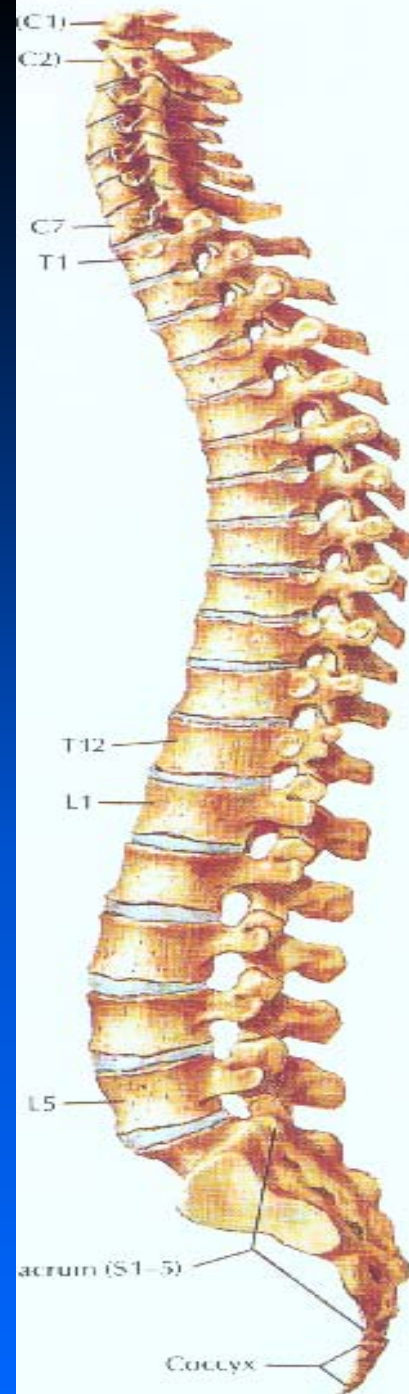


# BACKACHE & SCIATICA



# LUMBAR SPINE

- No. of vertebrae- 5
- Lordotic curve- anteriorly
- Strongest portion of spine
- Stress- maximum
- Facet its- sinovial
- smooth gliding motion
- restrict motion beyond limits
- Pedicles vary in lie. Placed more laterally from L1 to L5



L4 and L- Transmit- at. Laterally  
maximum mobility

# INTERVERTEBRAL DISC

- Volume of lumbar discs  $10 \text{ cm}^3$ ,
- Nuclues  $15\% = 1.5 \text{ cm}^3$ ,
- Annulus has 12 concentric layers very strong
- Disc usually is not compressible or very slightly compressible
- Intrinsic pressure of muscles =  $60 \text{ kg/sq cm}$



