

Why does the back ache?

Jwalant S. Mehta

MBBS, MS (Orth), D (Orth), FRCS, MCh (Orth), FRCS (Orth)

Consultant Spinal Surgeon



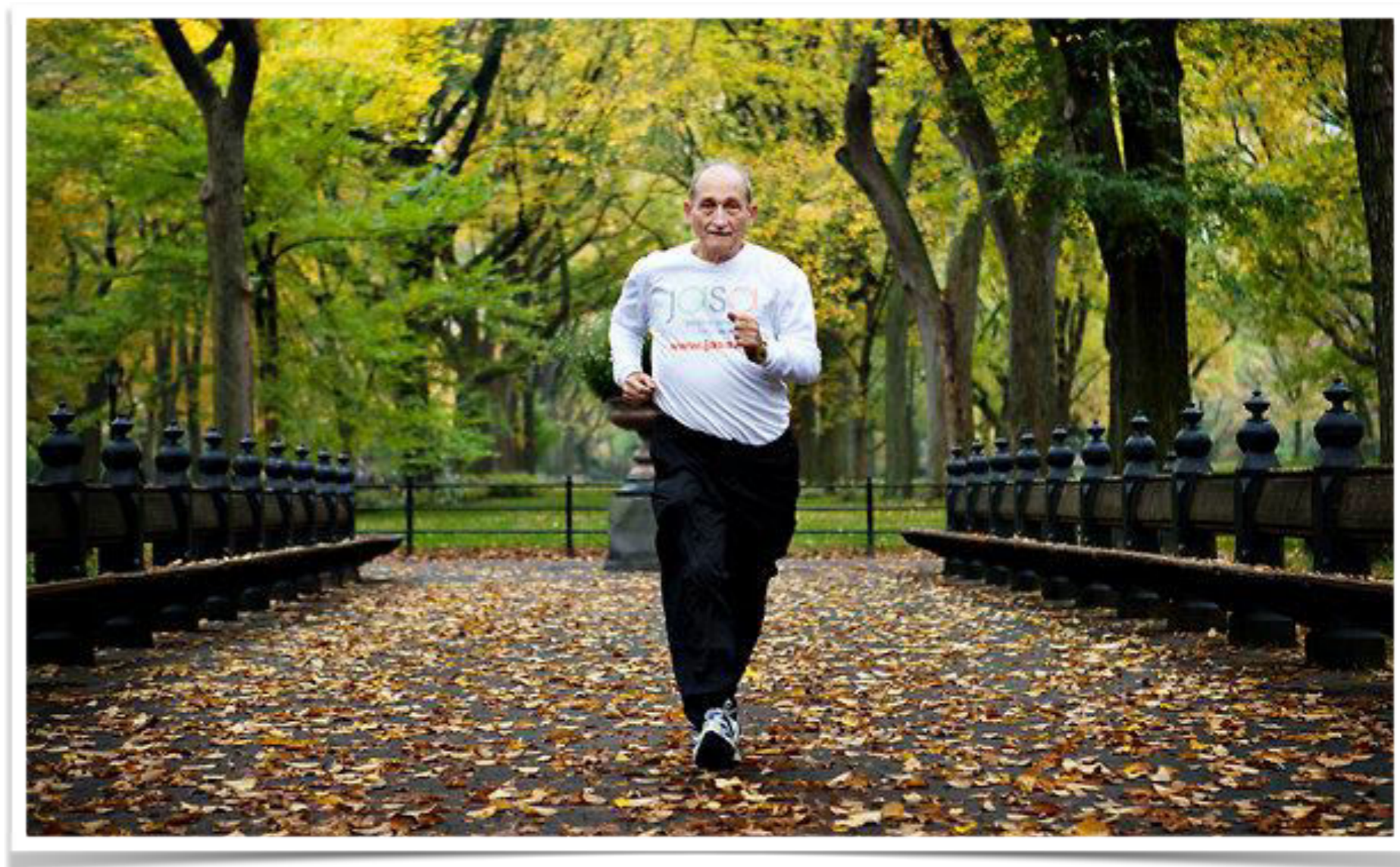
Outline of the talk:

‘Why does the back ache?’

- Working definitions
- Scope of the problem
- Pathologic and clinic basis
- How you could approach this problem

Age or Mileage

- Changing expectations from life
- Longevity
- Doing more.....
-for longer!



Use and abuse our backs

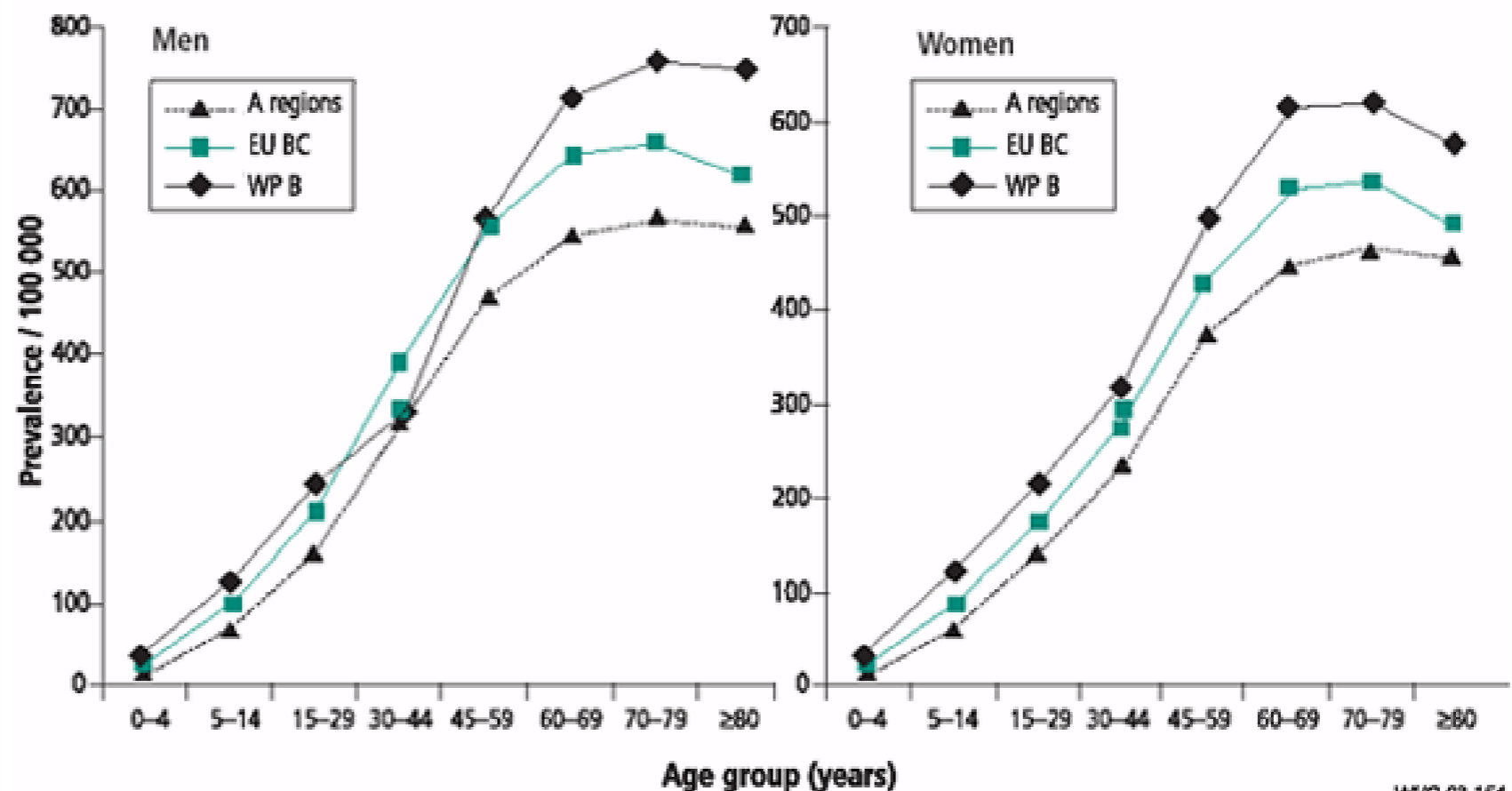
- Sitting habits
- Body habits
- Smoking
- Diet
- Sedentary lifestyle
- Lack of exercise
- TV / Social media / Internet



Low back pain

- Major Health and socio-economic issue
- Time off work in the economically active
- Point prevalence: 58 - 84%

Fig. 5. Prevalence of low back pain, by age group, sex, and region, 2000 (unpublished data, WHO, 2000). Key: see legend to Fig.1



Low back pain

- **Site:**

- Below 12th rib
- Above Gluteal fold

- **Cause:**

- Specific (Cause suspected)
- Non-specific (??)

