

Spinal Stenosis

Steven Kraljic, MD

Board Certified Neurosurgeon

The Bone and Joint Center, Bismarck ND

Spinal Stenosis

- “Stenosis”
 - A narrowing or constriction of the diameter of a bodily passage, vessel, or channel
 - Foramenal spinal stenosis – radiculopathy
 - Central spinal stenosis – myelopathy (cervical and thoracic), neurogenic claudication or cauda equina syndrome (lumbar)

Spinal Stenosis

Etiology

Traumatic

Degenerative

Idiopathic

Multifactorial

Cervical Radiculopathy

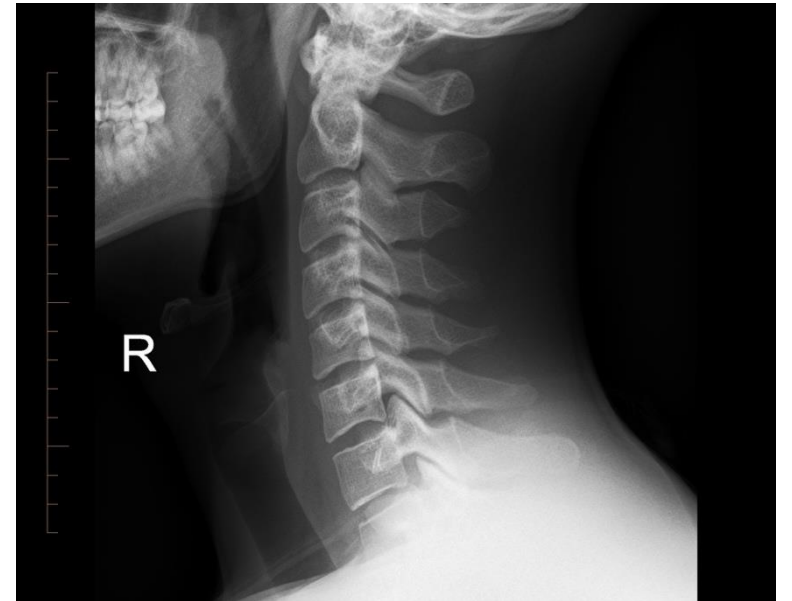
- Presentation
 - Neck pain
 - Interscapular pain
 - Radiating arm pain
 - Dermatomal numbness/tingling
 - Weakness

Cervical Radiculopathy

- Evaluation
 - History
 - Physical exam
 - EMG/NCV
 - Imaging
 - Plain x-ray
 - CT
 - MRI

