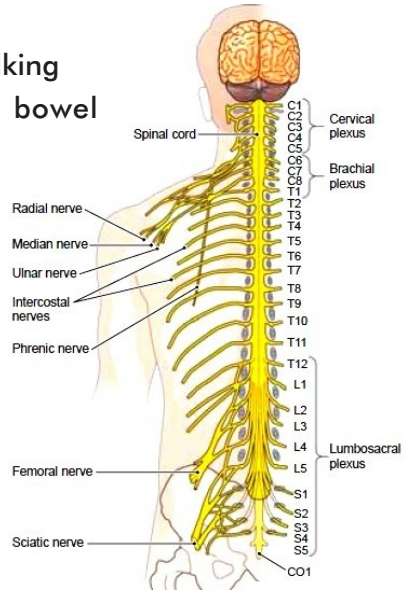


3. SPINAL CORD & NERVES

The spinal cord extends from brain and runs through cervical and thoracic spine and ends at the upper part of lumbar spine. It has three main functions through nerves:

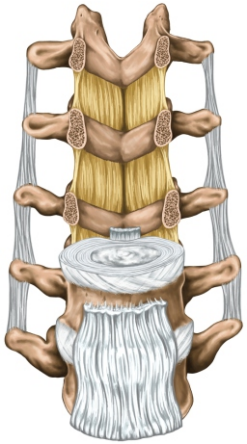
1. Power and movement of the extremities
2. Perceive sensation
3. Co-ordinates movements and walking
4. Controls urinary bladder and bowel movements



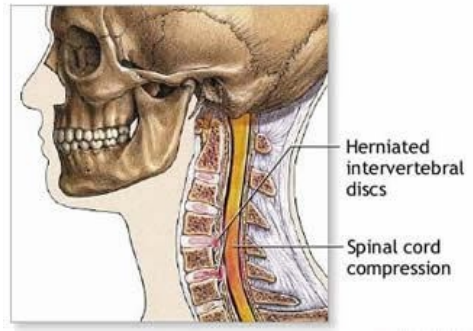


4. LIGAMENTS & MUSCLES

The system of ligaments in the vertebral column, combined with the tendons and muscles, provides a natural brace that aids in joint stability during rest and movement and help prevent injury from hyperextension and hyper flexion (excessive movements).



REASONS FOR CERVICAL SPINAL SURGERY

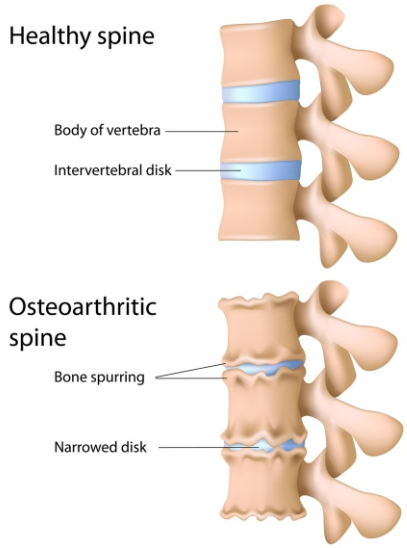


1. DISC HERNIATION

Disc herniation occurs when the outer lining of the disc tears and its centre leaks out. This presses the spinal nerve against the surface of the vertebra. This can happen as a result of 'wear and tear' or due to trauma

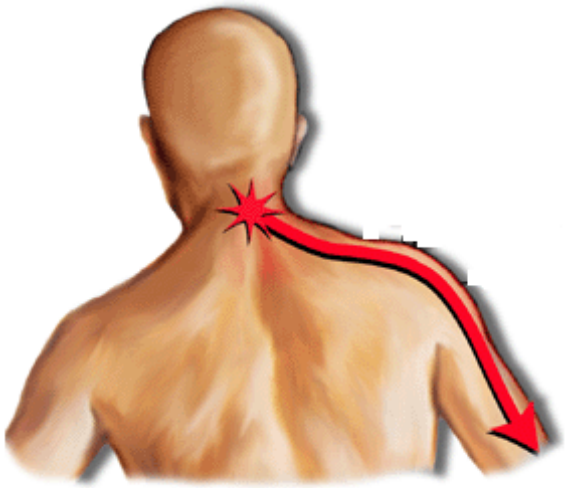
4. BONE SPUR

Chronic degeneration causes excess bone growth forming spurs. This compress the nerve roots going to the arm, causing pain.