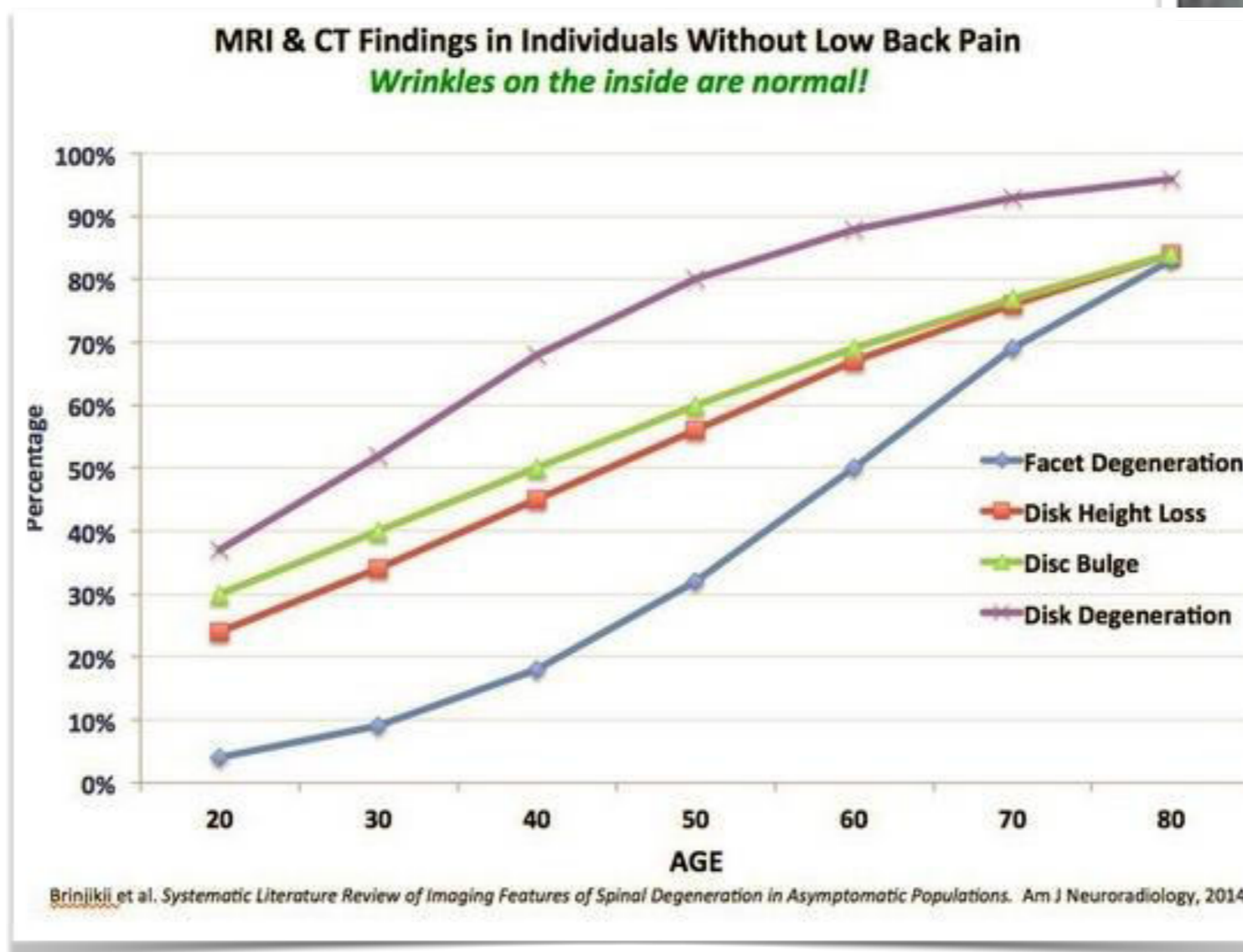
- **Severity:**

- Acute: < 6 weeks
- Chronic: > 3 mo



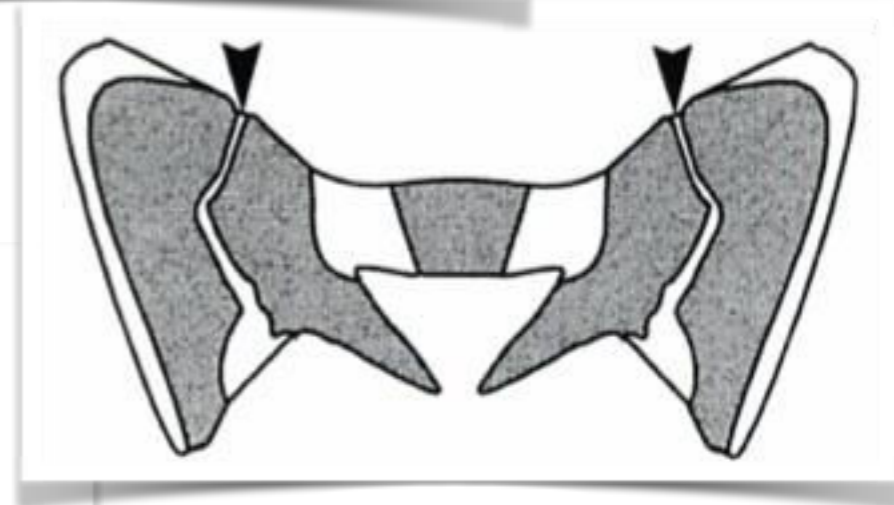
VOMIT

- Victim
- Of
- Medical
- Imaging
- Technology

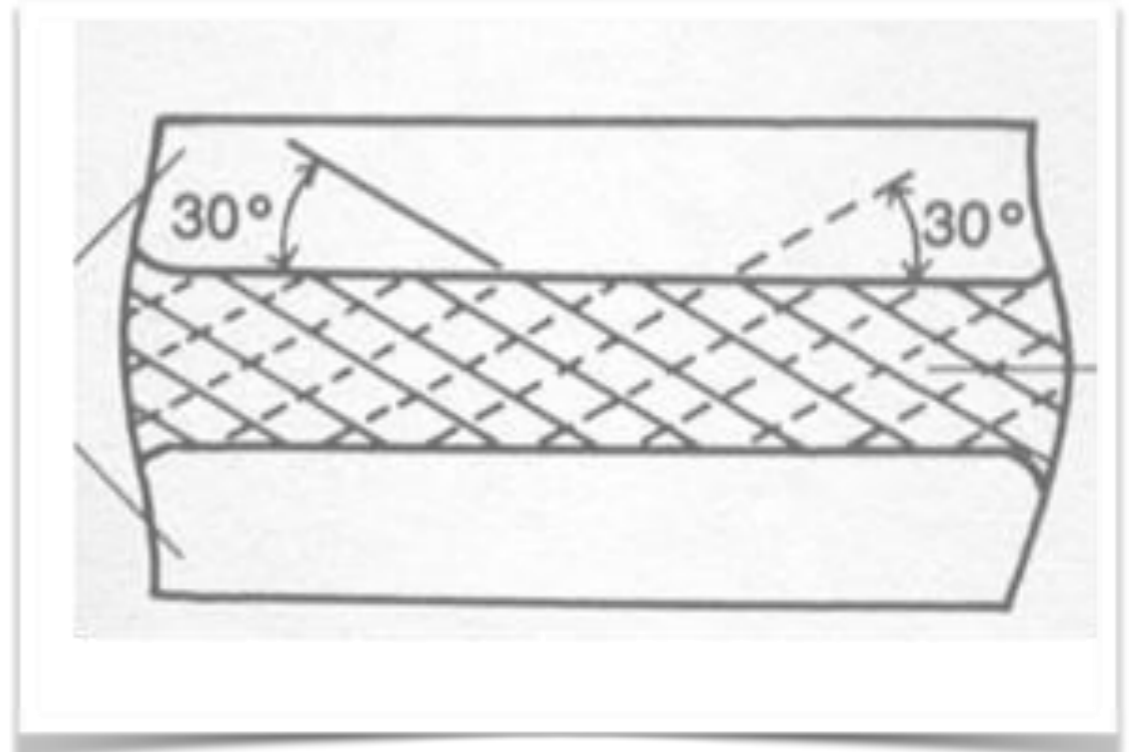
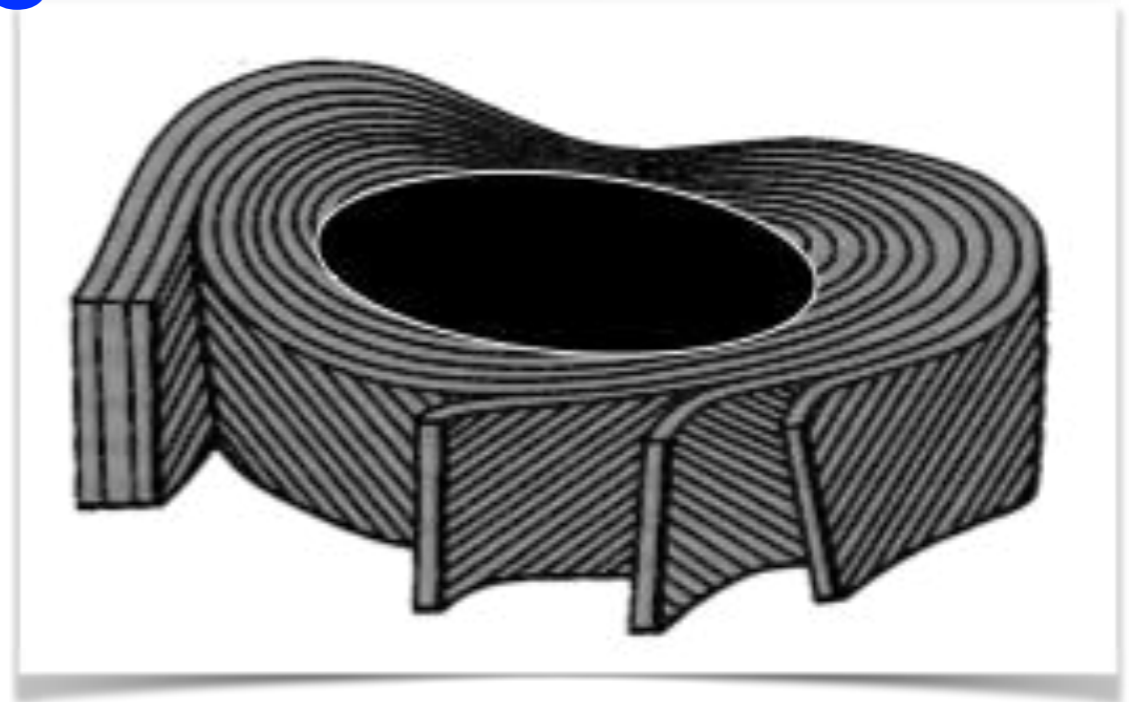
