

Lumbar Foraminotomy / Decompression

Mesfin A. Lemma, MD

Minimally Invasive Spine Surgery, Scoliosis Surgery, Baltimore, MD

Overview

- The neuroforamen are passageways that are naturally formed on either side (left, right) between an upper and lower vertebra (see figure). Spinal nerves exit the spine through these neuroforaminal “tunnels”
- When the size of a neuroforamen is reduced, there is less room for the spinal nerves, which may result in nerve compression.
- **Bone spurs (osteophytes), disc material, synovial facet cysts, and abnormally enlarged facet joints or ligamentum flavum**, are all common elements that result in foraminal narrowing and nerve compression.
- The pain, numbness or weakness that is associated with this is known as lumbar radiculopathy, or ‘sciatica’.
- Lumbar decompression, or foraminotomy, is a minimally invasive outpatient procedure which seeks to widen the available room for the nerve and relieve the compression.



Who performs the procedure?

Lumbar foraminotomy is best performed by a **fellowship-trained spine surgeon**. Ask your surgeon about their training, especially if your case is complex or you have had previous spinal surgery.

What to expect before the procedure:

- In the weeks prior to your surgery, **pre-operative testing** will be conducted either by your primary care physician or the pre-admission testing department of the hospital.
- One week prior to surgery, you will need to **stop taking aspirin, NSAIDs** or other medications that thin your blood and may increase bleeding.
- You will be given instructions and supplies to **cleanse** the back of your spinal area the day prior to your procedure.
- You are to have **nothing to eat or drink after midnight** on the night before.

What to expect during the procedure:

- Just before the procedure starts you will have an intravenous (IV) line started so you can receive fluids and medications to make you relaxed and sleepy. The procedure is performed under

general anesthesia (you are asleep). Medications will be given through the IV to put you to sleep and a tube is inserted in your throat to supplement your breathing. **IV antibiotics** are administered and monitors are placed to check your heart, blood pressure, and oxygen level. A Foley catheter in the bladder is typically not required.

- The actual procedure typically lasts **about 1 hour**, depending on the specifics of the case. This is what to expect once the procedure begins:

1. Surgical approach

- You are positioned face down (prone) on a specialized, cushioned operating table.
- The back area is cleansed with a special solution to kill the germs on the skin.
- A 1-2 inch skin incision is made in the midline directly overlying the affected nerve root.
- Minimally invasive techniques allow access to the spine with a minimal amount of muscle and soft tissue disruption.

2. Decompression

- Microsurgical instruments are then used to remove the disc fragments, facet cysts, overgrown ligaments and/or bone spurs from the neural foramen. This increases the space around the neural foramen and relieves the compression of the spinal nerves.

3. Closure

- Blood loss is typically no more than a few drops. The skin is closed with absorbable sutures (stitches).
- A small dressing is applied over the incision and you are then taken to the recovery area.

What to expect after the procedure:

- Lumbar foraminotomy is typically performed on an **outpatient** or overnight stay basis.
- In the recovery area, you will be observed until you recover from the anesthesia, then transferred to the floor.
- You will be encouraged to get out of bed and move around as soon as you are able to.
- Pain pills on an empty stomach may result in nausea, so initially IV pain medications are self-administered through a PCA, or **patient-controlled analgesia**.
- IV fluids will be continued until you can drink fluids well by mouth.
- Once you are able to drink normally, your diet will be advanced to your **normal diet** and you will be switched to pain pills.
- **Physical therapy and occupational therapy** will see you prior to your discharge from the hospital to make sure you are comfortable walking, escalating stairs and performing other activities of daily living.
- A back brace is typically not required.

Recovery and rehabilitation at home:

- Keep in mind, everybody is different, and therefore the amount of time it takes to return to normal activities is different for each individual.
- Patients are encouraged to **walk as much as possible** but to **avoid lifting or bending** early on. Discomfort should decrease a little each day, like a dimmer switch as opposed to an on-off switch.
- Most patients are able to return to most activities by **2 - 4 weeks**, although complete recovery may take between 6 and 8 weeks. You will **not be able to drive a car for about 2 weeks**, depending on the specifics of your case.
- Signs of infection such as **swelling, redness, draining, or fever > 101.5°F** should be brought to your surgeon's attention immediately.
- It is important to keep your incision **dry** for a period of 2 weeks to give your incision time to seal. You may sponge bath during this period.
- You will be seen in the office at **2 weeks**, then at regular intervals thereafter.

What are the expected outcomes?

90-95% of patients typically feel relief from the leg pain almost immediately following lumbar foraminotomy. Surgery is less reliable, however, at relieving numbness or weakness in the leg, as this may indicate presence of nerve damage.

What are the possible risks?

In skilled hands, lumbar foraminotomy is a very safe procedure. However, no surgery is without possible risks. These risks can be minimized by choosing an experienced surgeon to perform your procedure, and by adhering to your surgeon's instructions before and after your procedure. General complications of any surgery include bleeding, infection (1%), blood clots, and reactions to anesthesia. Specific complications related to lumbar foraminotomy may include but are not limited to:

- **Persistent nerve pain.** The primary cause for persistent nerve pain following spinal surgery is an inadequate decompression. This complication can be avoided by seeking out an experienced, fellowship-trained spine surgeon.

It is important to note that another common cause of persistent symptoms is nerve damage from the compression itself, not the surgery. Compression may permanently damage the spinal nerves rendering it unresponsive to surgery. **Like heavy furniture on the carpet, the compressed nerves do not spring back.**

- **Nerve root injury (1 in 1,000) or bowel/bladder incontinence (1 in 10,000).** Paralysis would be extremely unusual since the spinal cord stops at about the T12 or L1 level, and surgery is usually done well below this level.
- **Cerebrospinal fluid leak (1% to 3%).** If the dural sac is breached, a cerebrospinal fluid leak may be encountered but does not change the outcome of the surgery. Generally a patient needs to lie down for about 24 - 48 hours to allow the leak to seal.