

# Diseases of the spine

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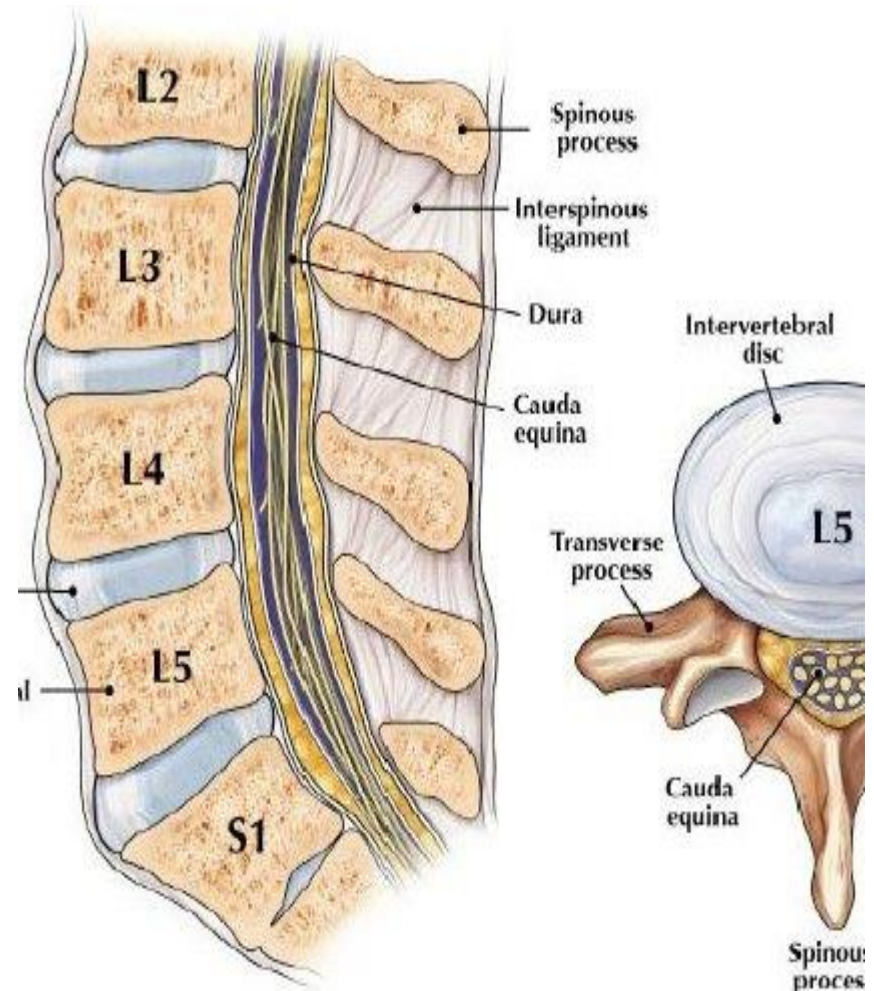
# What do we mean by the word (SPINE)?

Two integrated systems

1-A musculoskeletocartilagenous-skeletal system

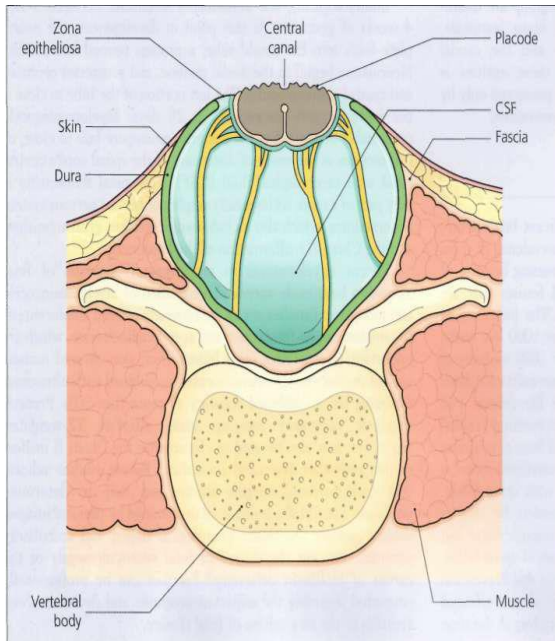
2-A neurological system

Both are integrated functionally and anatomically



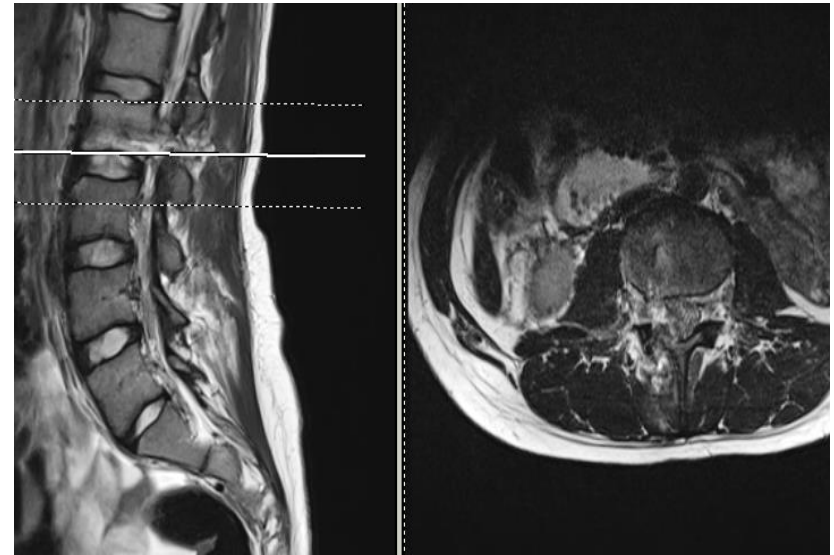
# Types of diseases that can involve the spine