# THE MUSCLES

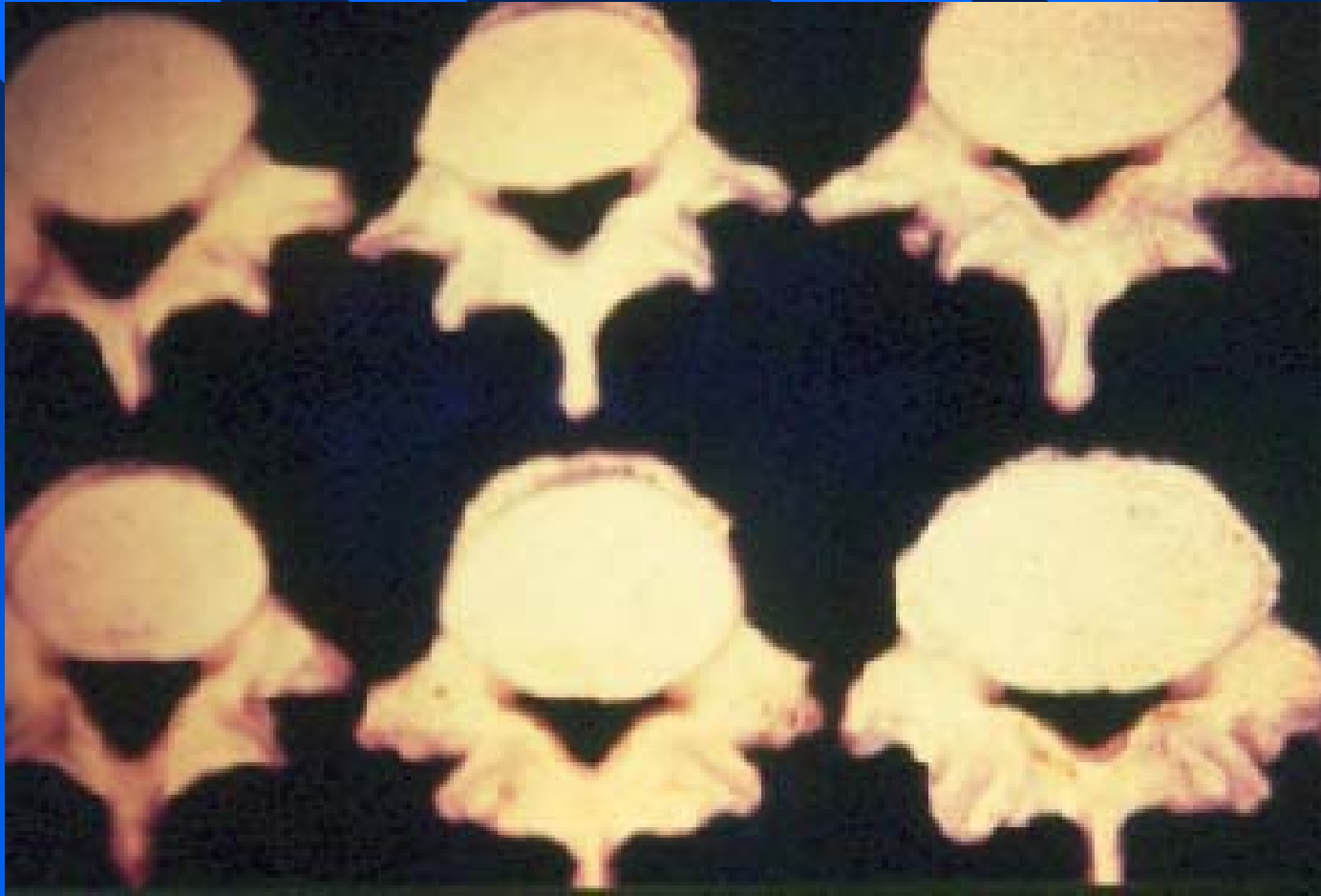
- The strength of spine lies in its muscles includes  
paraspinal  
abdominal  
quadriceps- power house of the body



# BONY CANAL

- At L1- Round
- At L5- Trifoliate
- Lat. Rescusses- prominent at
- AP diameter varies from 15 to 25 mm
- 20 mm capacious
- 12 to 15 mm small canal
- 12 mm narrow- spinal stenosis





# LIGAMENTUM FLAVUM

- Thickness at L5/S1 5.5 mm
- Thickness at L4/5 6.2 mm
- Ligament does not hypertrophy
- It buckles in or unfolds

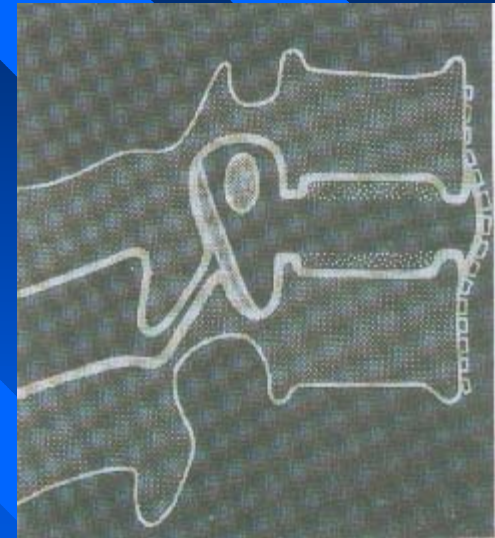


# LIGAMENTUM FLAVUM



# THE MOTION SEGMENT

- Motion is produced by structures holding vertebrae together
  - ❖ Intervertebral disc
  - ❖ Intervertebral foramen facets
  - ❖ Interlaminar space
  - ❖ Ligamentum flavum
  - ❖ Inter and spura spinous ligaments



A change in the intervertebral disc produces  
Change in the whole motion segment



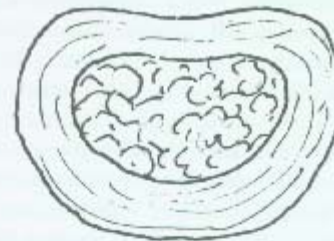
# MOVEMENTS OF SPINE

Mean values in degrees of range of motions (ROM) of the lumbar spine  
(Punjabi et. al. 1994)

