

A Patient / Family Informed Consent Guide to

Lumbar Herniated Disc

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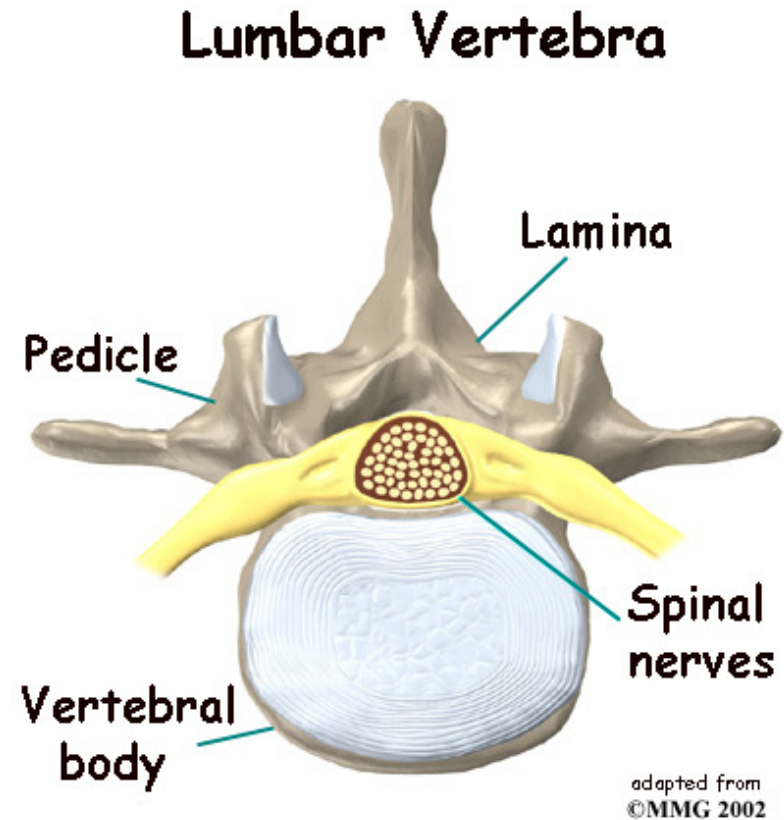
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Lumbar Spine

- Each lumbar vertebra is formed by a round block of bone, called a *vertebral body*, and a *bony arch* attached to the back of each vertebral body
- The bony arch has two parts (a) two *pedicle bones* and two *lamina bones*
- When the vertebrae are stacked on top of each other, they form a hollow tube that surrounds the spinal cord and nerves. The laminae provide a protective roof over these
- The intervertebral disc sits between two adjacent vertebrae and is a cushion enclosed by thick a capsule



Lumbar Disc Degeneration

- Due to natural loss of elasticity and / or injury over the years, the disc degenerates. The degenerated disc may herniate backwards into the spinal canal and press on a spinal nerve root
- Weak spot is directly under the nerve root
- 90% occurs in either the L4-5 or L5-S1 region
- Compression of the spinal nerves results in severe radiating pain or numbness or weakness of muscles
- Severe compression can lead to permanent nerve damage

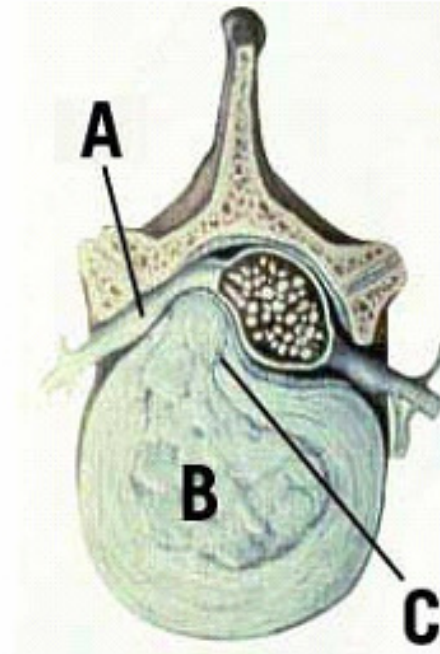


Fig 1: Lumbar Disc Herniation

A: Exiting nerve root.
B: Disc.
C: Torn outer annulus.