1-Congenital-neural tube defects  
e.g,--Myelomeningocele



# 2-Traumatic

- Bone and ligamentous injuries\_+spinal cord injuries



# Spinal cord injuries



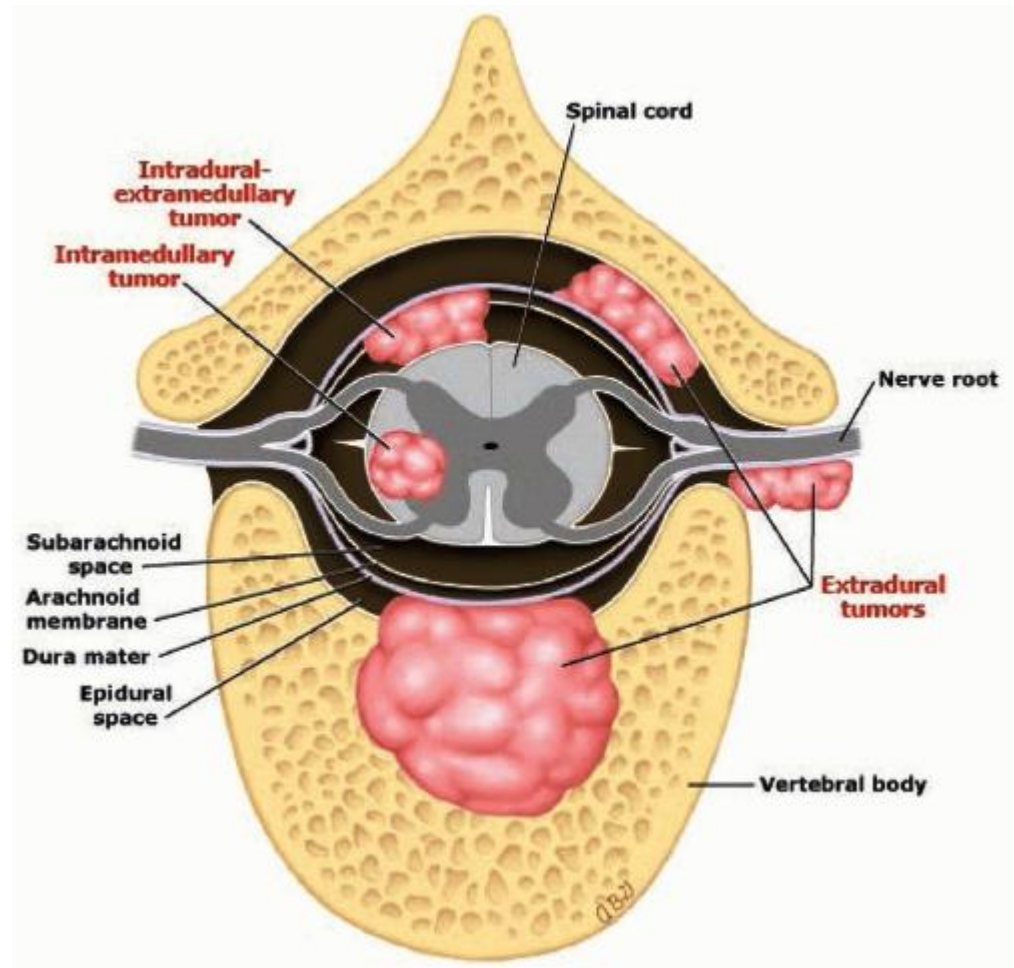
# 3-Neoplastic

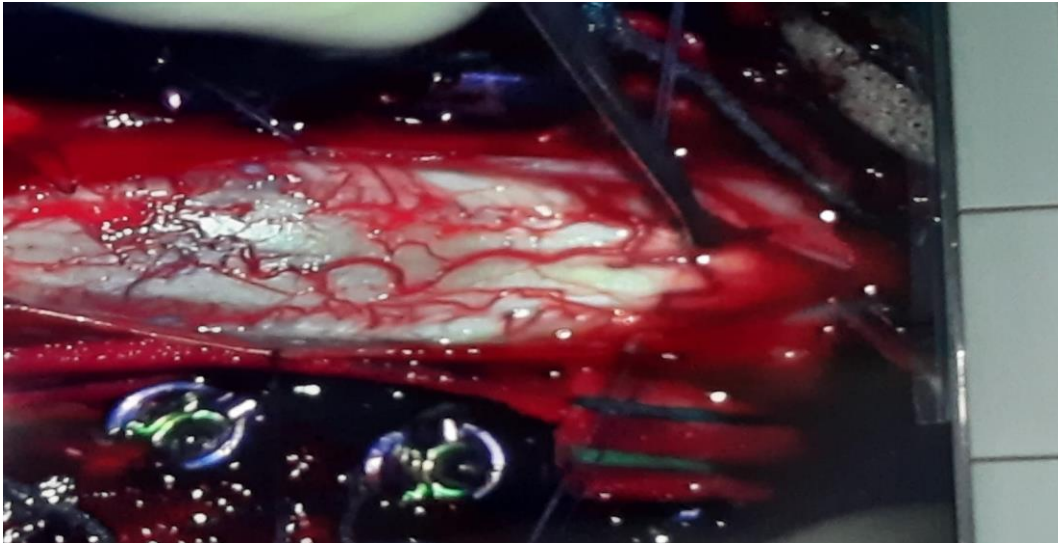
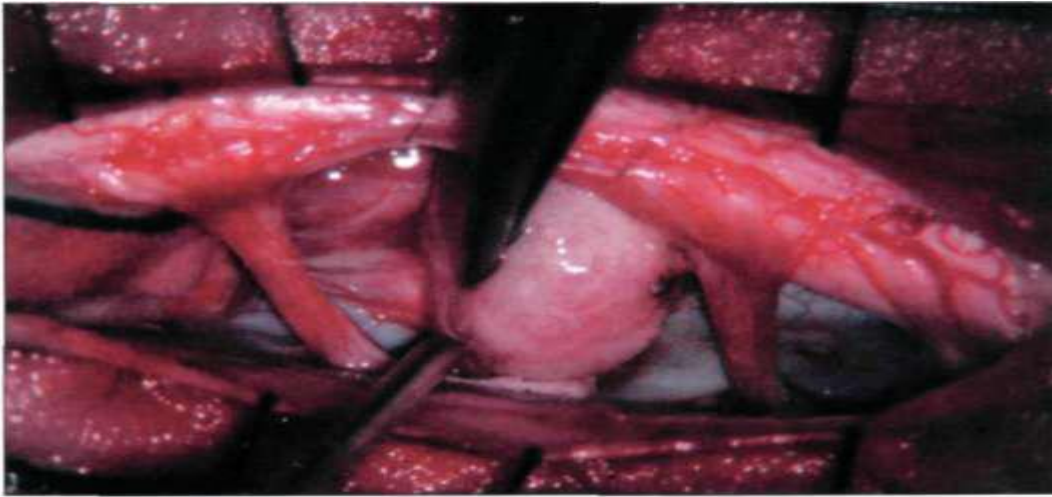
Can be classified anatomically into