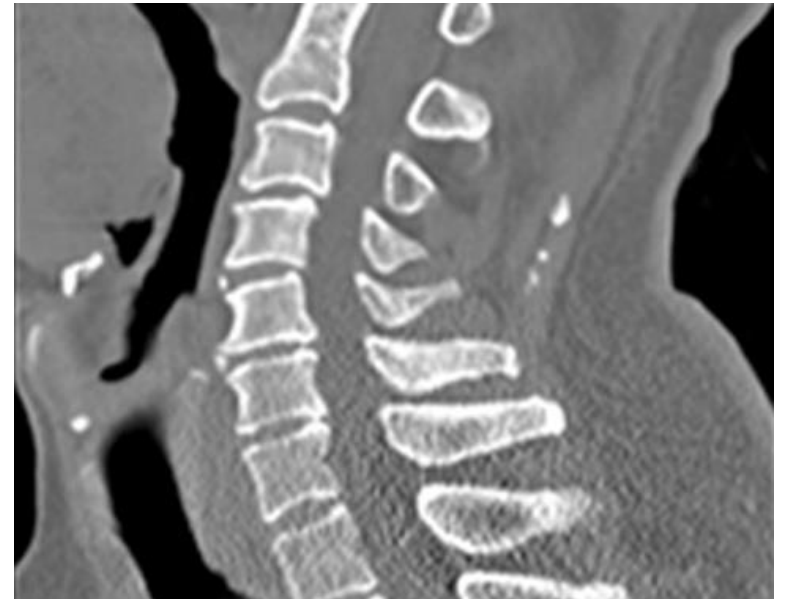
Plain Xray

- Alignment
- Disc space collapse
- Fracture



CT

- Fracture
- Alignment
- Osteophyte formation

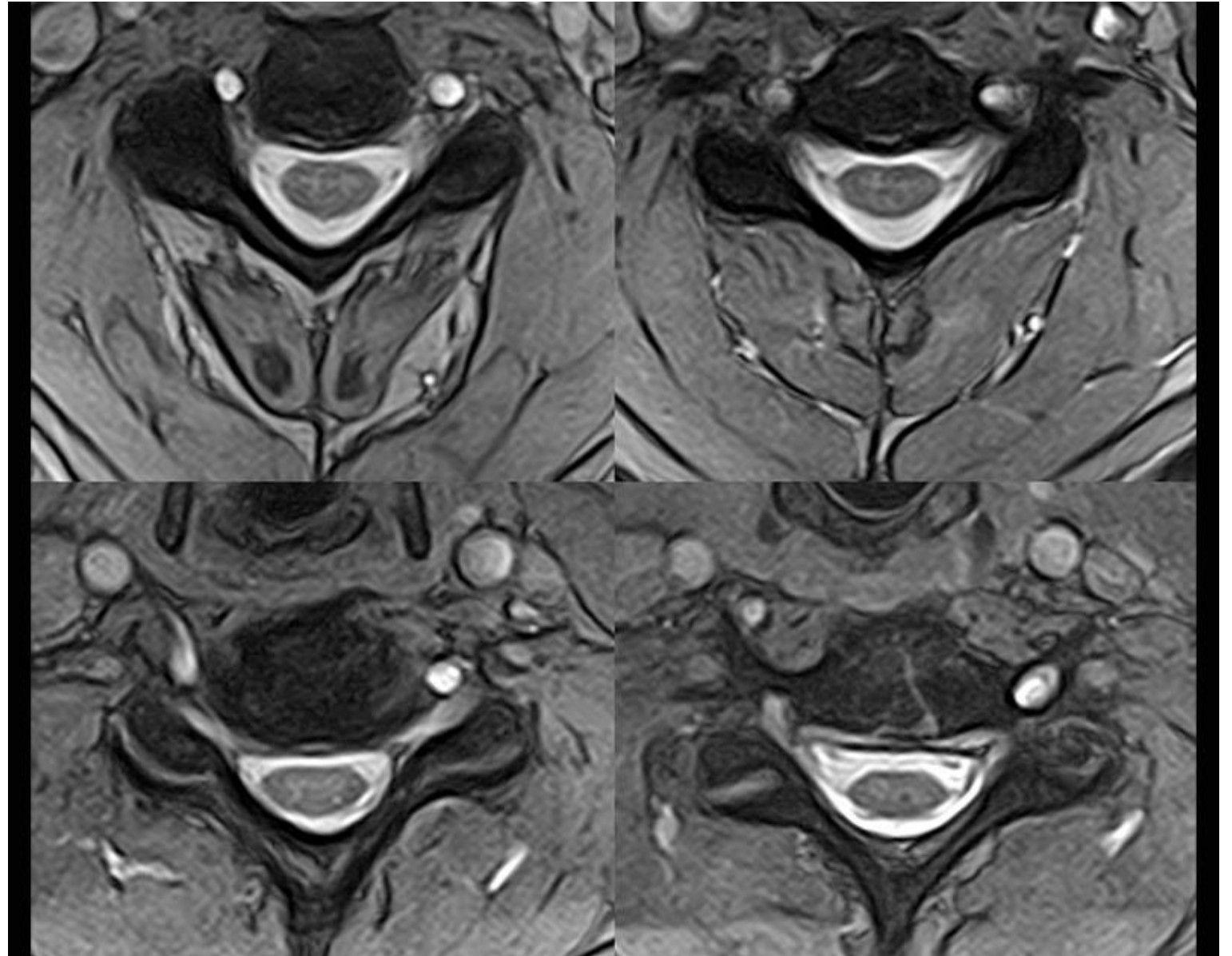


MRI

- Disc herniation
- Radicular/cord compression



MRI