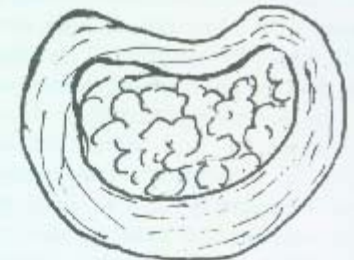
Level	Flexion-Extension	Axial Rotation	Lateral Bending
L1/2	10.1	2.1	4.9
L2/3	10.8	2.6	7.0
L3/4	11.2	2.6	5.7
L4/5	14.5	2.2	5.7
L5/S1	17.8	1.3	5.5



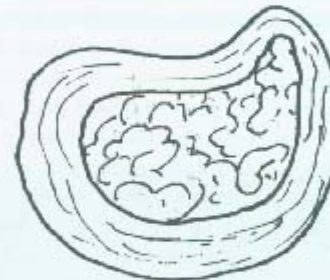
# TYPES OF PROLAPSED DISC



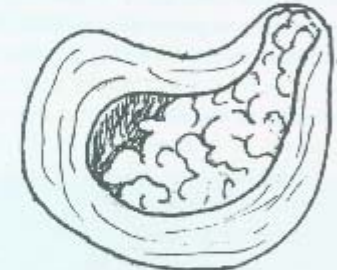
*Normal disc*



*Diffuse bulge*



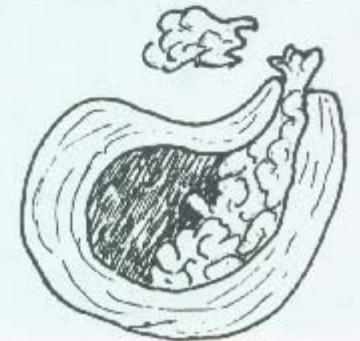
*Localised bulge*



*Herniated disc*



*Extruded disc*



*Sequestered disc*

# FREQUENCY OF DISC PROLAPSE

Total no. of cases 400  
(one level disc prolapse)

■ Level	Percentage
■ L5/S2	49
■ L4/5	40
■ L3/4	7.5
■ L2/3	3
■ L1/2	0.5



# CAUSES OF BACKACHE

- unusual activity
- stressful city life
- Occupational
- Poor posture
- Overweight
- PIVD
- Facet syndrome
- Muscles sprain
- Spinal stenosis
- Sacroiliac – jt pain
- Inflammation trauma, malignancy



# REFERRED PAIN

- Common in backache
- Radiation of pain to areas beyond known dermatomal patterns
- Pain relieved by local anaesthetic infiltration in muscles and ligaments
- Facet joint pain is produced in buttocks
- Source of pain can be other than the disc