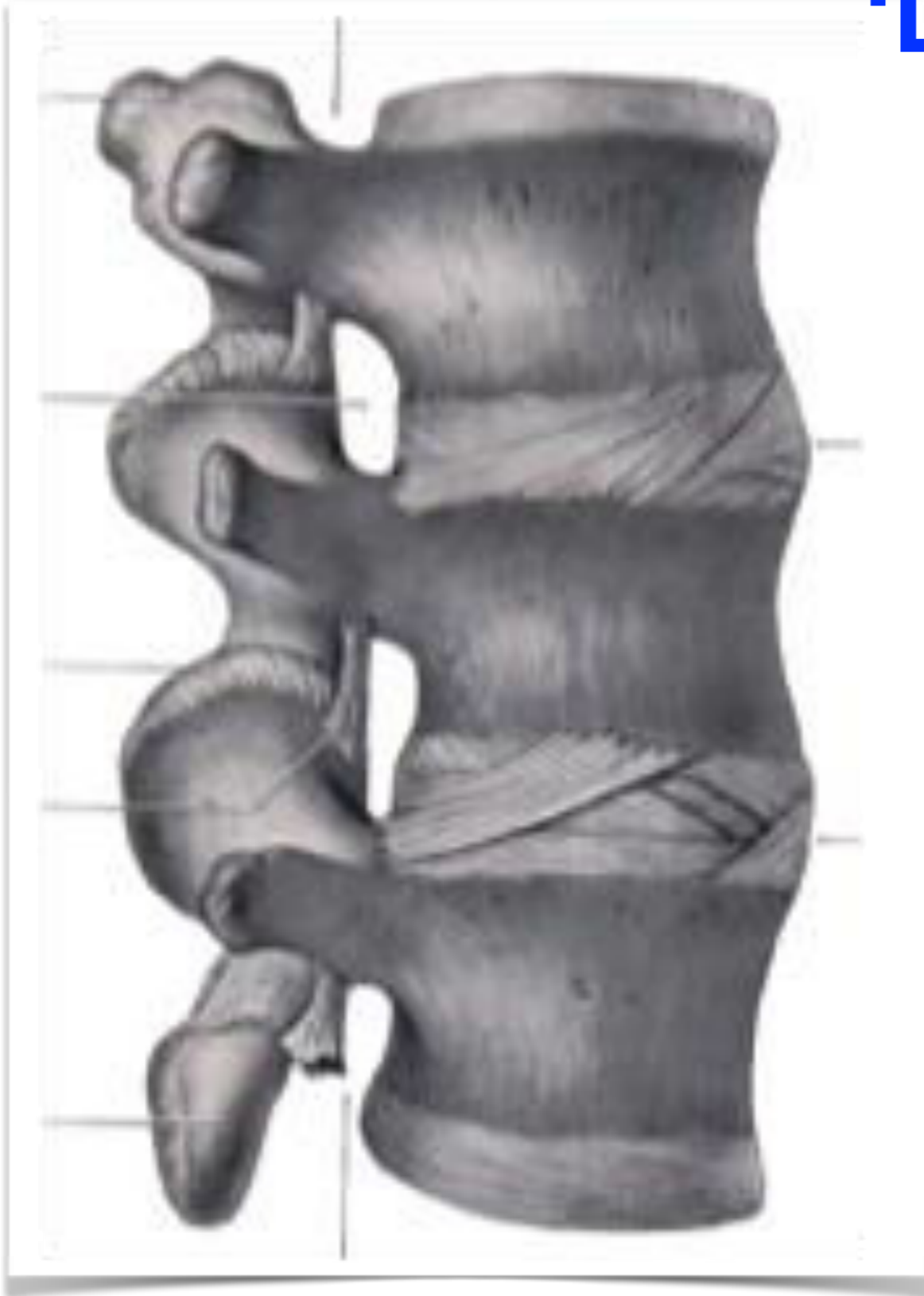


Pain generators

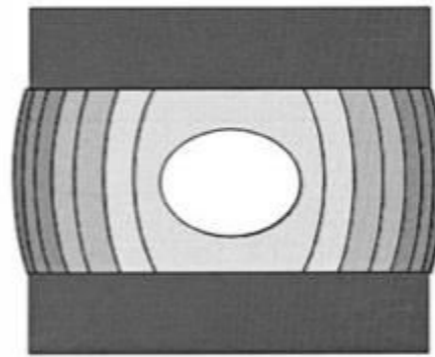
- Inter-vertebral discs
- Facet joints
- Vertebral body failure
- Spinal malalignment



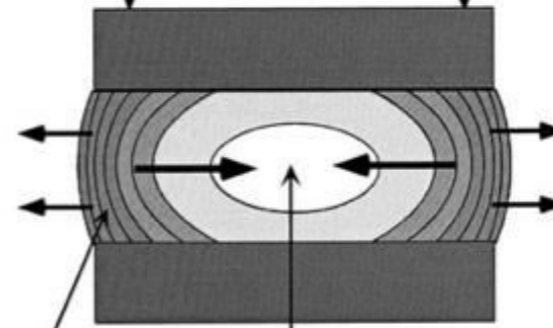
Inter-vertebral disc 'Disc'