1-Extradural tumors

2-Intradural  
extramedullary

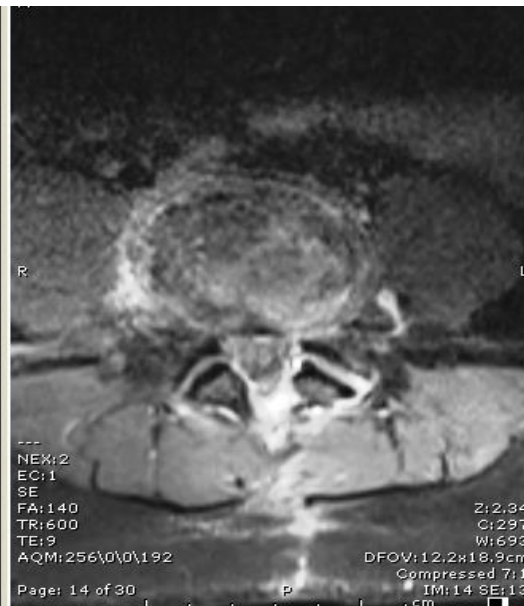
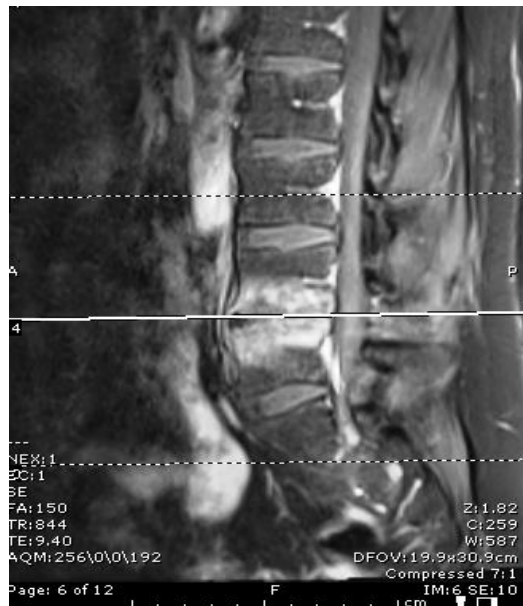
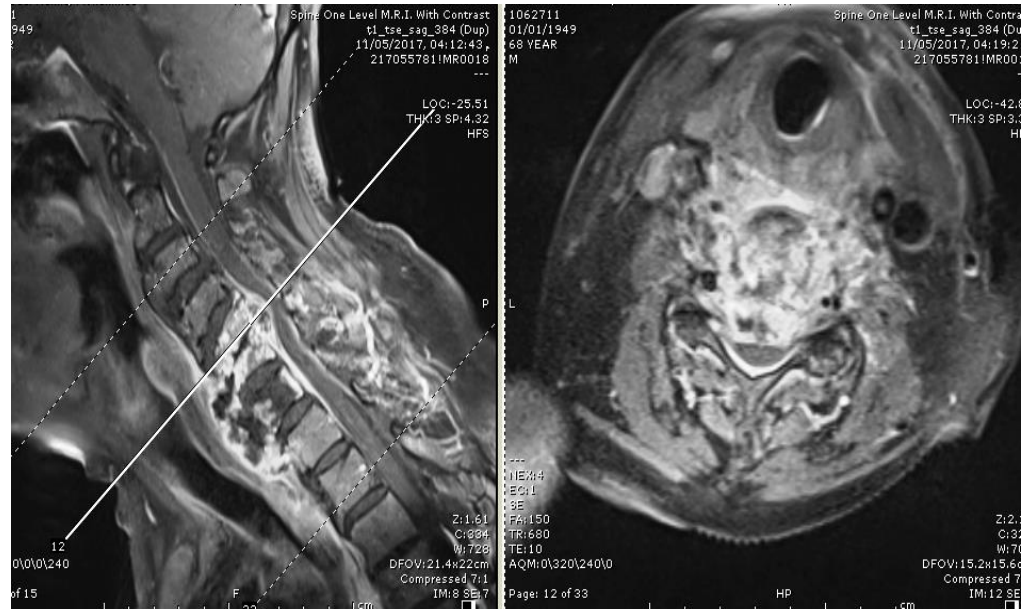
3-Intramedullary





# 4-Infalmmatory

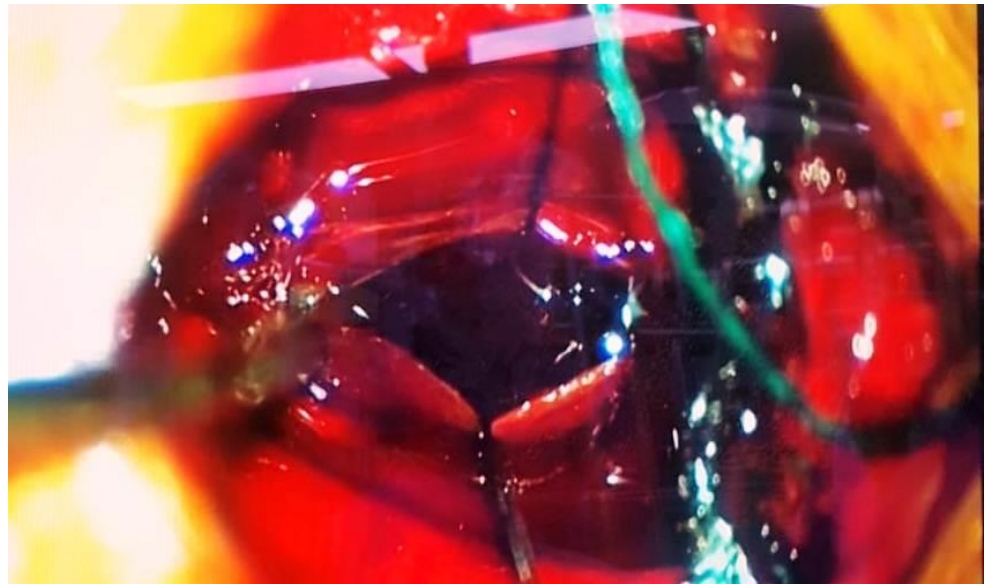
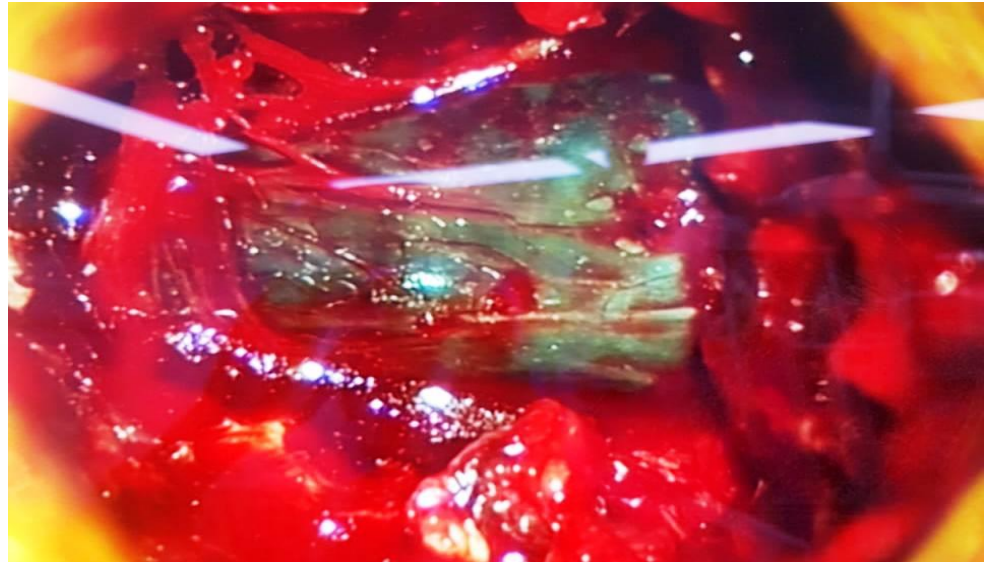
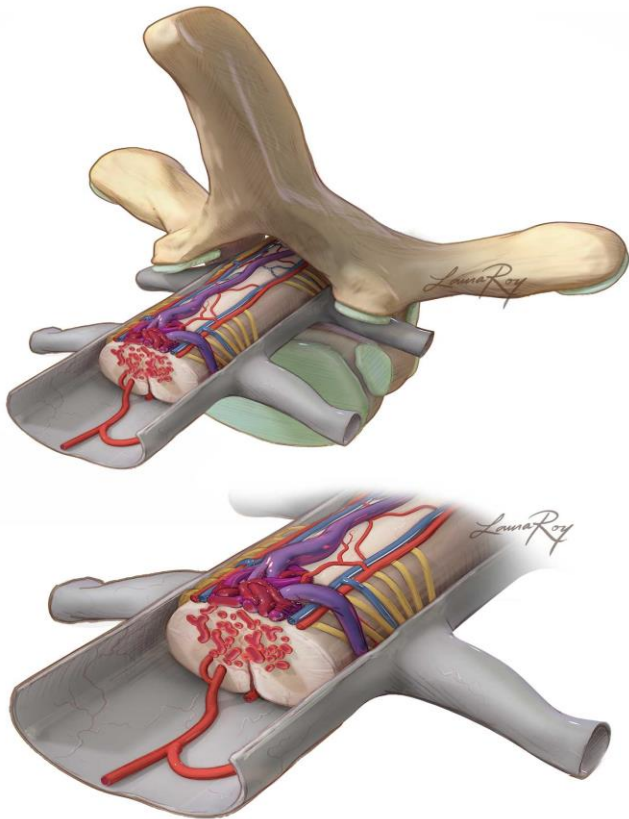
Infectious and noninfectious