Cervical Radiculopathy

- Non-surgical treatment
 - Time (80% improve in first 6 weeks)
 - Physical therapy
 - Anti-inflammatories
 - Steroid injection

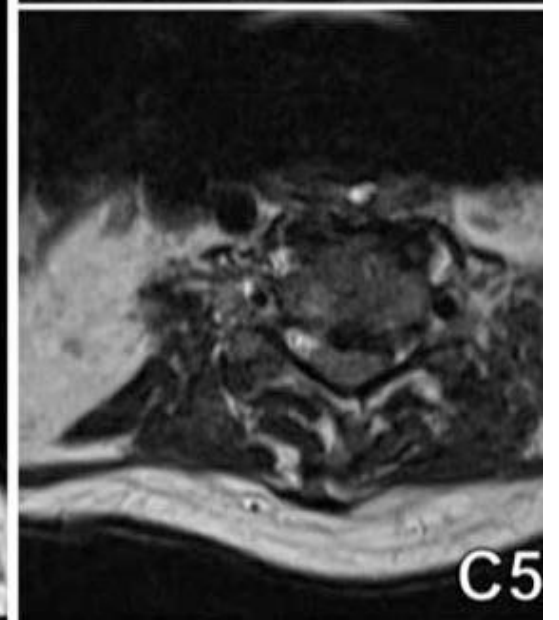
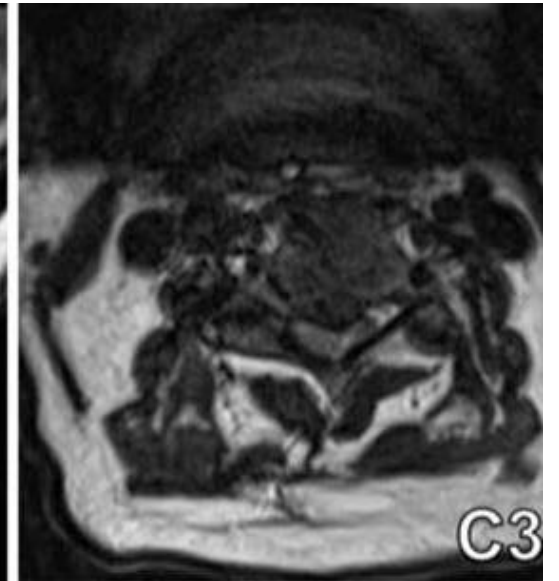
Cervical Radiculopathy