before compression



external load

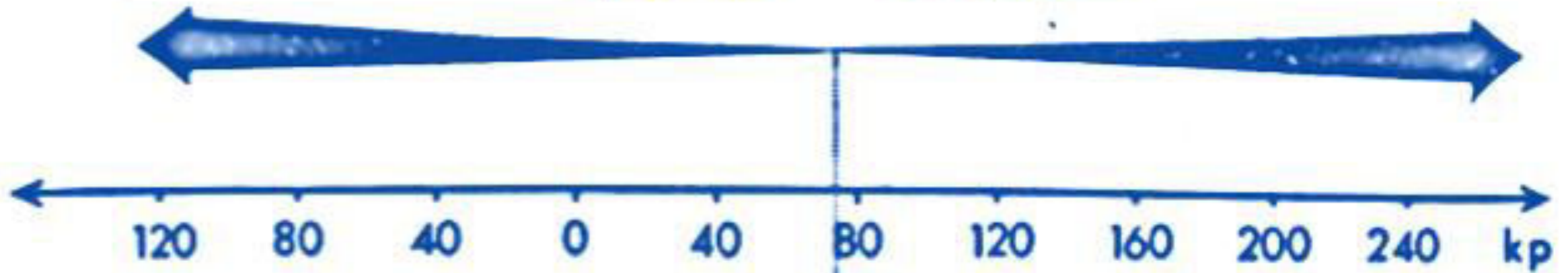


water accumulation
in the nucleus pulposus

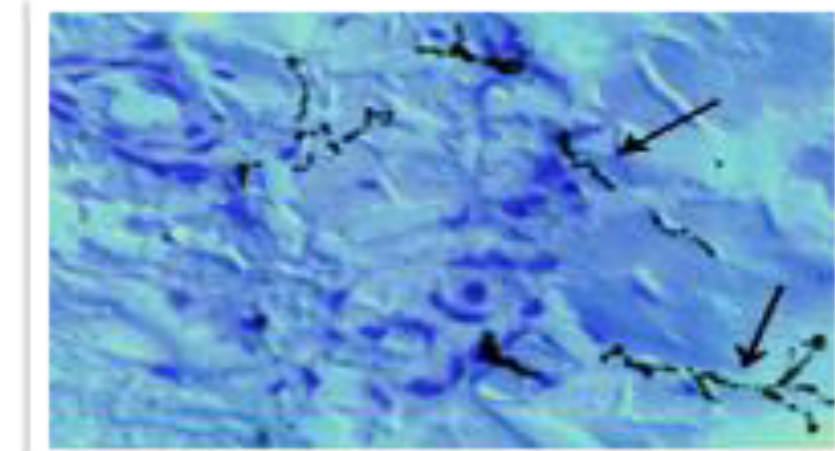
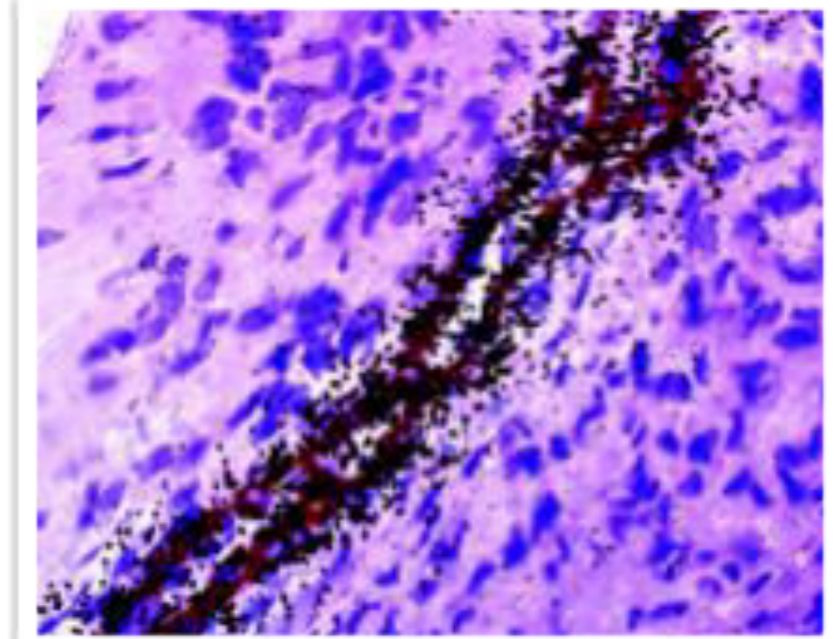
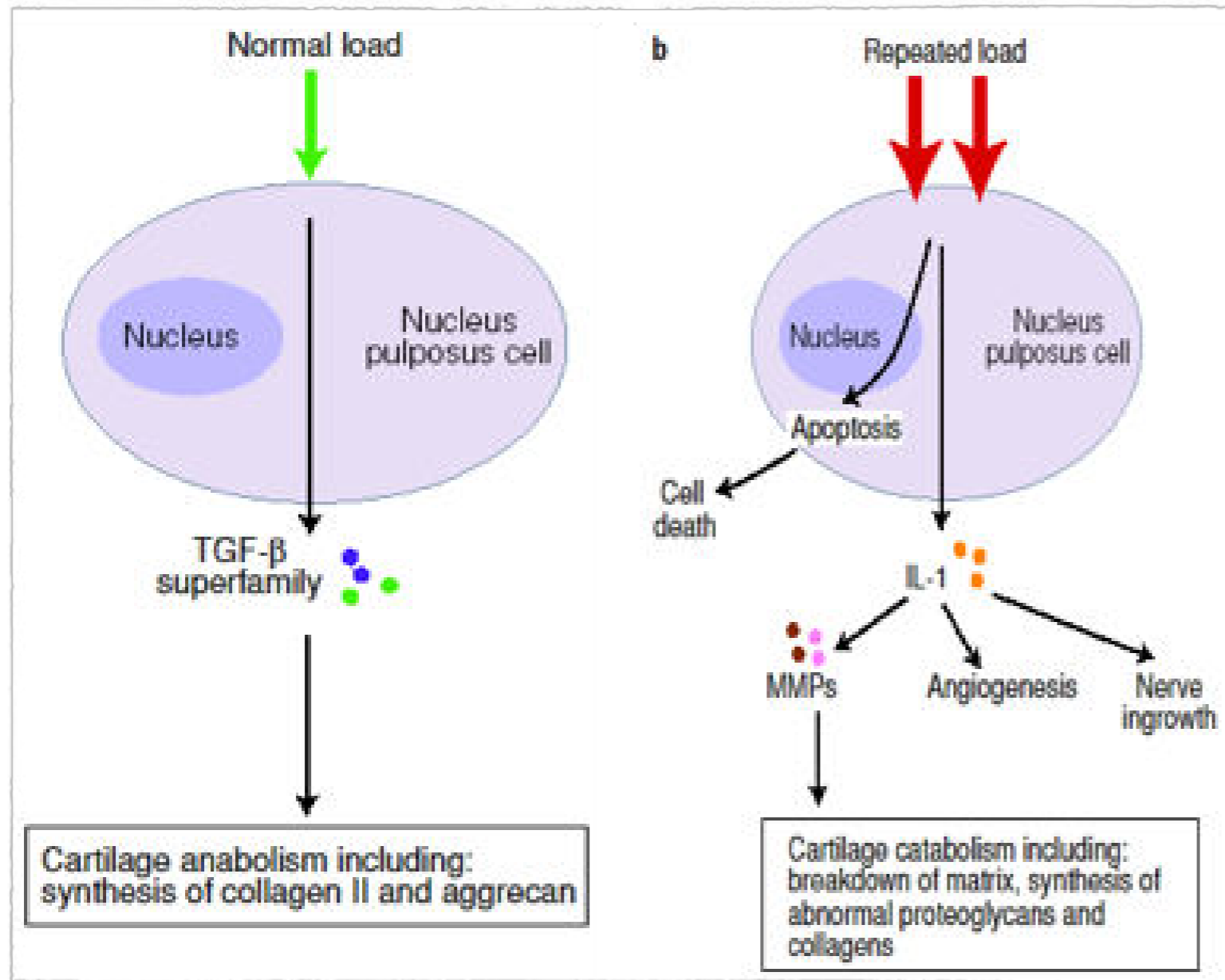
less water permeable layer