WHAT DOES PROLAPSED DISC OR BONE SPURS CAUSE?

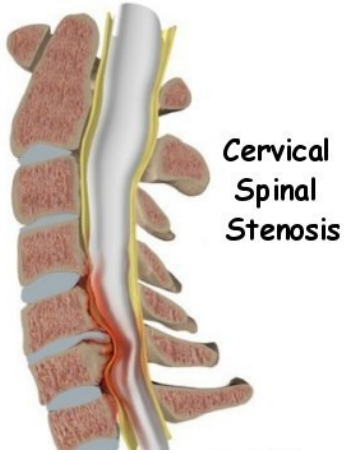
Shooting pain in the upper limbs as shown in the picture. You may also get pain in shoulder, neck, back and headache. The symptoms are mainly due to pressure on the nerve roots, There may be weakness, numbness over arm or hand and with some tingling sensation going down the fingers.



pain radiating to arm

2. CERVICAL CANAL STENOSIS

Degenerative changes in joints, ligaments and disc can lead to narrowing of canal, thus exerting pressure on the spinal cord. This will affect the upper and lower part of the body.



Cervical Spinal Stenosis

3. CERVICAL MYELOPATHY

In this condition due to wear and tear there may be damage to the spinal cord from m disc bulges at several levels along with ligament and bony compression. All or most of the symptoms mentioned above will be present. It needs immediate attention.

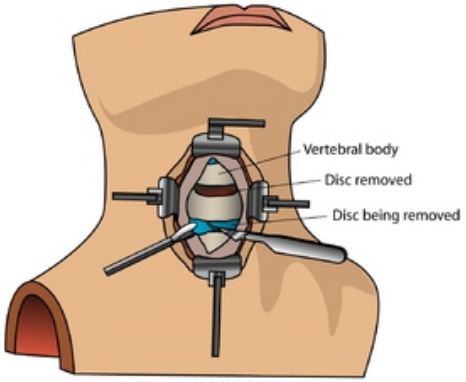
SYMPTOMS

The symptoms of cervical spinal stenosis may include the following:

- Neck pain; not always severe.
- Pain, weakness, or numbness in the shoulders, arms, and legs.
- Hand clumsiness.
- Gait and balance disturbances.
- Burning sensations, tingling, and pins and needles in the involved extremity, such as the arm or leg.
- In severe cases, bladder and bowel problems.
- Although rare, severe cases can also cause significant loss of function or even paralysis.

WHAT DOES SURGERY INVOLVE

1. Minimally Invasive Anterior cervical discectomy and fusion:



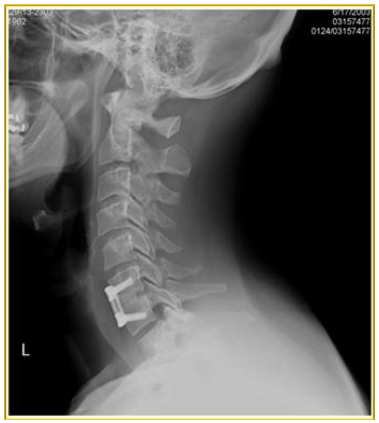
Anterior cervical discectomy

A. DISCECTOMY

A discectomy involves the removal of the part of the disc that is pressing on the nerve.

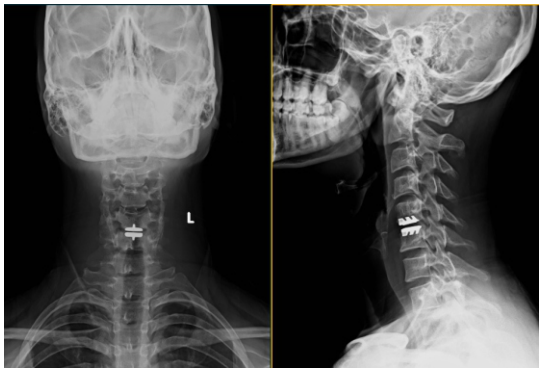
B. FUSION WITH GRAFT AND/ OR PLATING

Once the nerve root is decompressed a spacer or bone graft is inserted to stabilize the corresponding vertebrae and a screw and plate may be inserted as shown in this picture. Bone graft may be taken from iliac crest through a small incision on the hip.