- Surgical treatment
 - Patient has failed conservative care
 - Progressive neurologic deficit
 - Cord compression

Radicular compression



Cord Compression



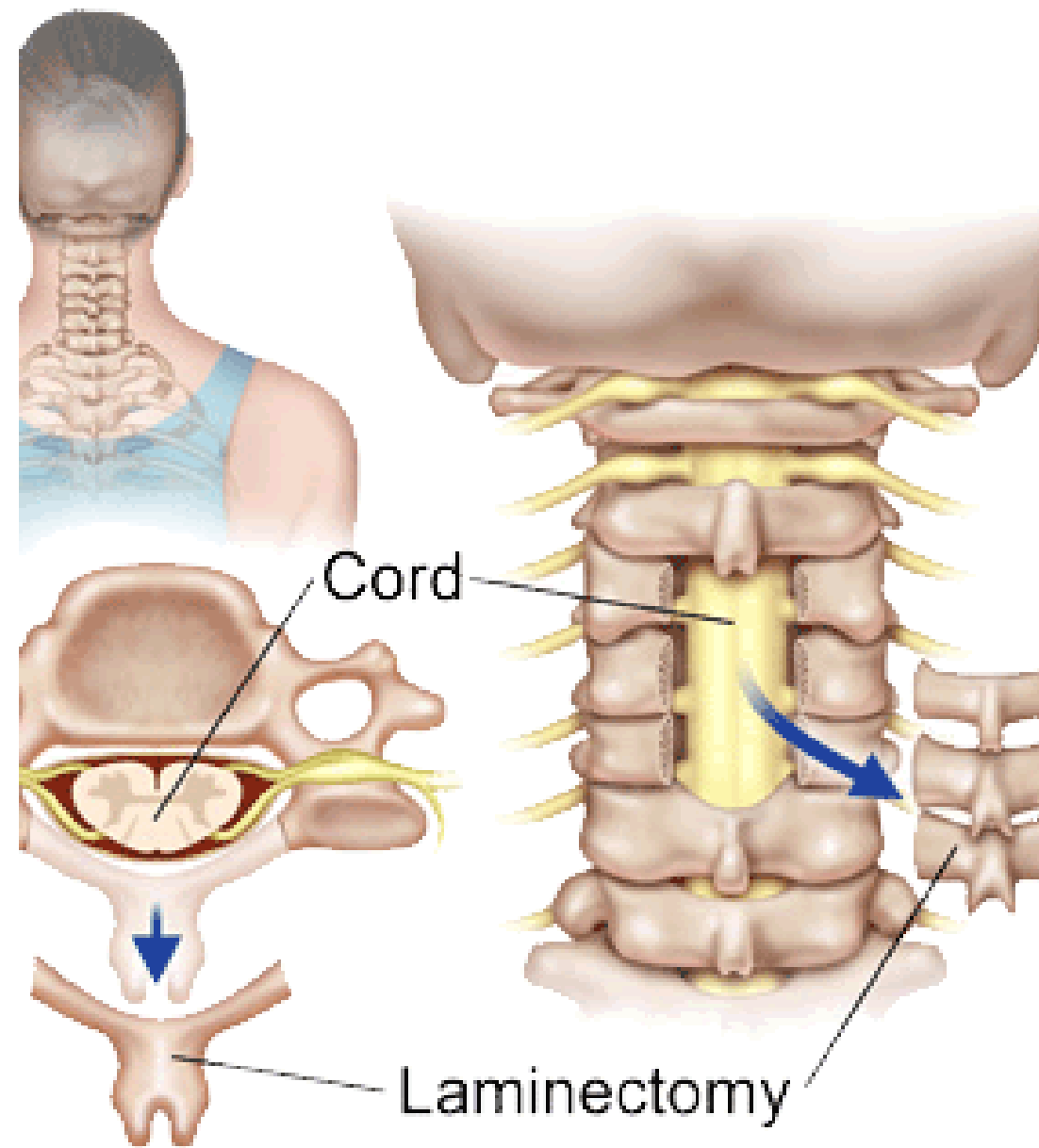
Surgical Procedures

- Foramenotomy
- Laminectomy (with or without fusion)
- Anterior decompression and fusion
- Anterior decompression and disc arthroplasty