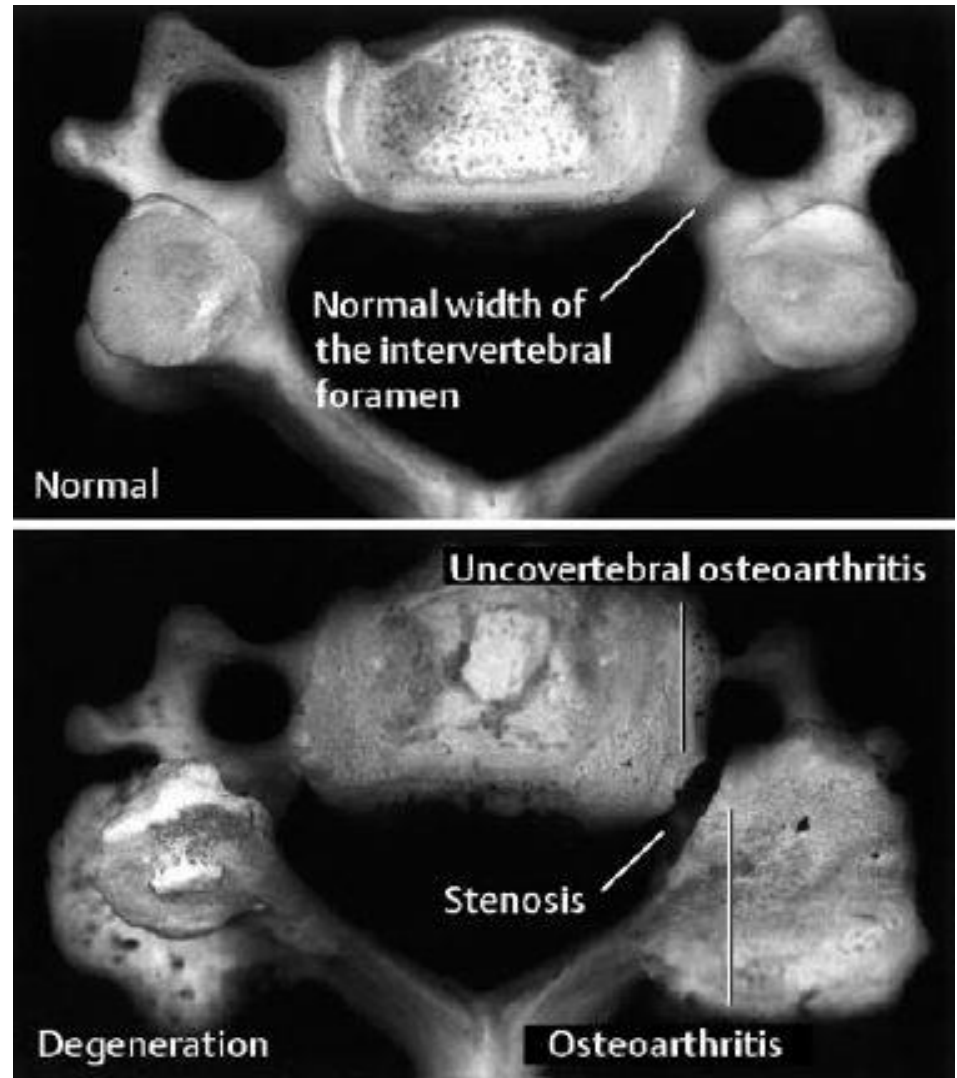
# 5- Vascular diseases

rare



## 6 -The degenerative spinal(disc )diseases

- Are the most common
- A spectrum of diseases
- All are age related—tear and wear
- Some use the term spondylosis
- These changes diffusely involve the :
  - Intervertebral disc
  - The joint --facet
  - The bone
  - The ligament and soft tissues



# The degenerative spinal(disc )diseases

- Degenerative spine conditions involve the gradual loss of normal structure and function of the spine over time. They are usually caused by aging, but may also be the result of tumors, infections or arthritis. Pressure on the spinal cord and nerve roots caused by degeneration can be caused by:  
Slipped or herniated discs

# Degenerative spinal diseases

1-Disc herniation\_prolapse.

2-Canal stenosis.

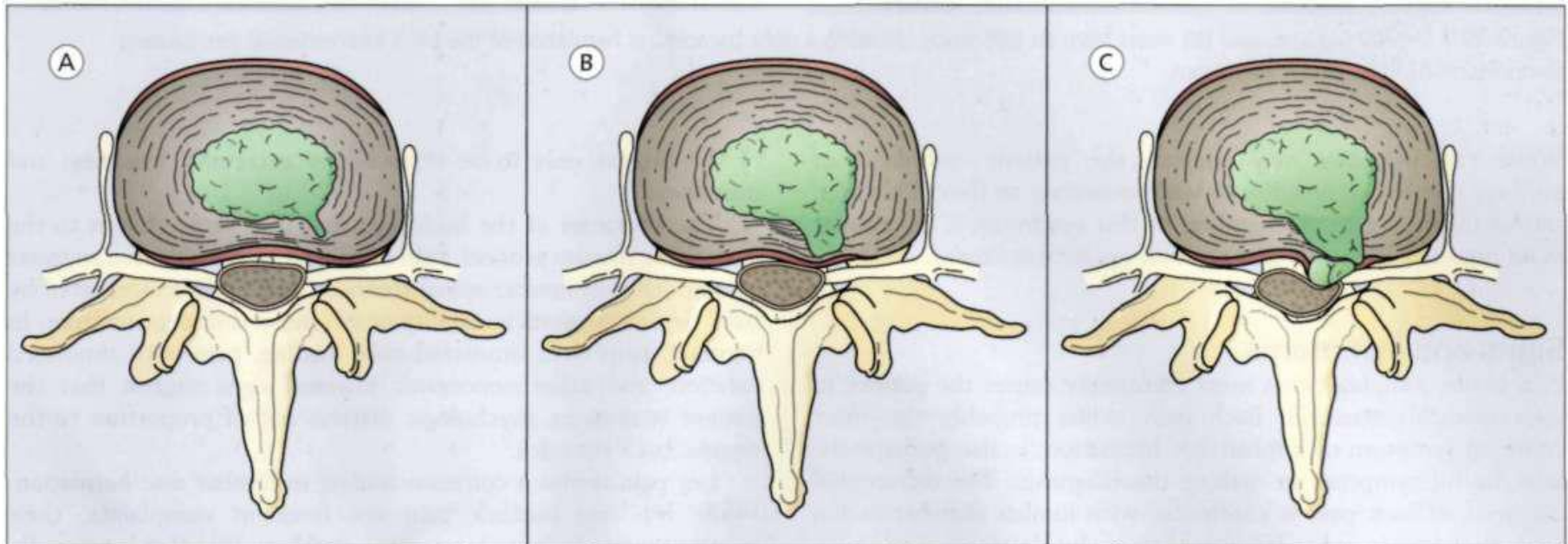
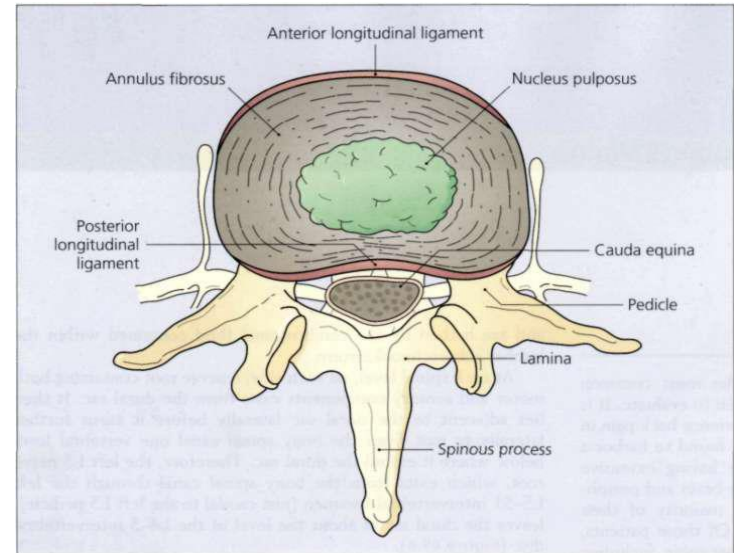
3-Spondylolesthesis.