2. Minimally Invasive Artificial Disc Replacement:

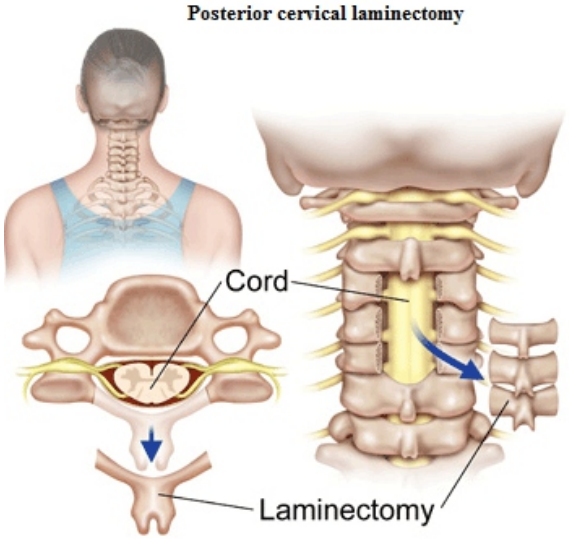
- An artificial cervical disc is a device inserted between two cervical vertebrae after an intervertebral disc has been surgically removed during the decompression of spinal cord or a nerve root. It is an alternative to the use of bone grafts, plates and screws.



ADVANTAGES OF DISC REPLACEMENT

- Maintains normal neck motion
- Reduces degeneration of adjacent disk problem in the future
- Eliminates the need for a bone graft
- Allows for early postoperative neck motion
- Allows for faster return to normal activity

3. Posterior Cervical Laminectomy



A. LAMINECTOMY

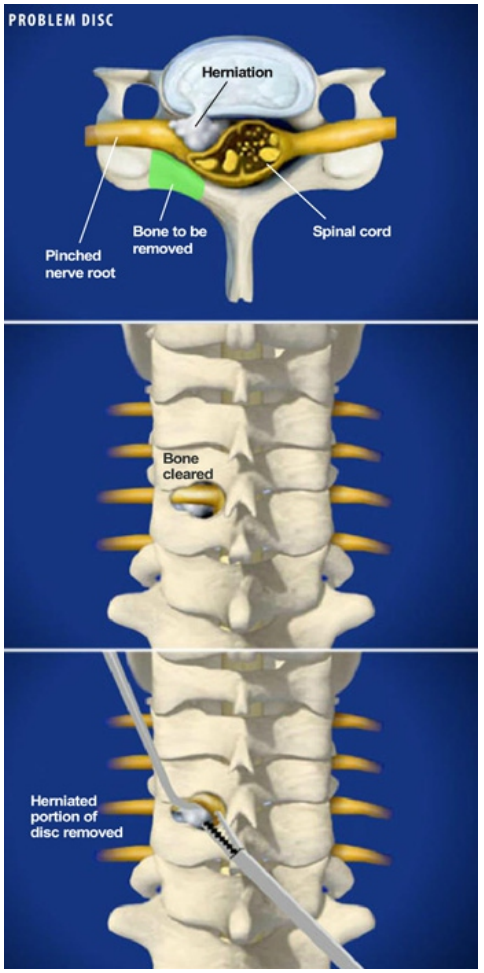
'Lamina' is a part of the vertebrae that covers the posterior part of spinal cord; 'ectomy' means to remove. Laminectomy is done for spinal cord compression.

The surgery involves a cut on the skin and removal of the lamina. Along with the lamina other structures like the ligament and part of facet joints will be removed to relieve pressure on the spinal cord and nerves. This can also be performed as a key hole surgery depending upon the number of levels that is needed to be decompressed.