Hydration

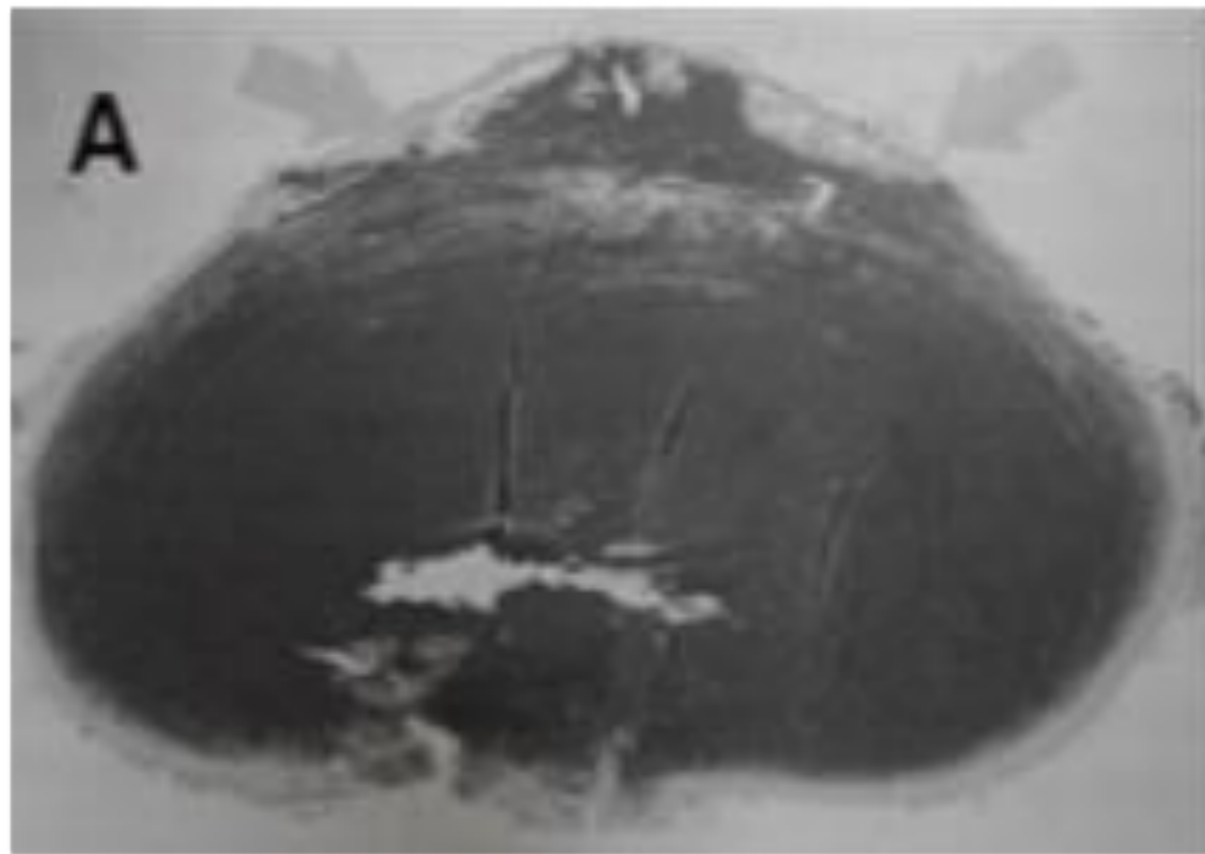
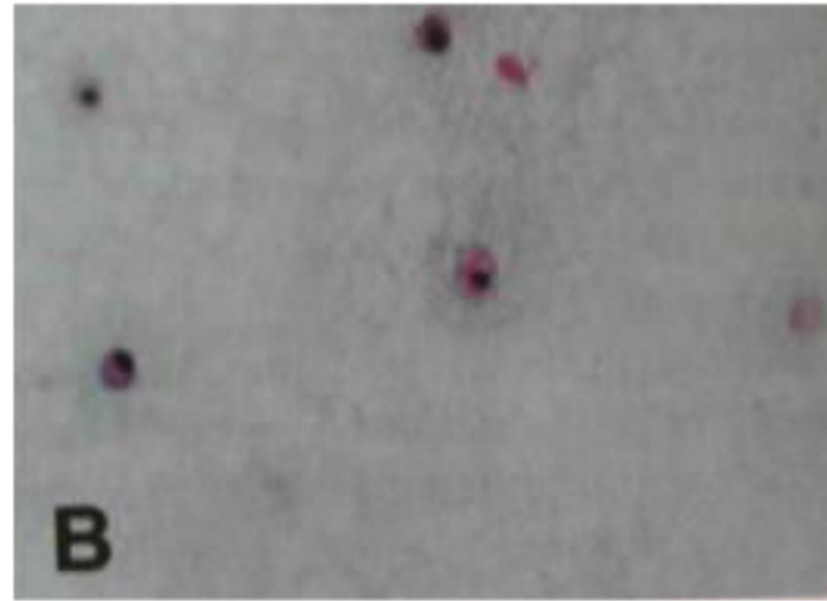
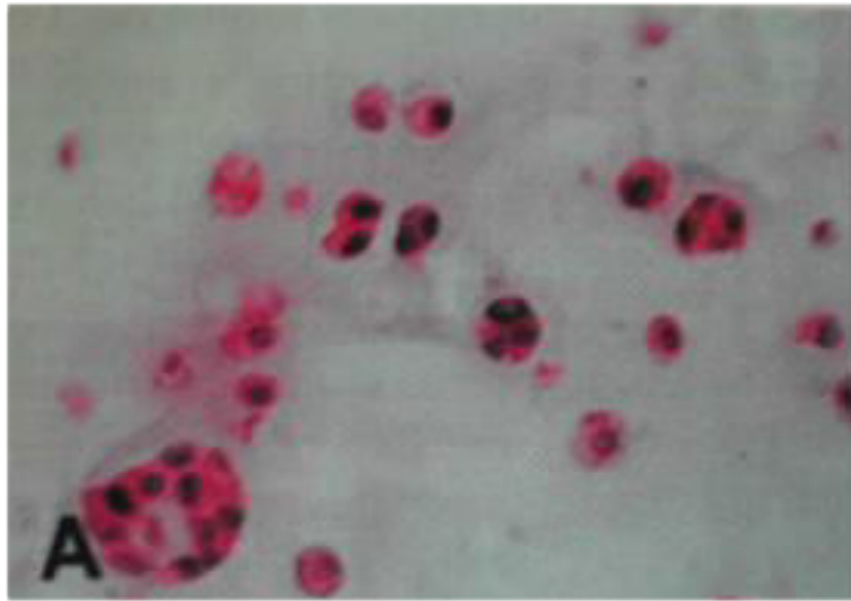
Dehydration



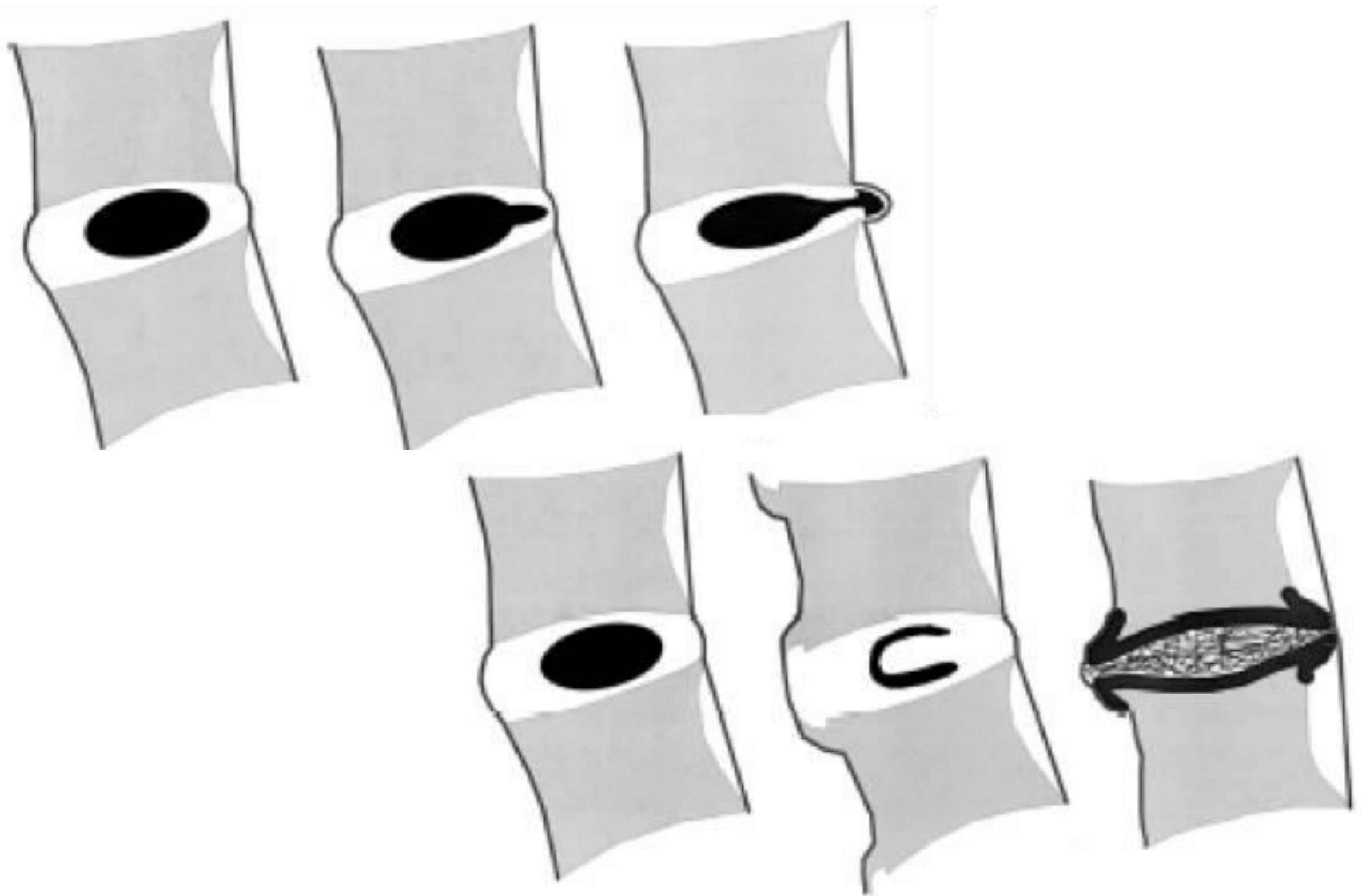
Cellular pathology leading to disc degeneration