# Intervertebral disc herniation

90% lumbar

9% cervical

1% thoracic(dorsal)

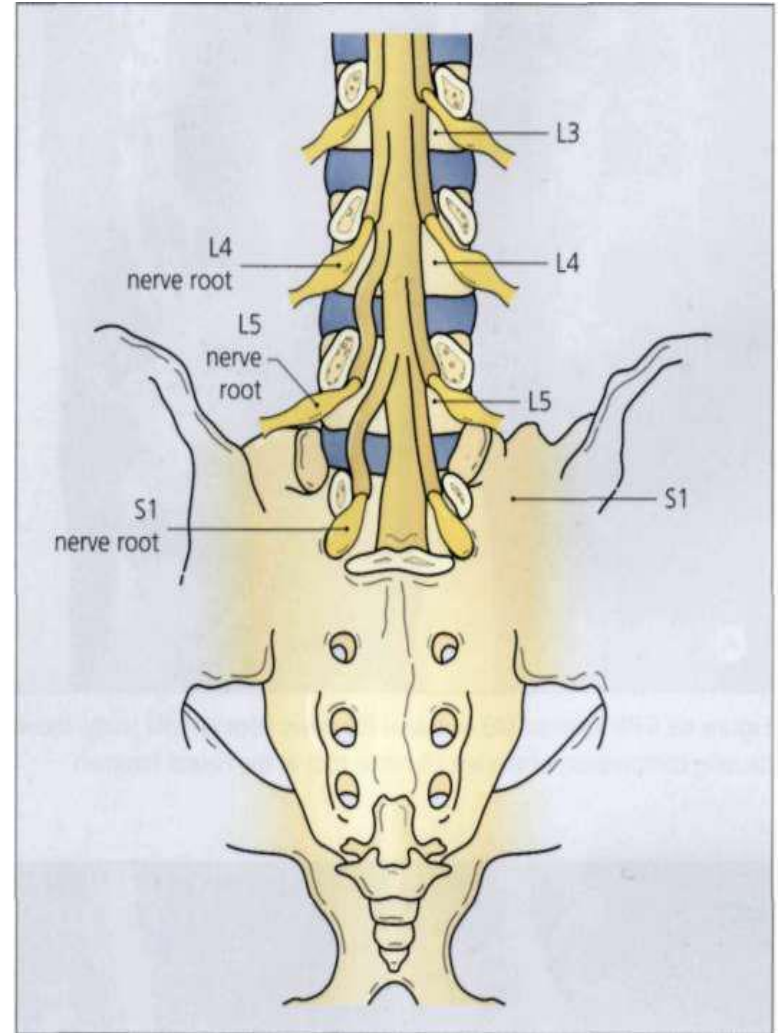


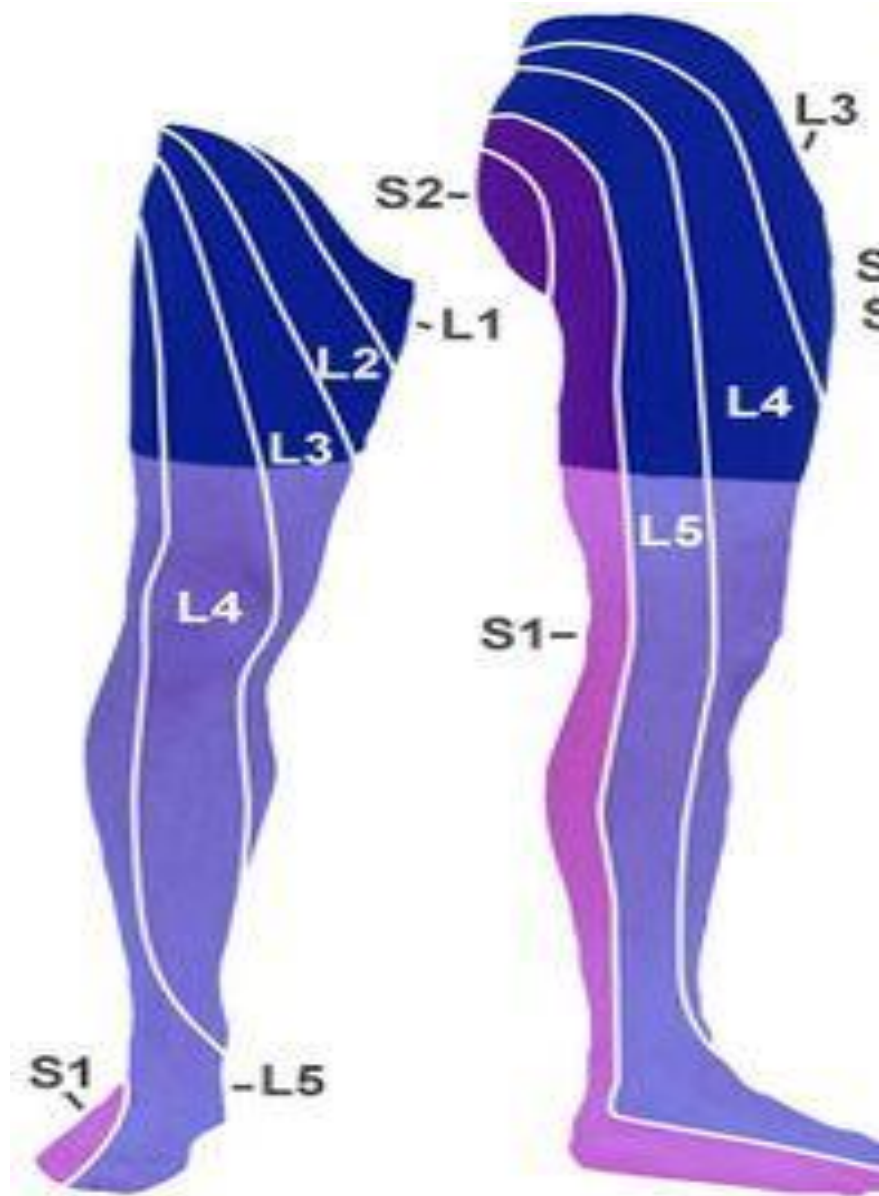
## Lumbar disc herniation-symptoms and signs:

1-Axial back pain

2-Root pain –sciatica (L4L5/L5S1)

3-Symptoms of roots dysfunction – numbness, weakness or sphincteric disturbances





# Physical signs

1-straight leg raising test

30-60 degrees



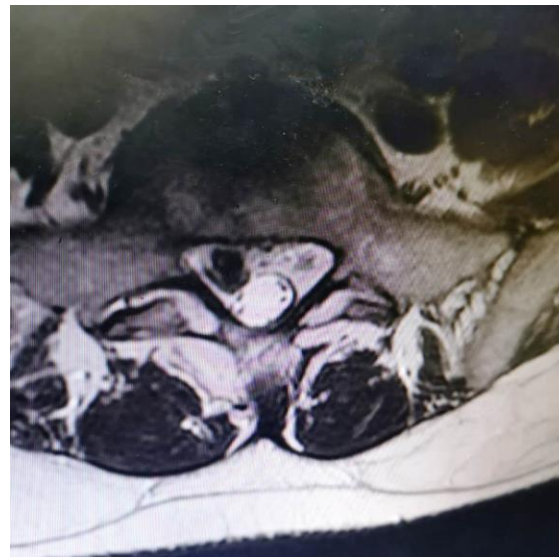


# Neurological deficits

Disc	Nerve root	Pain	Paresthesias, numbness	Weakness	Reflexes
L3-4	L4	Lower back buttock lateral/ anterior thigh, anterior leg	Anterior thigh, anterior leg	Quadriceps femoris femoris (extension of knee)	Knee jerk diminished or absent
L4-5	L5	Lower back, buttock, lateral thigh, anterolateral calf, occasionally groin	Anterolateral calf to great toe	Extensor hallucis longus (extension of great toe)	Usually no changes
L5-S1	S1	Lower back, buttock, lateral thigh and calf	Lateral calf to small toe	Gastrocnemius (plantarflexion of ankle)	Ankle jerk diminished or absent