B. LAMINECTOMY AND FUSION

Following the laminectomy under x ray or navigation guidance, rods and screws are placed in the cervical vertebrae for stabilizing the neck

4. Minimally Invasive Posterior Cervical Foraminotomy



Minimally invasive posterior cervical foraminotomy is done by making a small penetration to relieve the pressure of the nerve root from disc or bony spur. It is done through a 2 cm incision. This procedure can be done as a day care procedure also.

HAVING YOUR SURGERY

Pre-operative assessment

This is done to ensure that it is safe to undergo surgery:

- Blood tests will be performed.
- If any X – rays and a heart trace (ECG) are required these will also be done.
- Anaesthetist will examine you, discuss about medical history and evaluate if you are fit to undergo surgery.
- You should bring medications that you are taking for other medical illness like diabetes, hypertension.

We may need to postpone your surgery if we have any concerns that arise during your pre operative assessment.

Admission to hospital

Your surgery will be either the day following your admission or, in some cases you will be admitted the morning of your surgery fasting. If this is going to happen it will be discussed with you and instructions will be given to you in advance. Most patients will be admitted the day before surgery.

On arrival to hospital you are required to meet the admission co-ordinator who will guide you with the process and allocate the room of your choice if it is available.

It is advisable not to bring any valuables with you into hospital, as the hospital does not accept any responsibility for their safety.

You can take food on the evening before your surgery and in some cases 6am on the morning of your surgery. This varies depending on what time you are due to go to theatre. The ward staff will be able to clarify this for you.

What to expect on the day of surgery?

Prior to your operation you will:

- Restricted to eat or drink for 6 hours.
- Given a pre-medication injection or tablet which may make you drowsy.
- Given a hospital gown to wear.
- Taken to the operation theatre in a trolley bed and kept in a pre-operative waiting room.
- Given a general anaesthetic before the surgery.

What to expect after surgery?

- You will wake up in recovery with an oxygen mask on your face and an intravenous drip providing fluids
- For some patients a catheter will automatically drain urine from the bladder;
- You may have a drain tube attached at the wound site to remove excess blood.
- You will have a dressing over your wound.
- You will be advised to stay in bed on the day of surgery until the doctor advises the ward staff that you can get up.
- You may feel thirsty and/or nauseous.
- You may experience pain and/or altered sensation. This is due to nerve root irritation and swelling around the wound site. It will gradually subside. We will give you pain killers to help with the pain.
- You will be taught how to roll in bed correctly, in order to prevent strain on your wound site and maintain good body alignment.
- Your physiotherapist will assess you the day after your operation and encourage you to sit, stand, walk and some gentle exercise . You will probably be able to go home 2-5days after your operation.

Possible complications of surgery:

Success rate is about 90%.Complications are rare and are usually minor & temporary. However all possible complications are listed below:

1. Risk from anaesthesia
2. Sore throat and difficulty in swallowing for anterior (front) cervical problems due to manipulation of throat structure during surgery (which will settle down in few days)
3. Hoarse voice which will improve over time in anterior (front) cervical surgery.
4. Very small risk of persistent or increased pain
5. Wound site infection.
6. Blood clots in the legs.
7. Spinal fluid leak
8. Injury to the nerve root
9. Bleeding or haematoma.
10. Very small risk of paralysis

Do ask if more information is needed. The chances of you developing any of these risks are extremely low and will be discussed in detail before you consent for the surgery. Other serious and very rare complication will be explained in person by your surgeon.

DISCHARGE FROM HOSPITAL

Once the consultant is satisfied with your recovery and when your wound is healing you will be allowed to go home which is usually between 2-5 days after your surgery. Length of stay will vary for every individual patient based on circumstances.

Before discharge the doctor will:

1. Check your wound, muscle power and limb movements
2. If you have any stitches, it will be taken off at 10 - 14 days after surgery or if it is a dissolving material there is no need to remove
3. You will be prescribed medication that is to be taken after your surgery.

You will need to rest and take things easy at home for the first few weeks; progressing your level of activity as advised by your doctor and physiotherapist.

If you have stitches, you need to avoid getting the wound wet to prevent infection but you may shower as long as the wound remains dry.

You will be given a detailed discharge summary with contact details of a doctor if you have any problems after discharge.