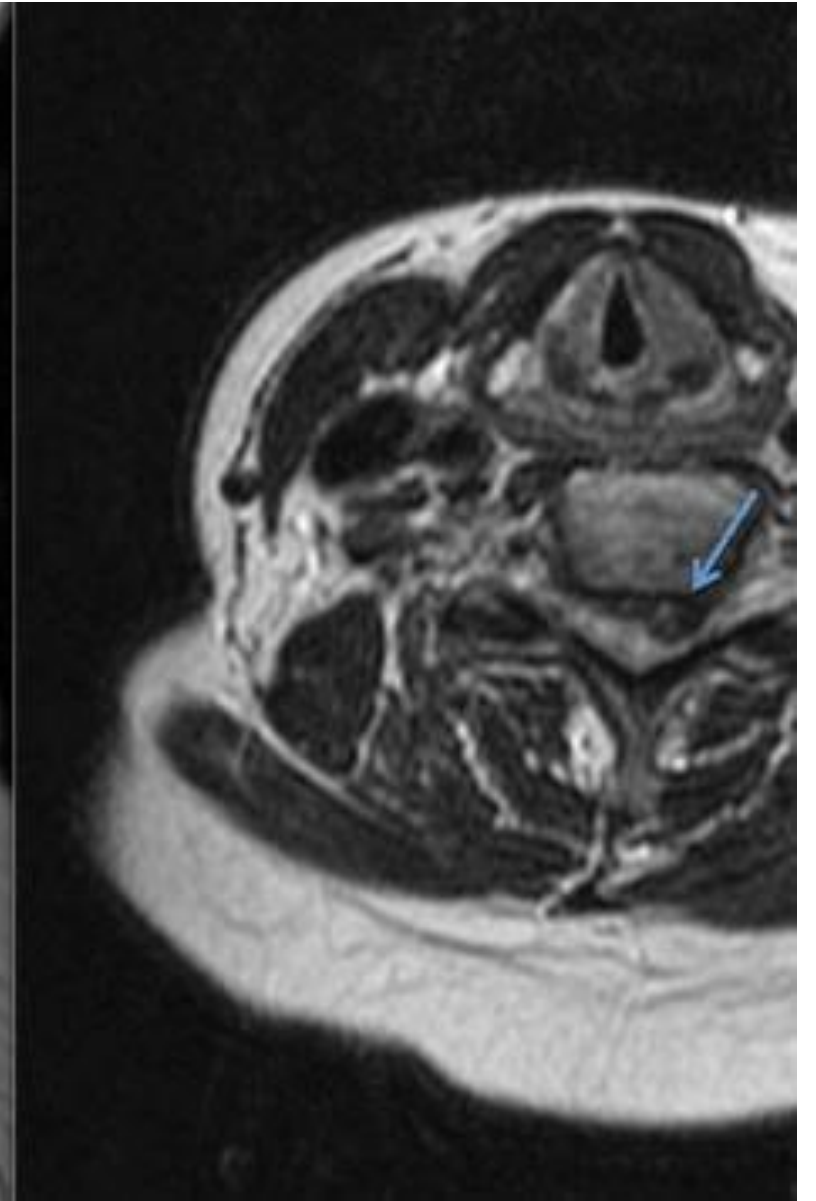
Laminectomy



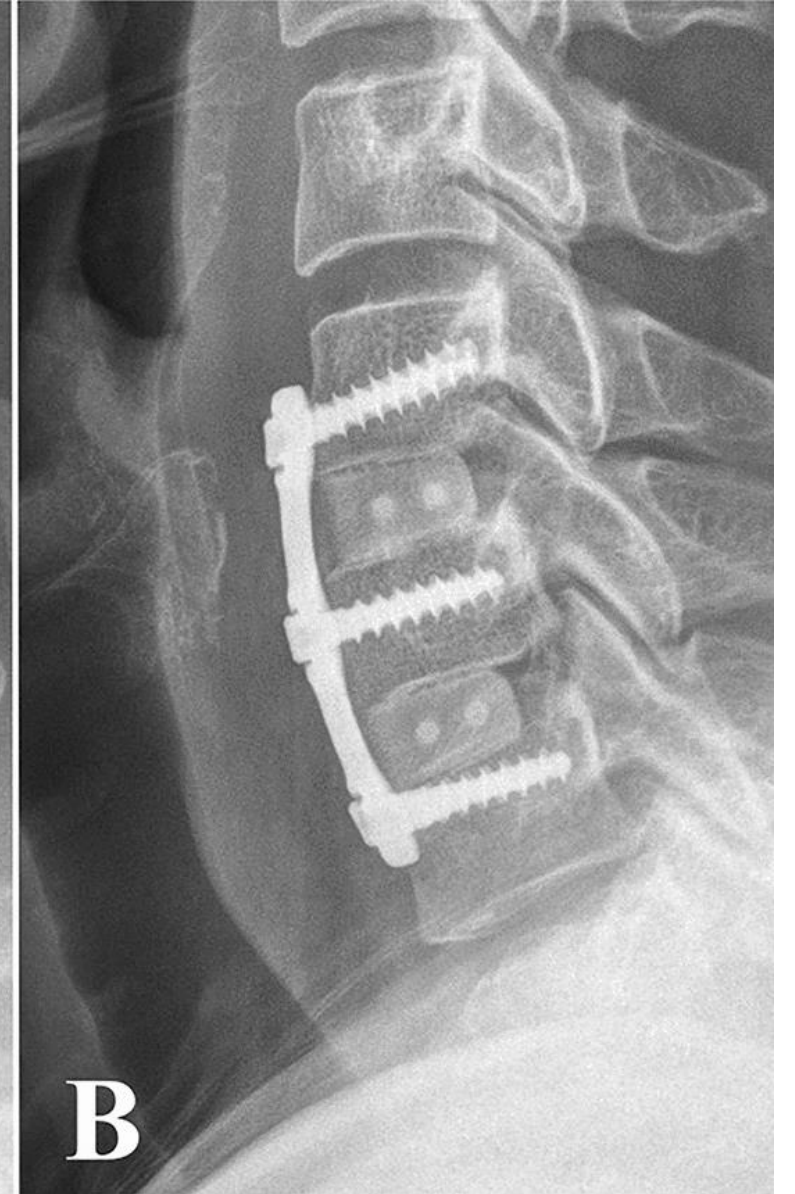
Laminectomy



Anterior
Cervical
Decomp.
Fusion



ACDF



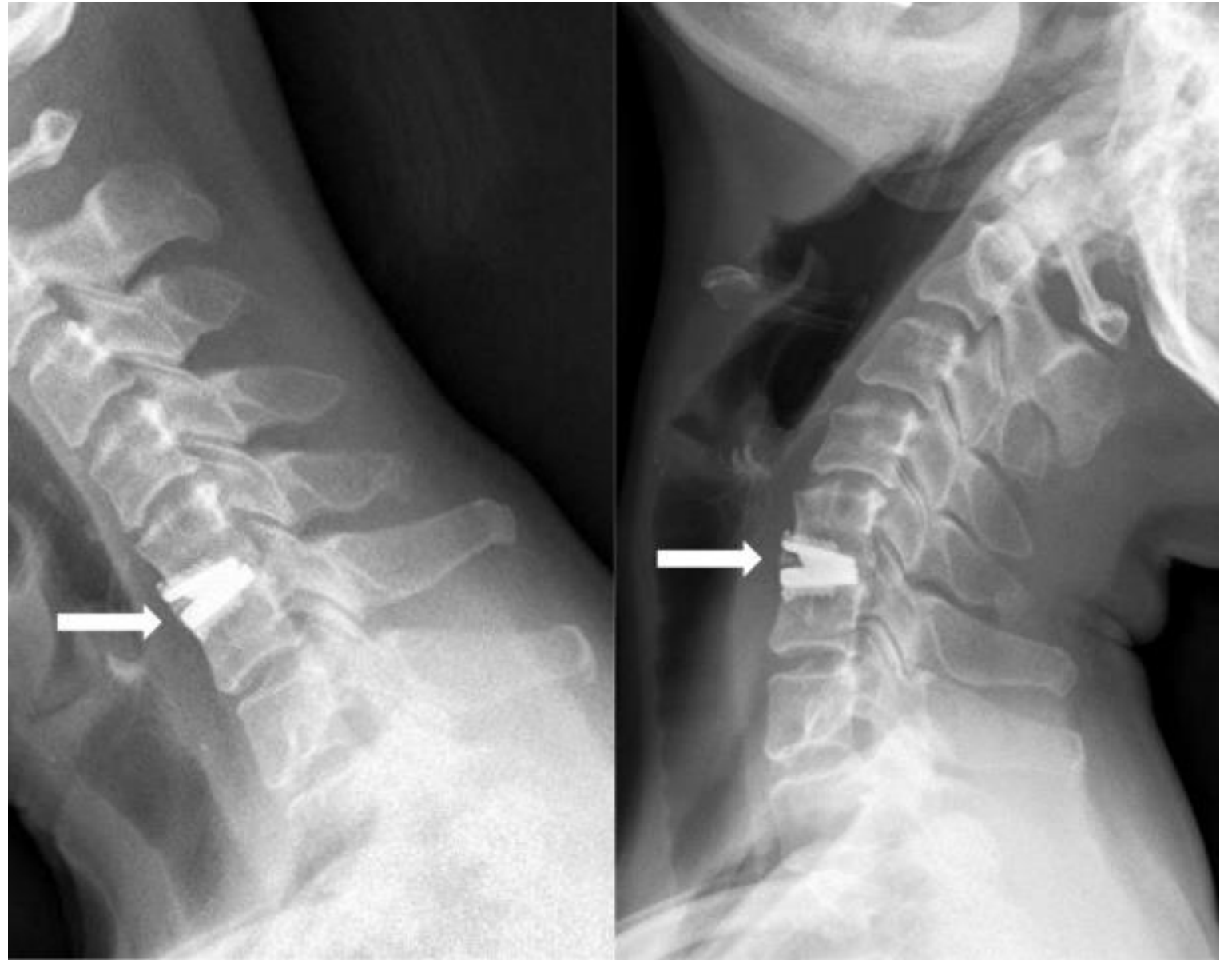
ACDF



Anterior/Posterior