# Investigations

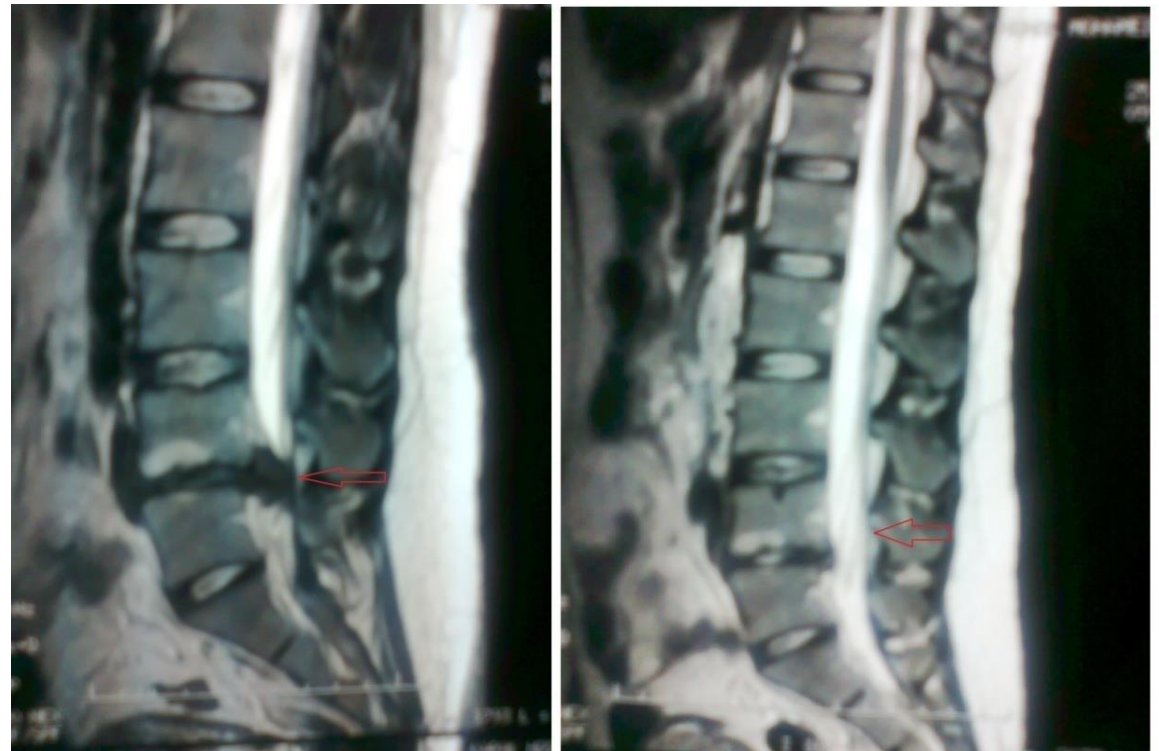
Spine MRI-is the best



# Treatment

Conservative nonsurgical

Success — up to 80%



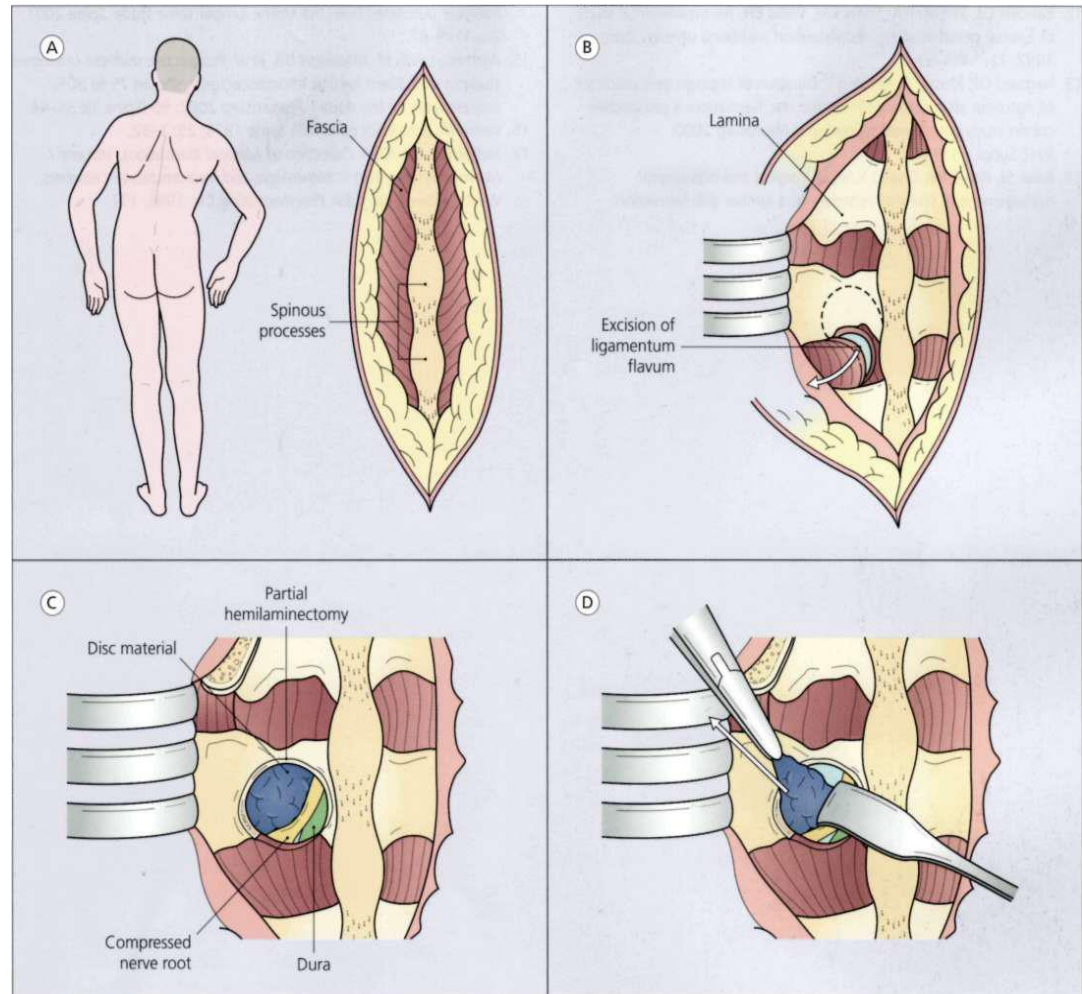
# Surgery

-Microdiscectomy

Indications:

-severe sciatica

-neurological deficit-weakness





# Cervical disc prolapse

It can produce:

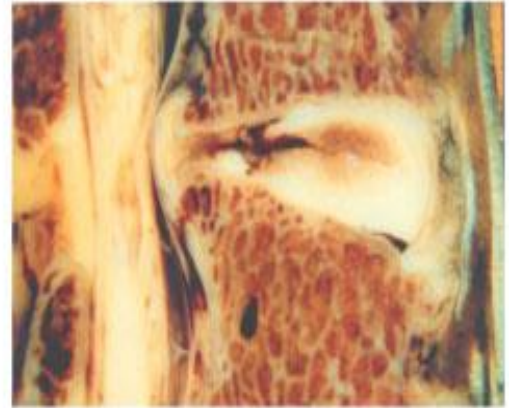
1-Radiculopathy—root compression

1-Myelopathy-spinal cord compression

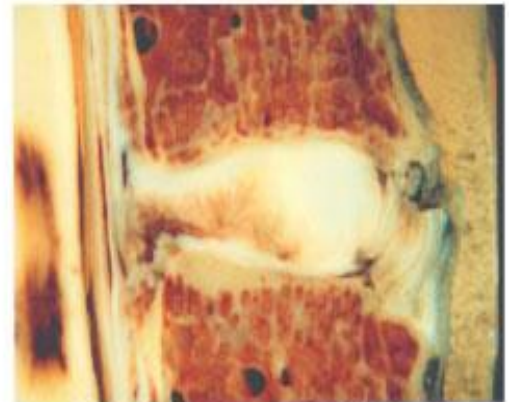
**A**



**B**



**C**

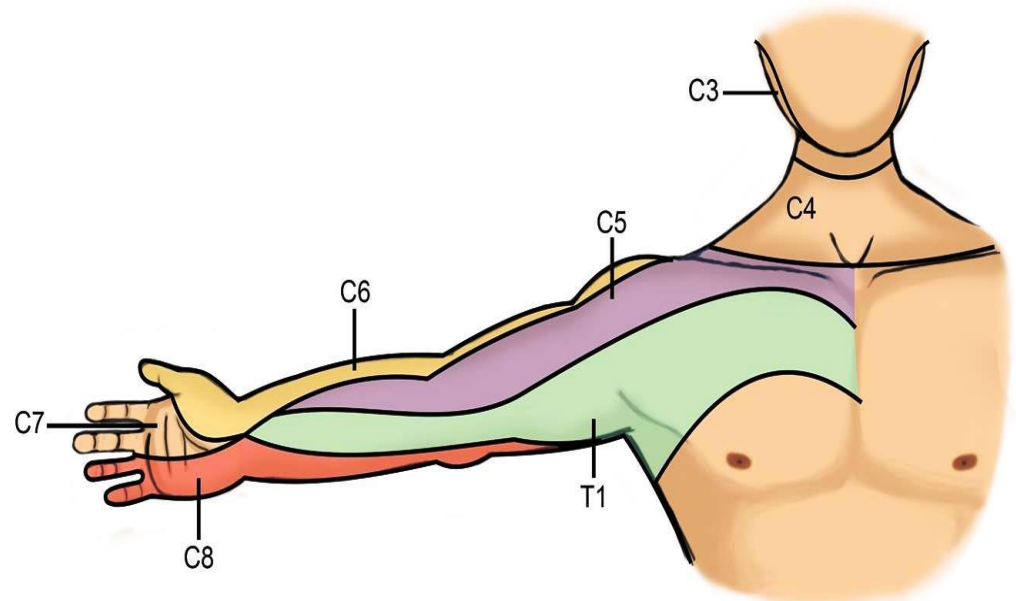


# Cervical radiculopathy

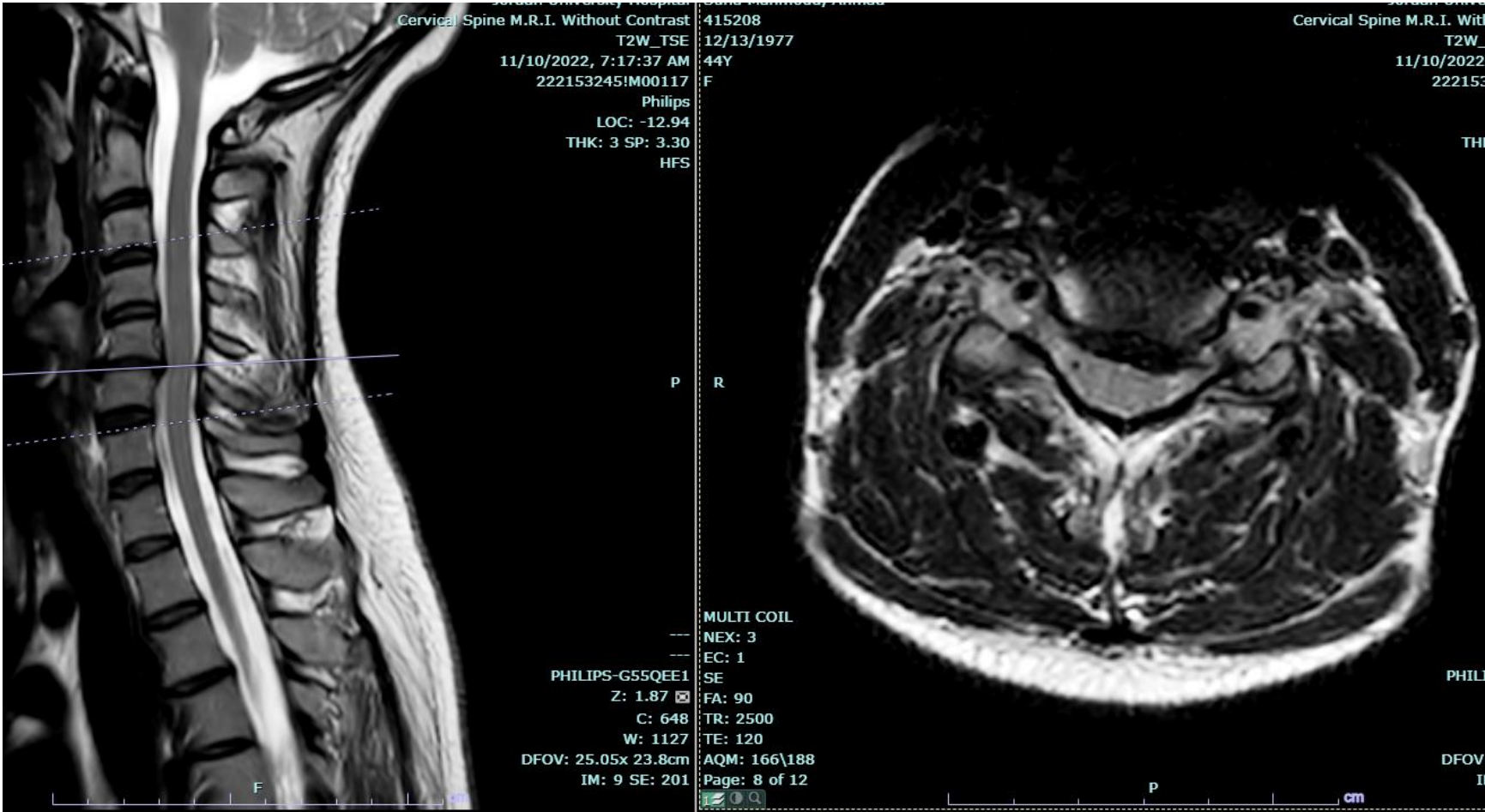
Nerve Root Motor Function	
Nerve Root	Test
C5	Elbow Flexion
C6	Wrist Extension
C7	Wrist Flexion, Finger Extension
C8	Finger Flexion
T1	Finger Abduction