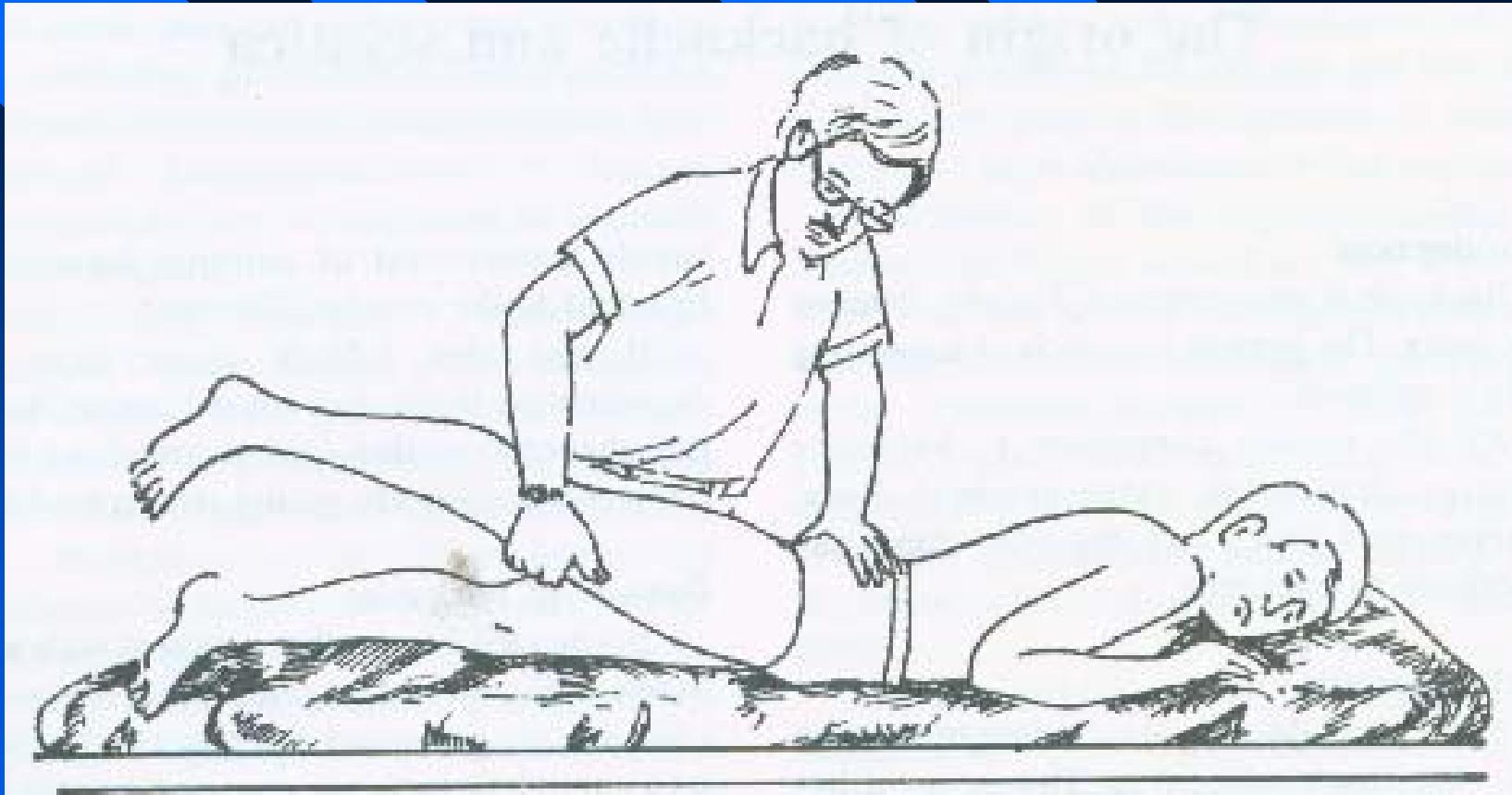


# FACET SYNDROME

- Morning stiffness
- Pain in buttocks (referred)
- Sitting uncomfortable
- Pain from L4 & L5 discs is referred to SI joints)



# EXTENSION PAIN



1. SI joint .
2. Upper lumbar disc prolapse
3. Pathology in hip joint



# SYMPTOMS

- Backpain
- Sciatica
- Neurogenic claudication
- Sensory dysfunction

Cold feet

Burning

Tingling

hyperaesthesia

Saddle pain – genital hypaesthesia



# BACK SIGNS

- Stance- tilted to one side
  - Movements restricted
  - Lordosis obliterated
  - Muscles prominent due to spasm
  - Tenderness over muscles
- Leg: sensations – Hypoesthesia
  - Reflexes
  - Weakness of muscles
  - Wasting in muscles



# SLR SIGN



# INVESTIGATIONS

- Plain x-ray:-

  - Instability

  - Sacralisation

  - Anatomical abnormality

  - Reduction of disc height

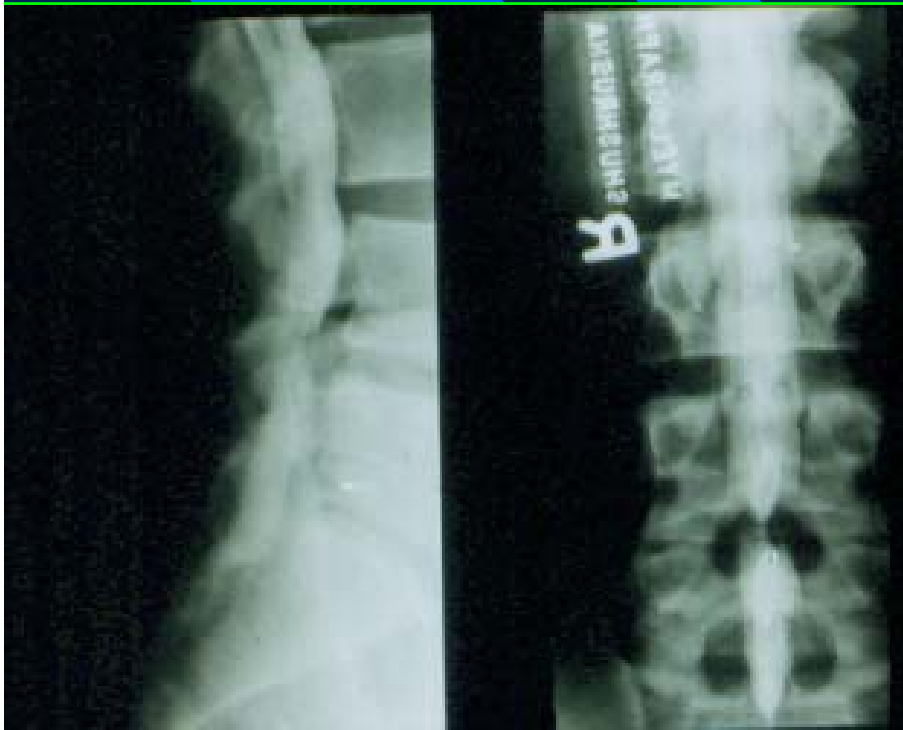
- CT scan: shows lateral recesses better