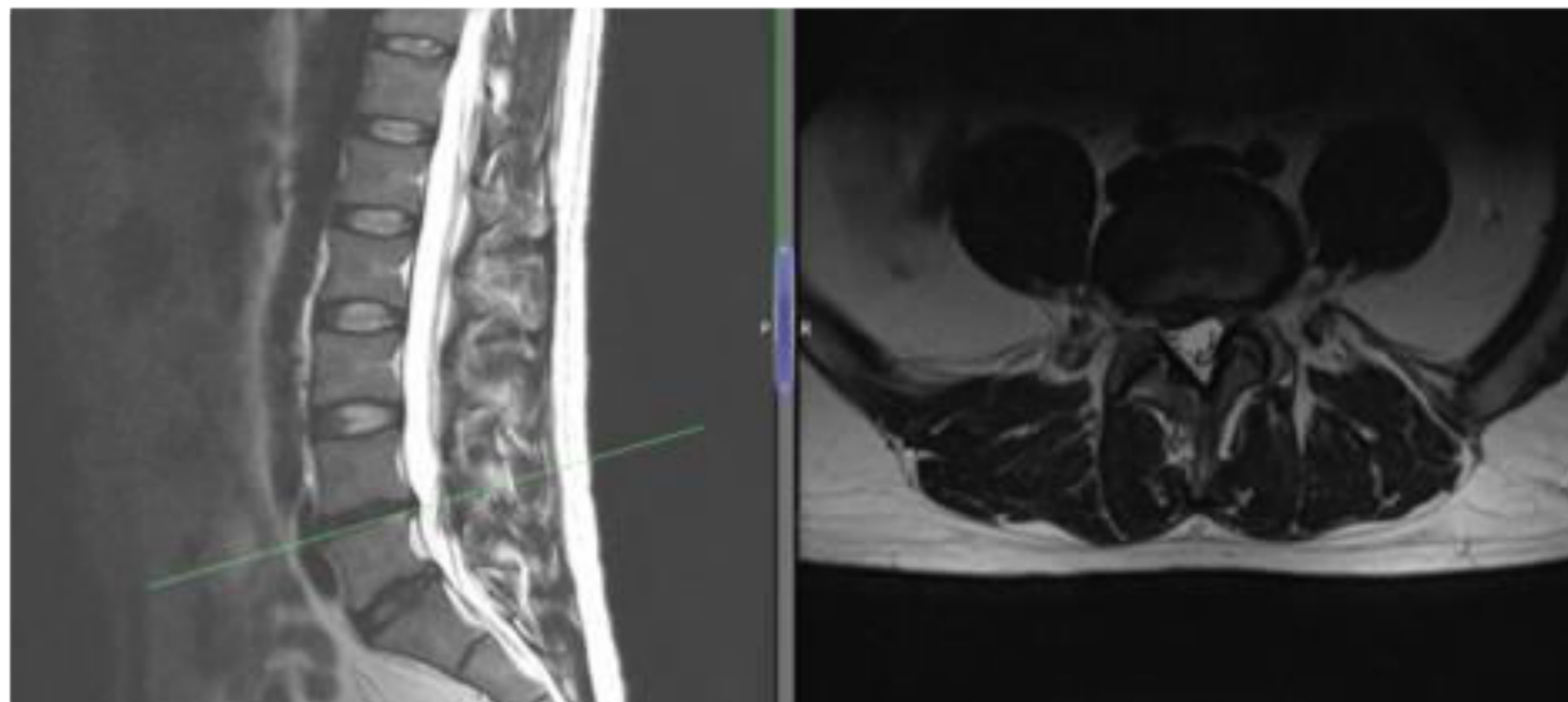
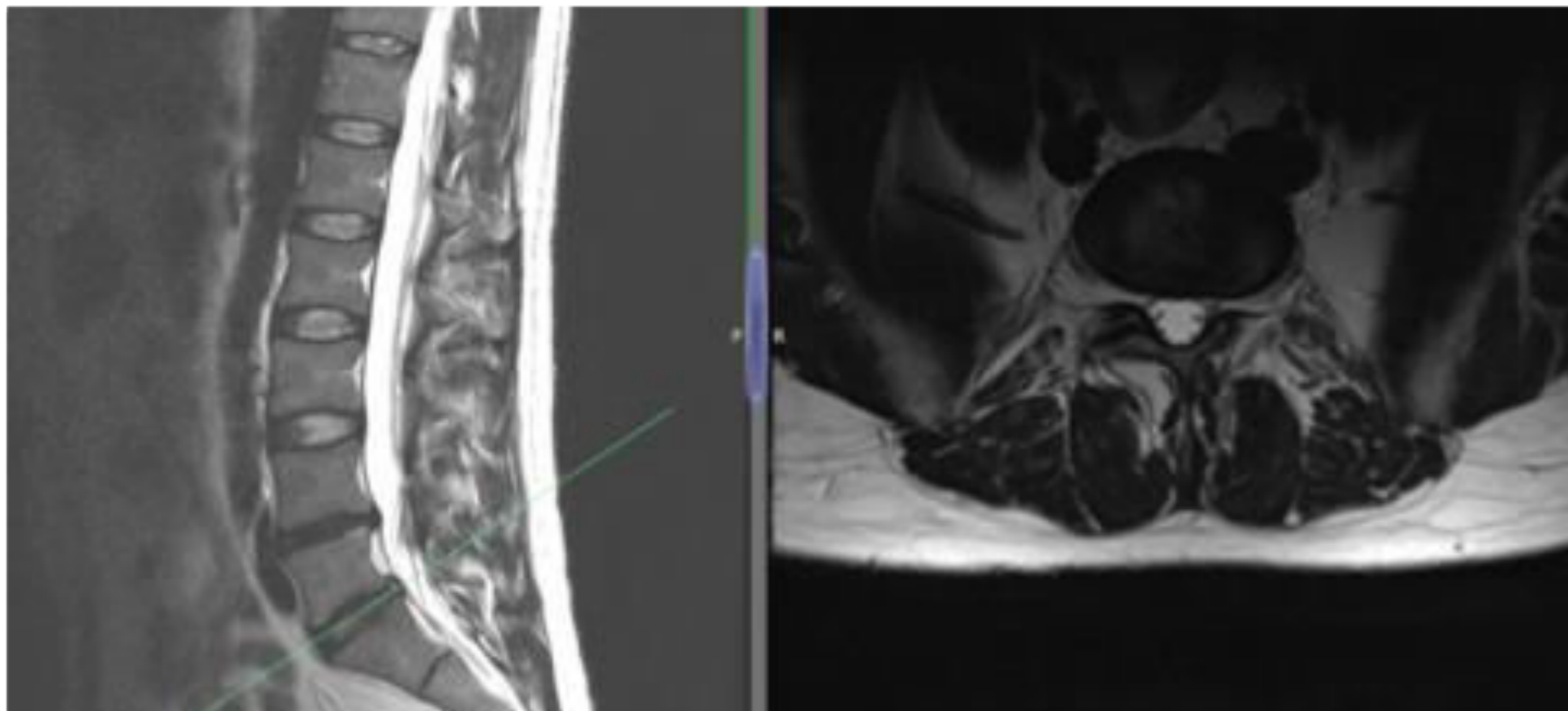