Lumbar Disc Herniation

- **L5 nerve impingement** from a herniated disc can cause weakness in extension of the big toe and potentially in the ankle (foot drop). Numbness and pain can be felt on top of the foot, and the pain may also radiate into the rear
- **S1 nerve impingement** from a herniated disc may cause loss of the ankle reflex and/or weakness in ankle push off (e.g. patients cannot do toe rises). Numbness and pain can radiate down to the sole or outside of the foot



Fig 2: MRI of Lumbar Disc Herniation (sagittal view)

A: Herniated disc at L5-S1.

Conservative Treatment

- In most cases, if a patient's low back and/or leg pain is going to resolve after a lumbar herniated disc it will do so within about six weeks. While waiting to see if the disc will heal on its own, several conservative treatment options can help reduce the back pain, leg pain and discomfort caused by the herniated disc
- Physical therapy
- Osteopathic/chiropractic manipulations
- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Oral steroids (e.g. prednisone or methylprednisolone)
- An epidural (cortisone) injection



Lumbar Microdiscectomy

- If symptoms persist for more than 6 weeks, lumbar microdiscectomy is an option
- The impingement on the nerve root (compression) can cause substantial leg pain, and while it may take weeks or months for the nerve root to fully heal and any numbness or weakness get better, patients normally feel relief from leg pain almost immediately after a microdiscectomy surgery



Lumbar Microdiscectomy

- A microdiscectomy spine surgery is performed through a small (1 inch to 1 1/2 inch) incision in the midline of the low back
- First, the back muscles (erector spinae) are lifted off the bony arch (lamina) of the spine
- The surgeon is then able to enter the spine by removing a membrane over the nerve roots (ligamentum flavum), and uses either operating glasses (loupes) or an operating microscope to visualize the nerve root
- The nerve root is then gently moved to the side and the disc material is removed from under the nerve root

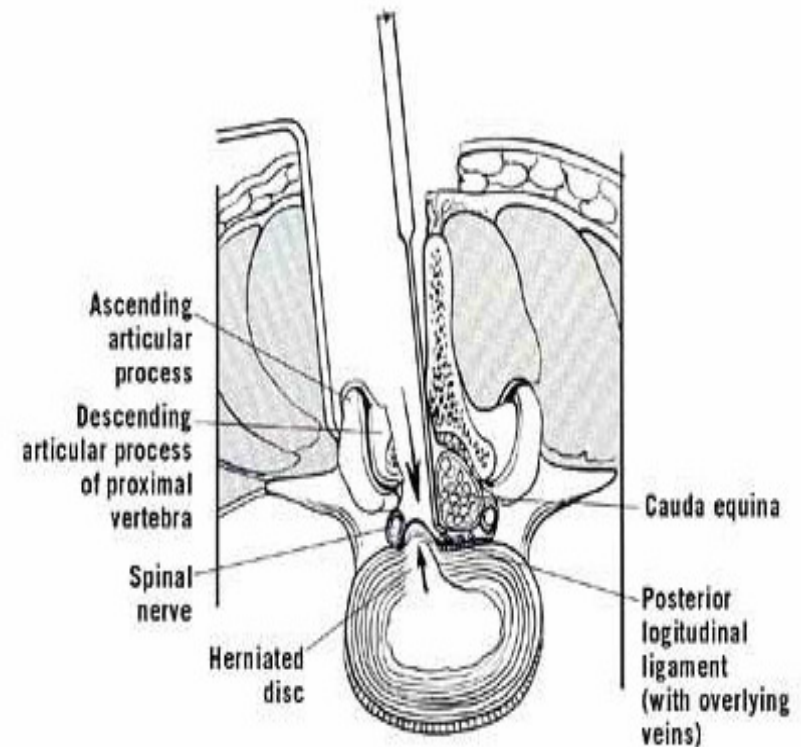


Fig 1: Approach for Microdiscectomy

Complications

- Success rate is around 95%. 5% may develop recurrent disc herniation
- Dural tear causing cerebrospinal fluid leak. This occurs in 1% to 2% of these surgeries and does not change the results of surgery. Post-operatively the patient may be asked to lay recumbent for one to two days to allow the leak to seal
- Nerve root damage
- Bowel/bladder incontinence
- Bleeding
- Infection