Root Values for Tendon Reflexes	
Root Value	Tendon Reflexes
C5	Biceps
C6	Brachioradialis
C7	Triceps

Upper Extremity Dermatome Anterior View



# Left C5-C6 PID





# Cervical myelopathy

Will affect both upper and lower limbs-with all signs of upper motor neuron lesion

## Common symptoms

Clumsy or weak hands

Leg weakness or stiffness

Neck stiffness

Pain in shoulders or arms

Unsteady gait

## Common signs

Weakness of the hand musculature

Hyperreflexia

Lhermitte sign (electric shock-like sensation down the center of the back following flexion of the neck)

Sensory loss



# Treatment of cervical disc prolapse

1-Cervical discectomy and fusion(ACDF)

Or

2-laminectomy



# Lumbar canal stenosis

-Long standing circumferential stenosis of the lumbar canal

-Caused by

1-diffuse disc bulge

2-ligaments hypertrophy

3-facet joint hypertrophy

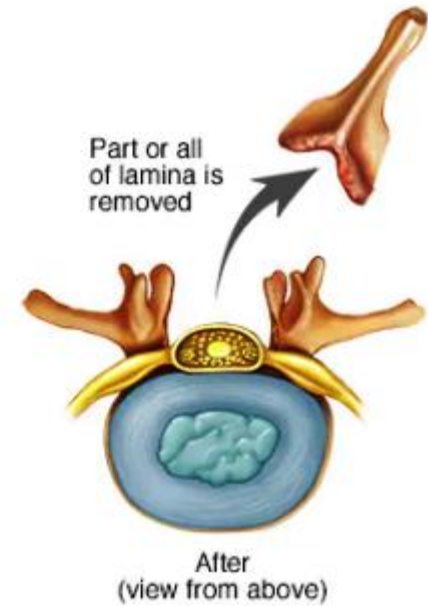
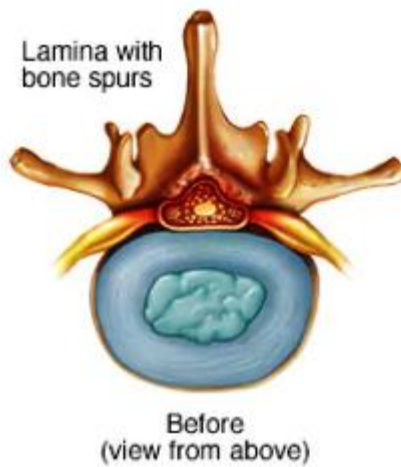
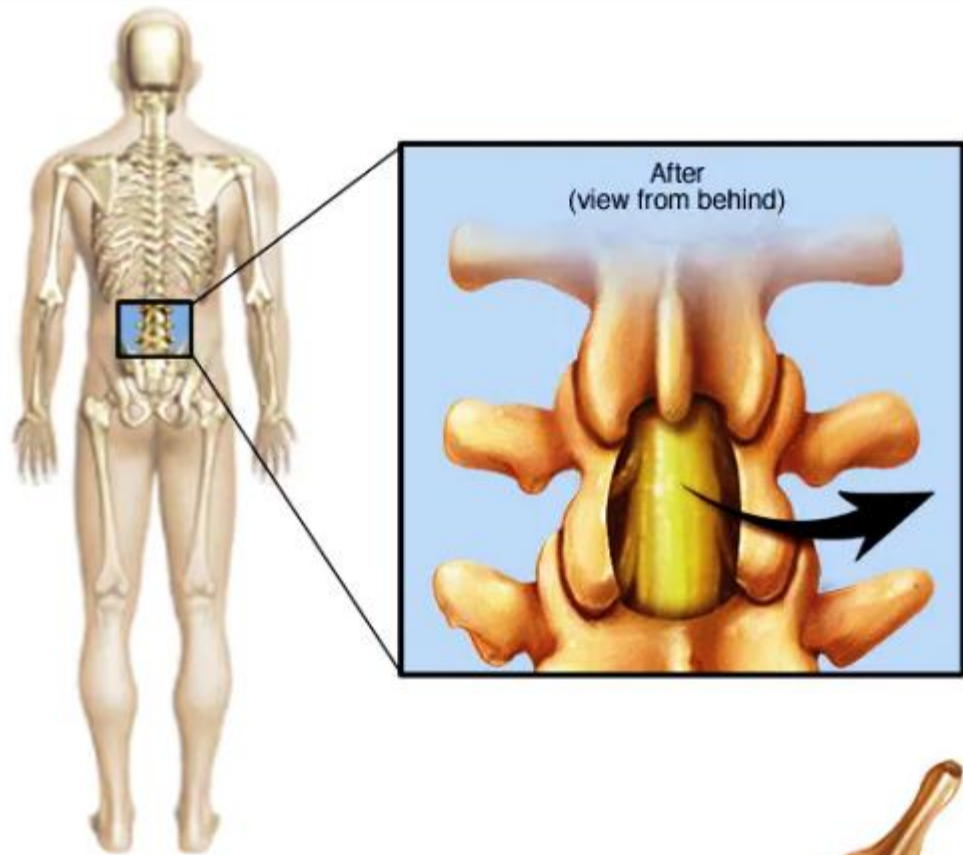
-The typical presentation is progressive **neurogenic claudication**-pain in the lower limbs upon walking

-It is a disease of elderly population



# Treatment

Is usually surgical  
laminectomy



# Spondylolesthesis

The forward or anterior displacement of a vertebra over the vertebra inferior to it.

-Will cause:

low back pain\_+ lumbar radiculopathies

-Surgical treatment

Laminectomy and fixation



Hope to see you in our theatre in  
ان شاء الله 2025-2026