- CT- Myelo- In presence of implants like cardiac, pace makers, ss spinal implants

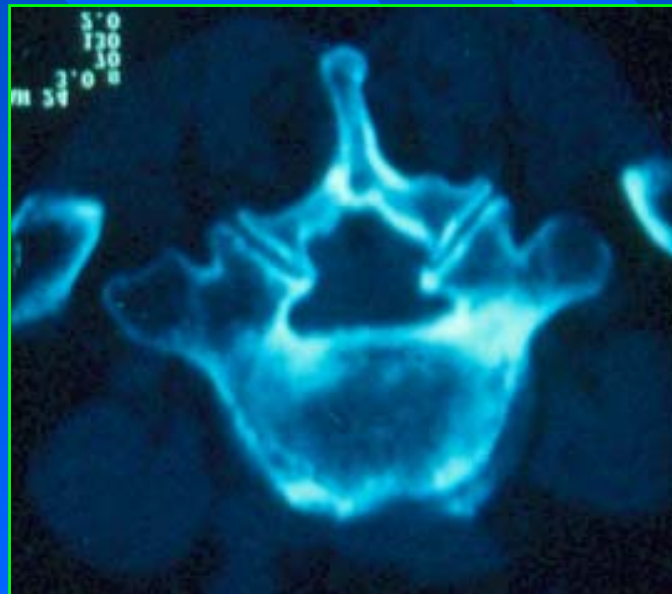
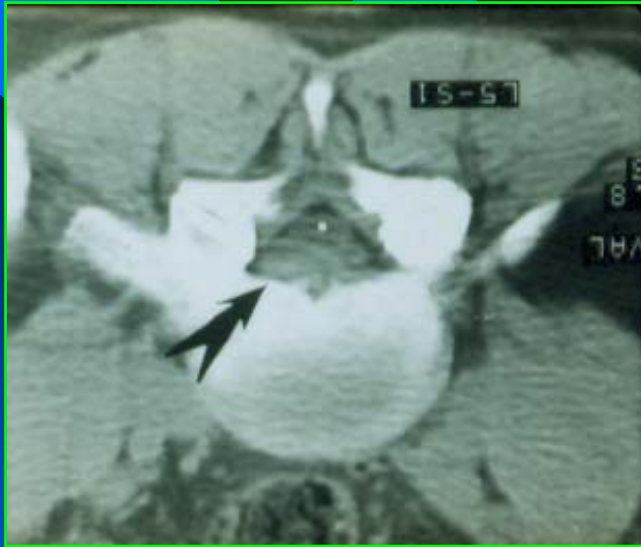
- MRI : Investigation of choice.



# MYELOGRAPHY



# CT SCAN



# MRI



# DISCOGRAPHY

- Injection of a small quantity of contrast in disc spacer and production of symptoms
- Useful in detecting symptomatic disc in presence of multiple disc
- Origin of pain



# DIFFERENTIAL DIAGNOSIS

- PIVD commonest cause
  - Spondylolisthesis
  - Instability
  - ST joint arthritis
  - Helps of root
  - Tuberculoma, granulation tissue
  - Cysts- savaal, synovial
  - Neuro fibromas
  - Tumour
  - Neuropathy- diabetic carcinomatons
- Anxiety states- tension from mind slips into the back





**THANK YOU**