PHYSIOTHERAPY WHILST IN HOSPITAL

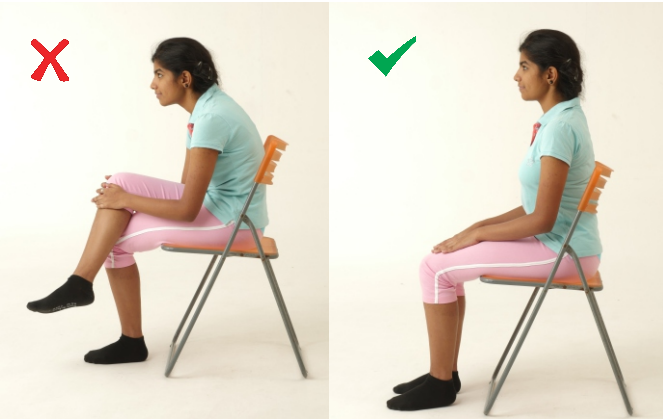
Following your surgery, it is common to experience neck pain around the level of the operation. Physiotherapy in the early stages aims to assist you in gently moving your spine, to help prevent additional pain and stiffness occurring as scar tissue forms.

Your physiotherapist will aim to improve your awareness of posture whilst moving for example getting in and out of bed. This should help prevent further injury and pain.

The gentle exercises given by your physiotherapist should be started 6-8 weeks following your operation, whilst your wounds and muscles are healing.

PROPER SITTING POSTURE

Your doctors or physiotherapist will advise you on when you can sit out of bed. It is recommended that you sit for only short period and increase the time over the first 6 weeks after your surgery.



BENDING AND LIFTING

Avoid lifting any weights for the first 6 weeks following surgery. When you try lifting, it's important to use the correct technique. This is:

- Keep your back straight
- Keep your feet wide apart
- Bend your knees, not your back. Keep any load close to your body, at waist height

EXERCISES

Physiotherapist will go through the following exercises with you to ensure you are doing them correctly, when you come for follow –up visit to the doctor 4-6weeks following your surgery.

Rotation to Right

Rotation to left

Chin out

Chin tuck

Extension

Flexion

Neck Isometric exercises

Upper trapezius stretch

It is advised that these exercises are carried out three times a day. These exercises may initially cause some discomfort, aching stiffness or twinges of pain.

If you experience pain, try doing the exercises more gently, however, if the exercises cause severe increases in pain stop the exercises and consult your physiotherapist.

Follow up physiotherapy will aim to strengthen your neck, improve your stability, muscle flexibility, balance and endurance to help reduce the likelihood of re-injury.

GENERAL ADVICE

- When travelling or returning home in the car after surgery, recline the front passenger seat and wear seat belt. Try to avoid sitting too long, if possible stop and have a walk around every 30 to 40 minutes. Do not lie down in back seat.
- Do not drive until you feel that you can comfortably turn your neck and drive safely.
- Avoid head forward and slumped posture.
- It is safe to continue with all household activities such as cooking, and cleaning
- You may continue to have some neck and arm pain or changes in sensation especially for the first 6 weeks, do not allow this to prevent you from progressing to a normal lifestyle. Remember hurt does not mean harm. If your pain is significantly worse than the original pain and you are concerned, do consult doctor.
- If you suddenly develop any of the following symptoms you should see a doctor straight away

    a. Numbness, pins and needles worse than before
    b. Weakness in both arms.
    c. Instability in walking
    d. Not able to pass urine or toilet

Neck pain or surgery may restrict your neck movements. This leads to your neck becoming stiff. It's important that you maintain a proper posture when you start using your computer, watching TV, travelling. Regarding the use of collar, doctor or physiotherapists will advice you.

Normal activity & movement will help to make your neck feel better.

FOLLOW UP VISIT

1. Mainly aims at evaluating your improvement in pain relief, healing and muscle strength.

2. After discharge you will be given an appointment to see to check your wound and progress of symptoms following surgery.

3. This will be anytime between 4-6 weeks following the date of discharge, unless needed earlier.

4. Video consultation can also be done at any point to answer your queries on appointment.

NOTES