Micro & Macroscopic changes in the degenerate disc



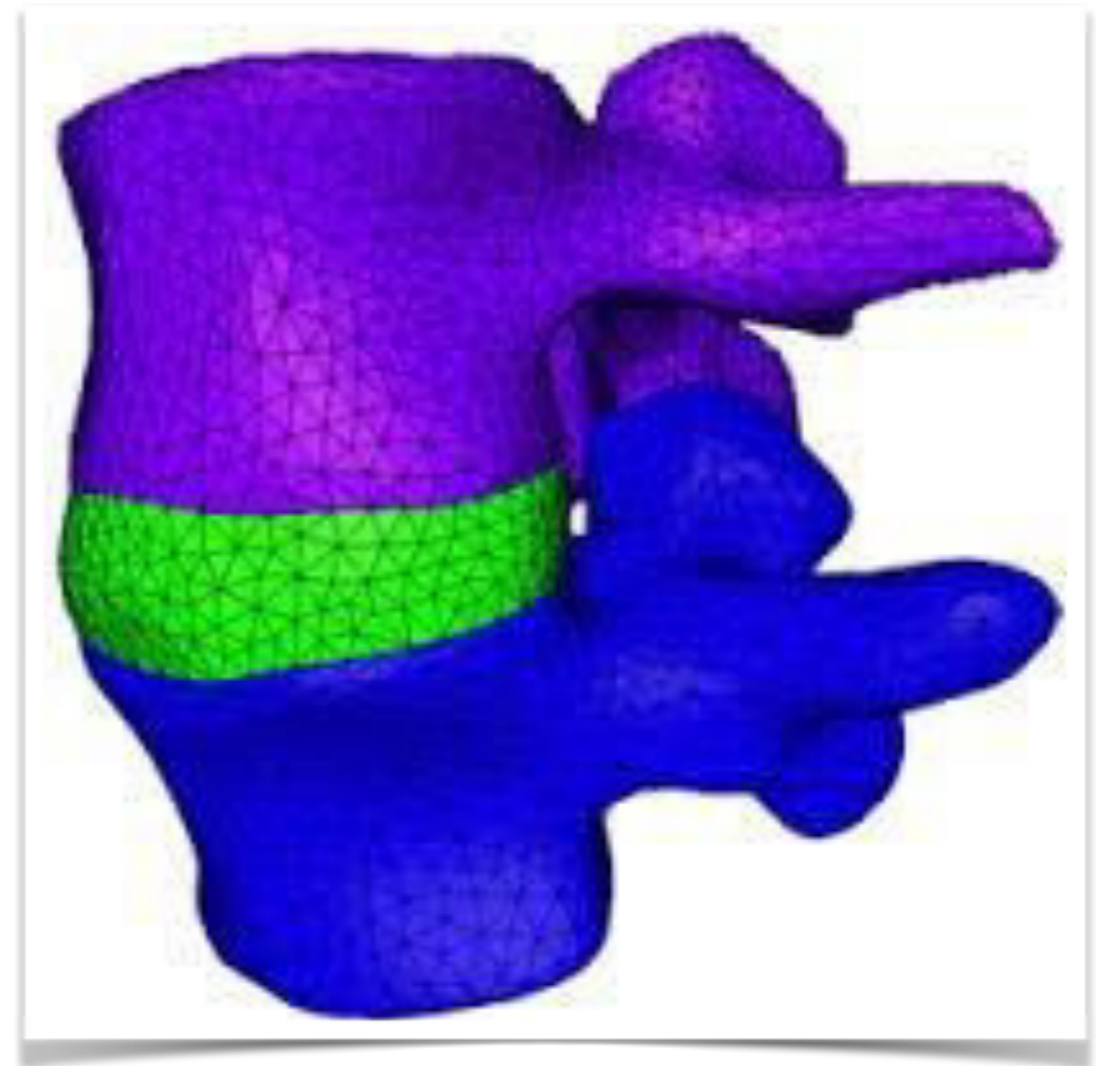
The degenerative cascade



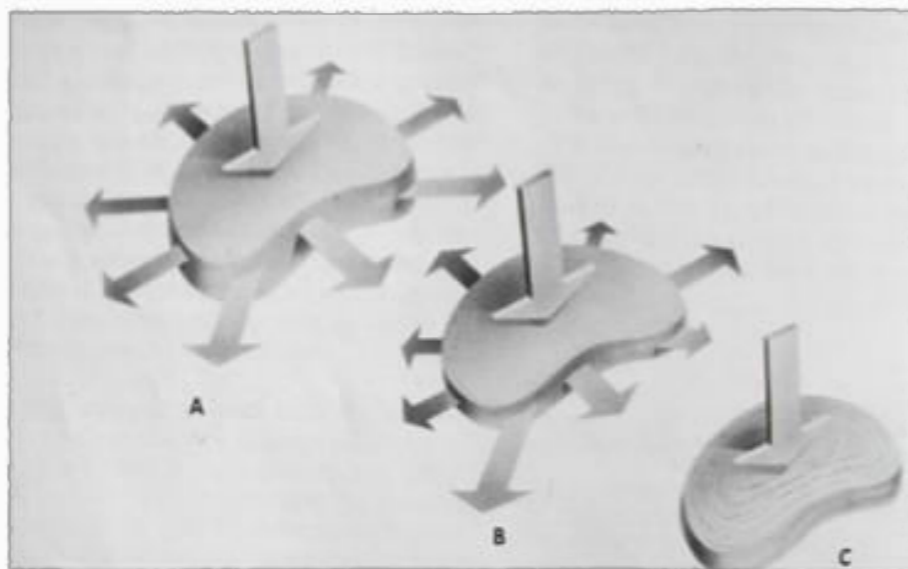
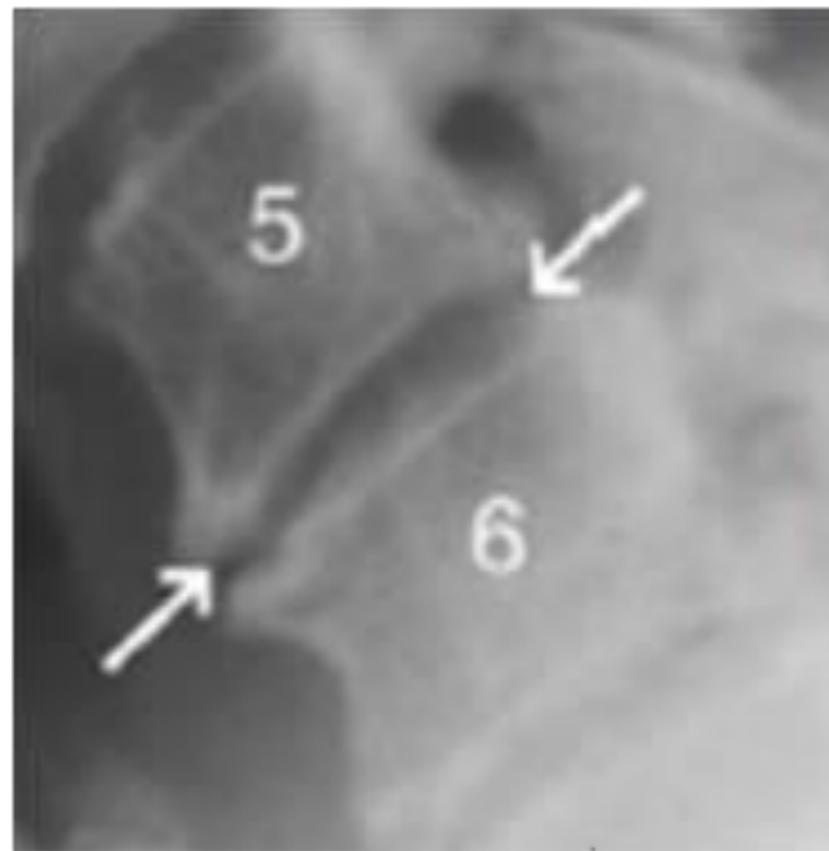
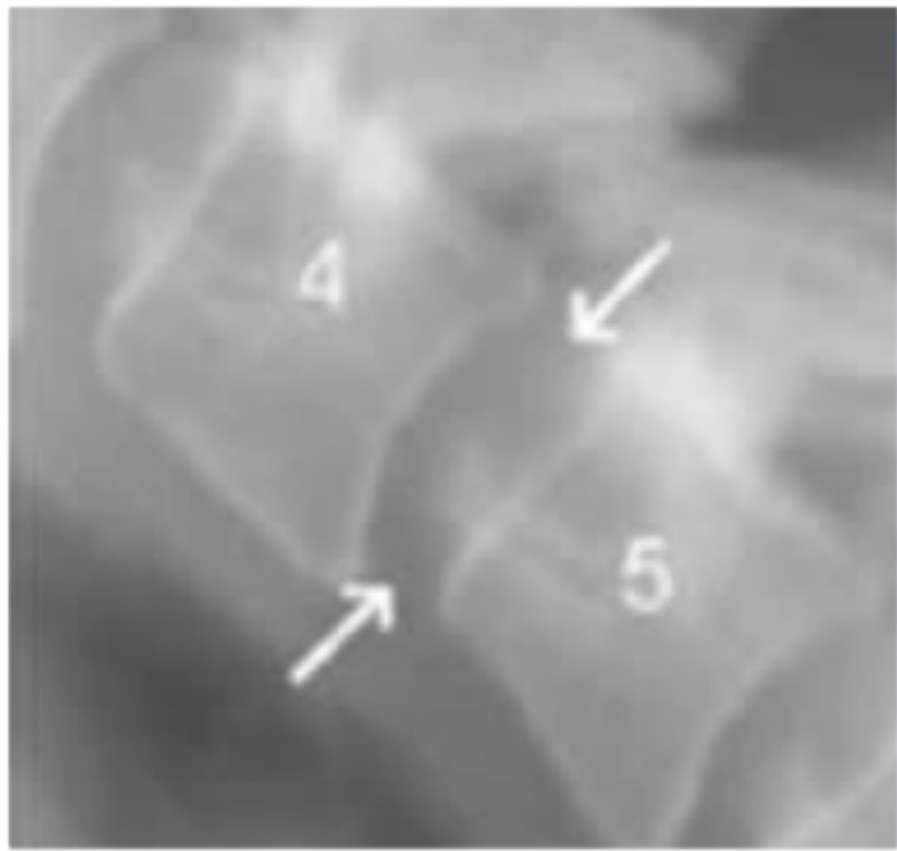