Disc arthroplasty



Cervical Disc Arthroplasty



Lumbar Stenosis

- Low back pain
- Lower extremity pain
- Numbness/tingling/weakness

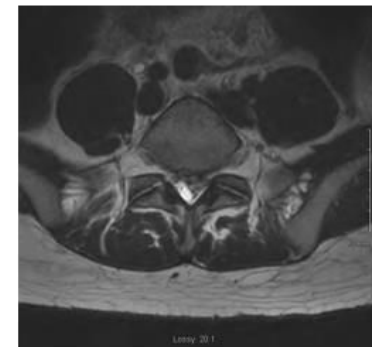
Degenerative Disc

- Stenosis leads to pain in back as well as lower extremities



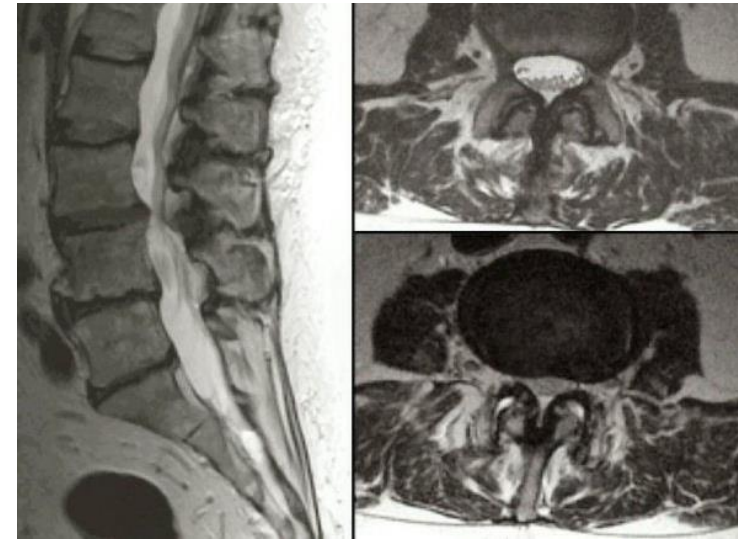
Disc herniation

- Nerve root impingement



Lumbar Stenosis

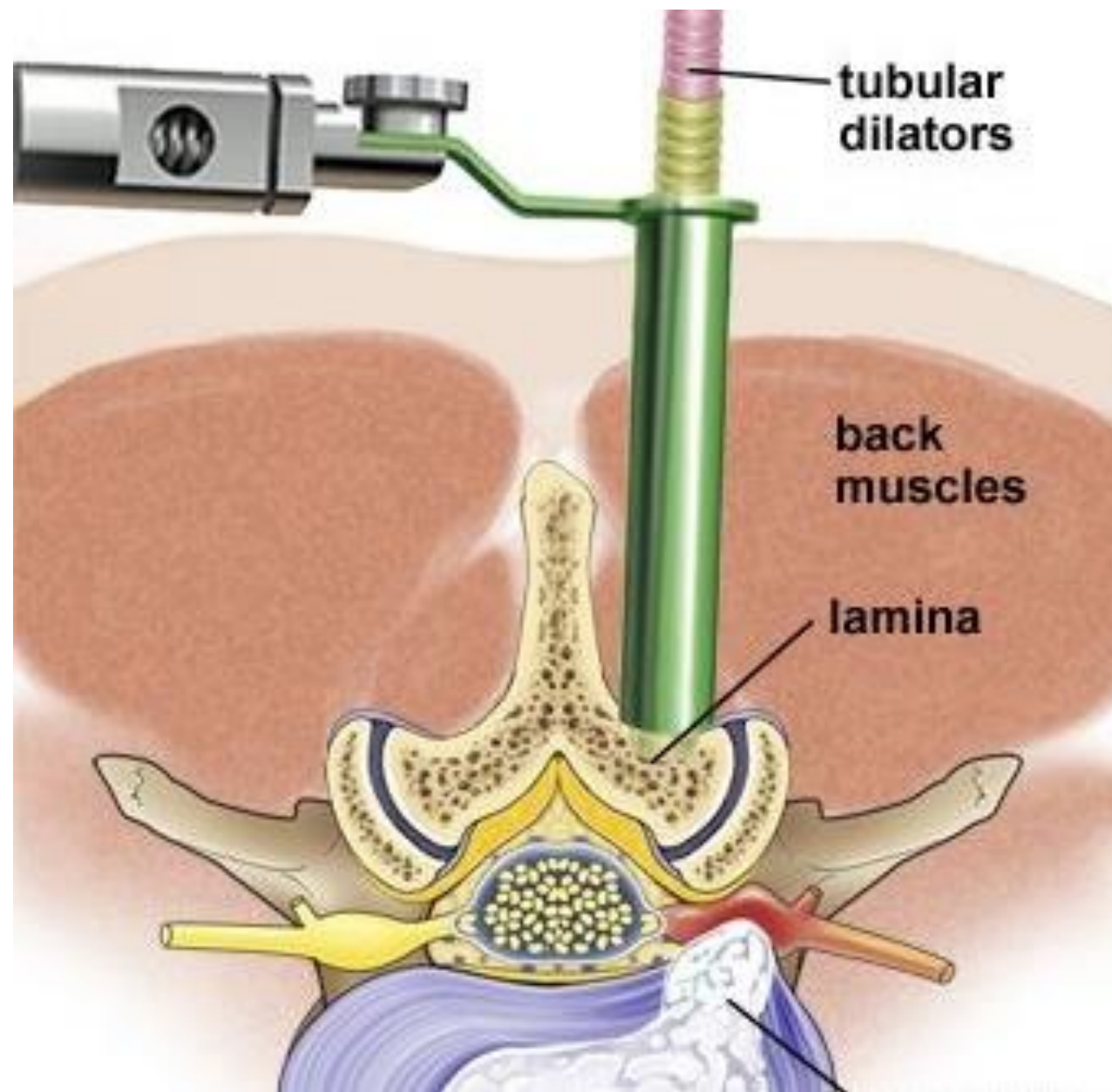
- Ligamentum flavum hypertrophy
- Facet hypertrophy



Lumbar spondylolisthesis

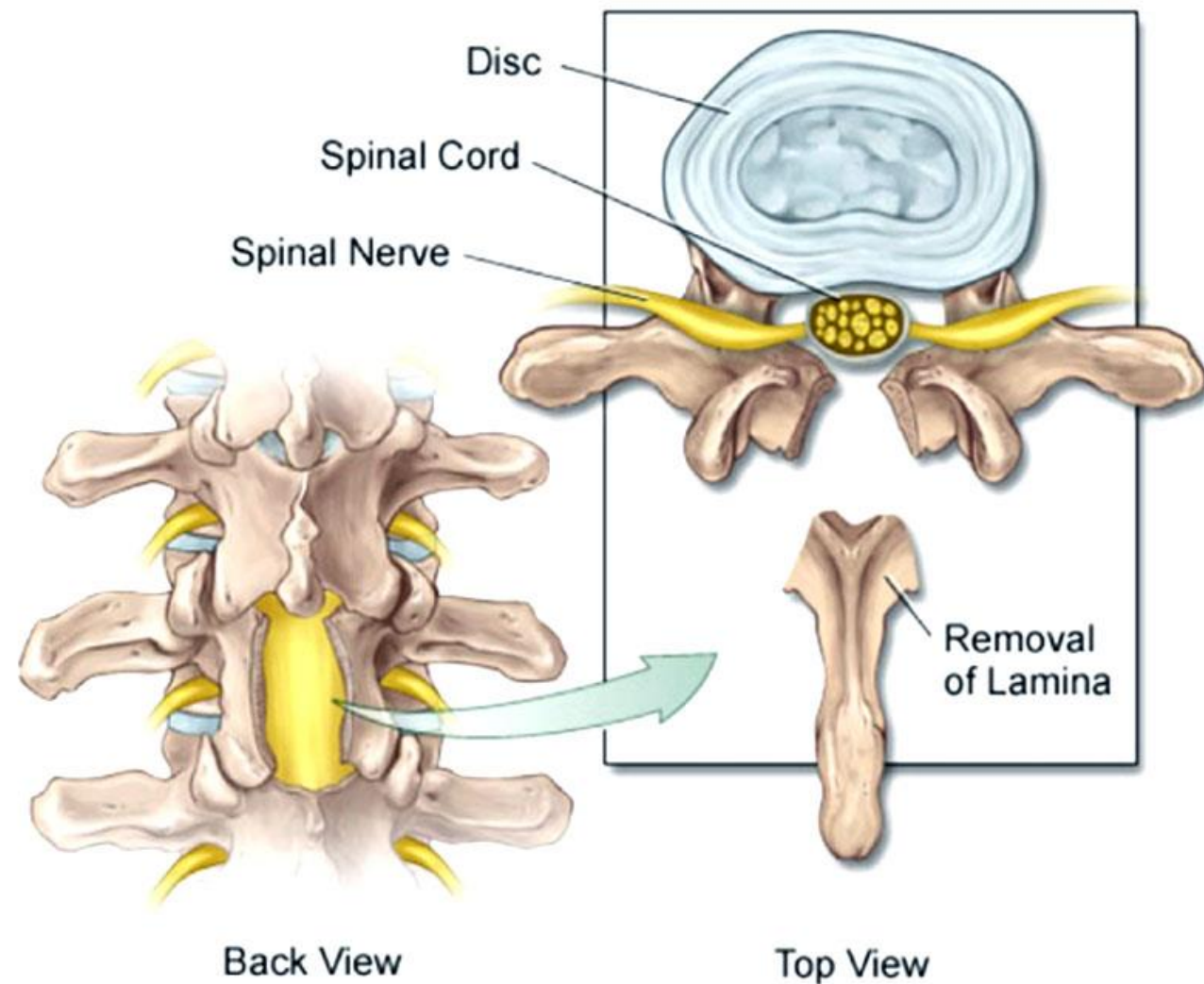


Microdiscectomy



Laminectomy

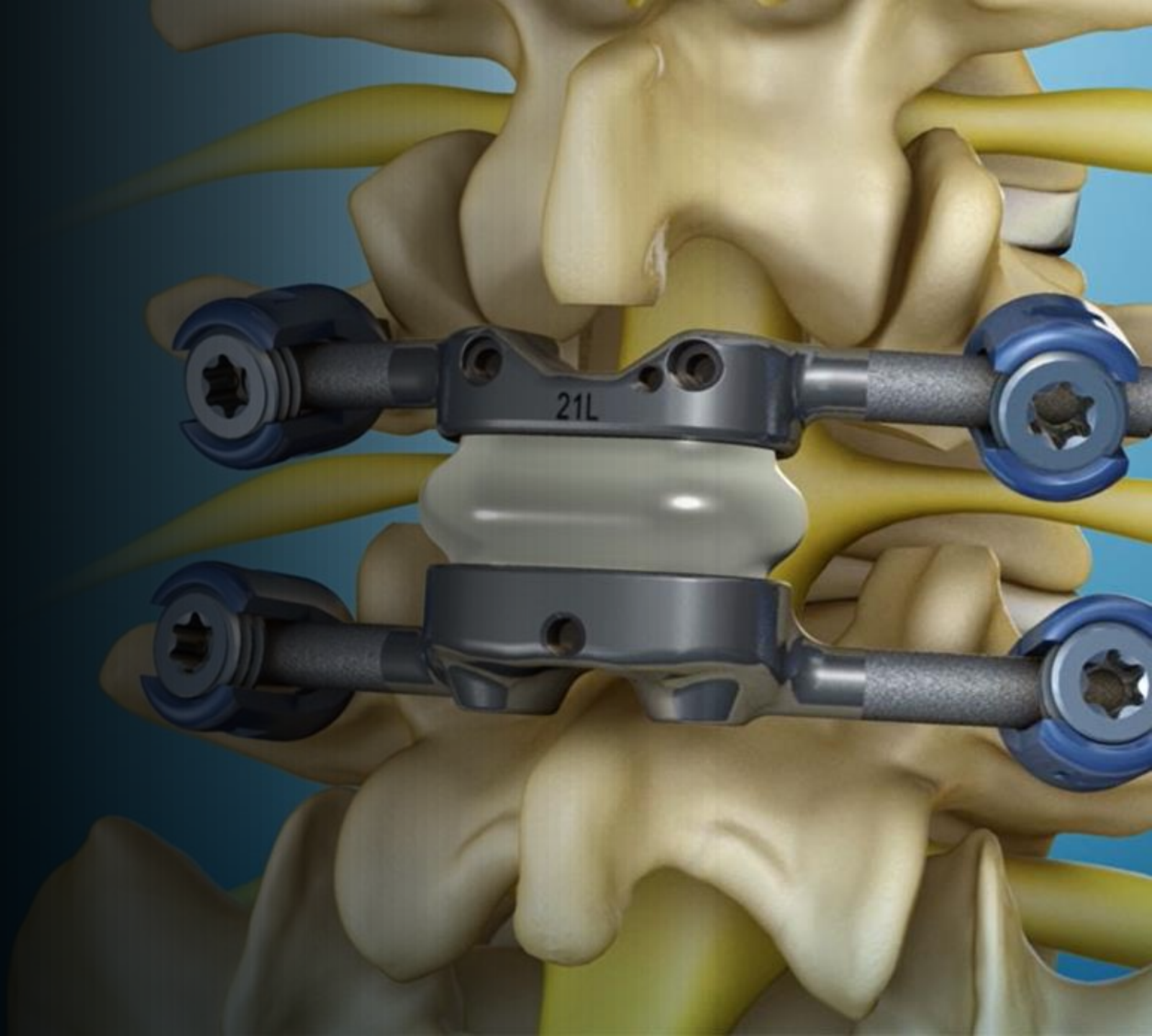
Lumbar Laminectomy



Lumbar Fusion



TOPS (Total
Posterior Spinal
System)



TOPS