The motion segment

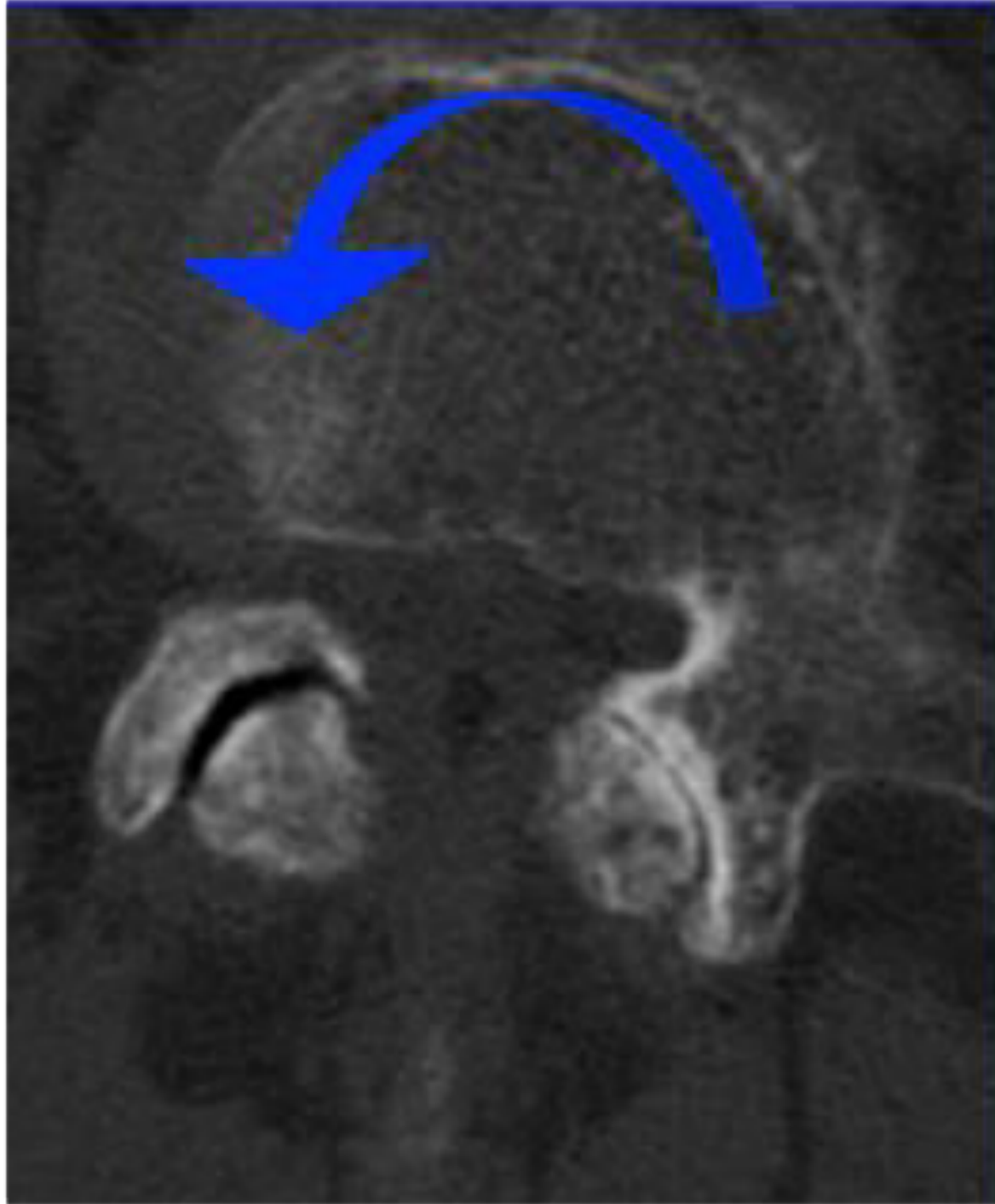
- Inter-vertebral disc
- End-plate: cartilage, bone
- Facet joints
- Passive restraints: Ligaments



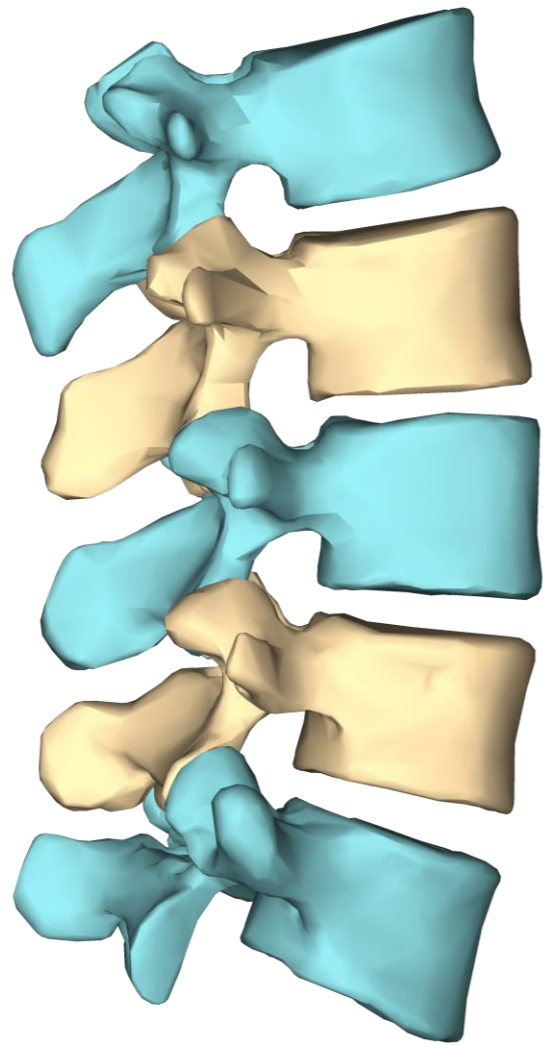
Disc height and degeneration



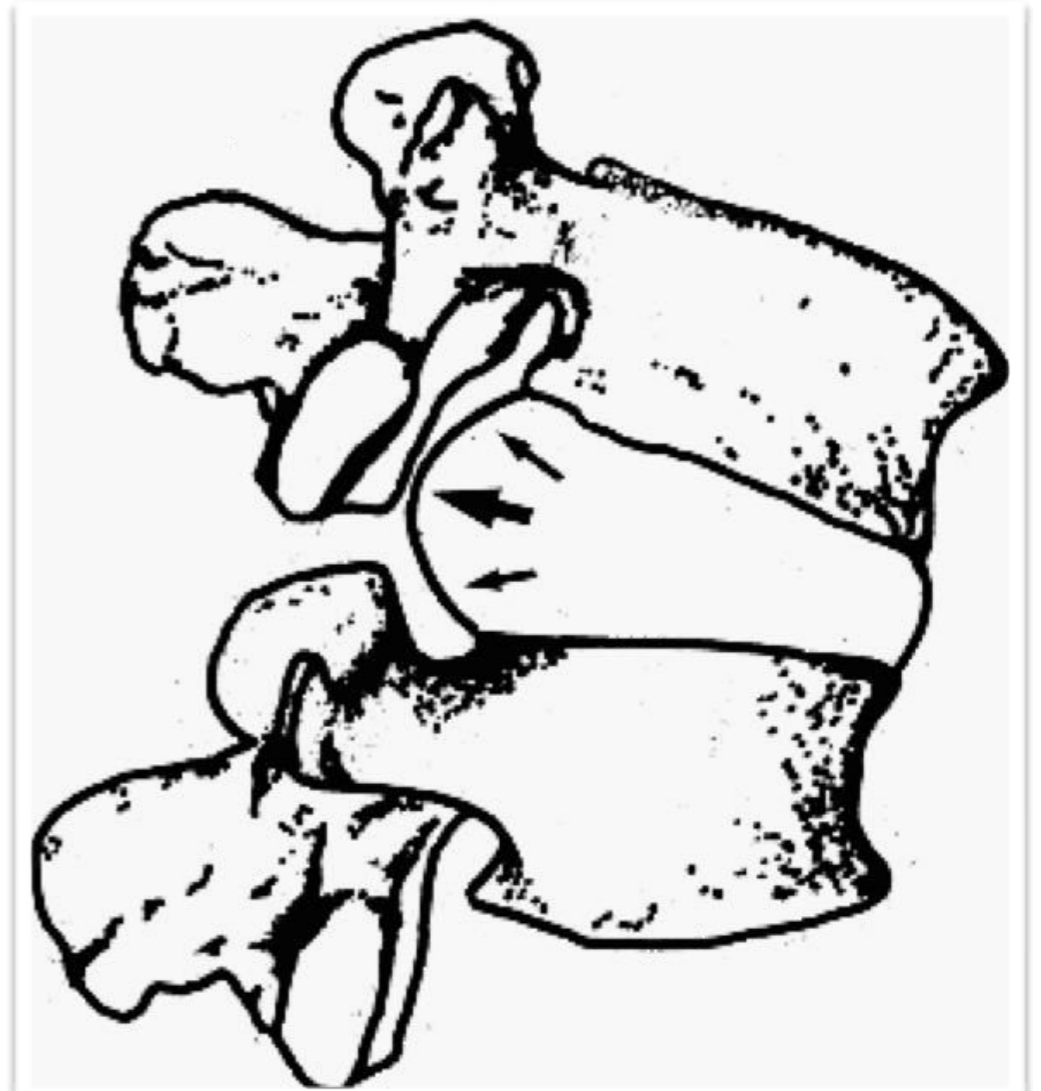
Disc v facet arthritis



Discogenic v Facetogenic

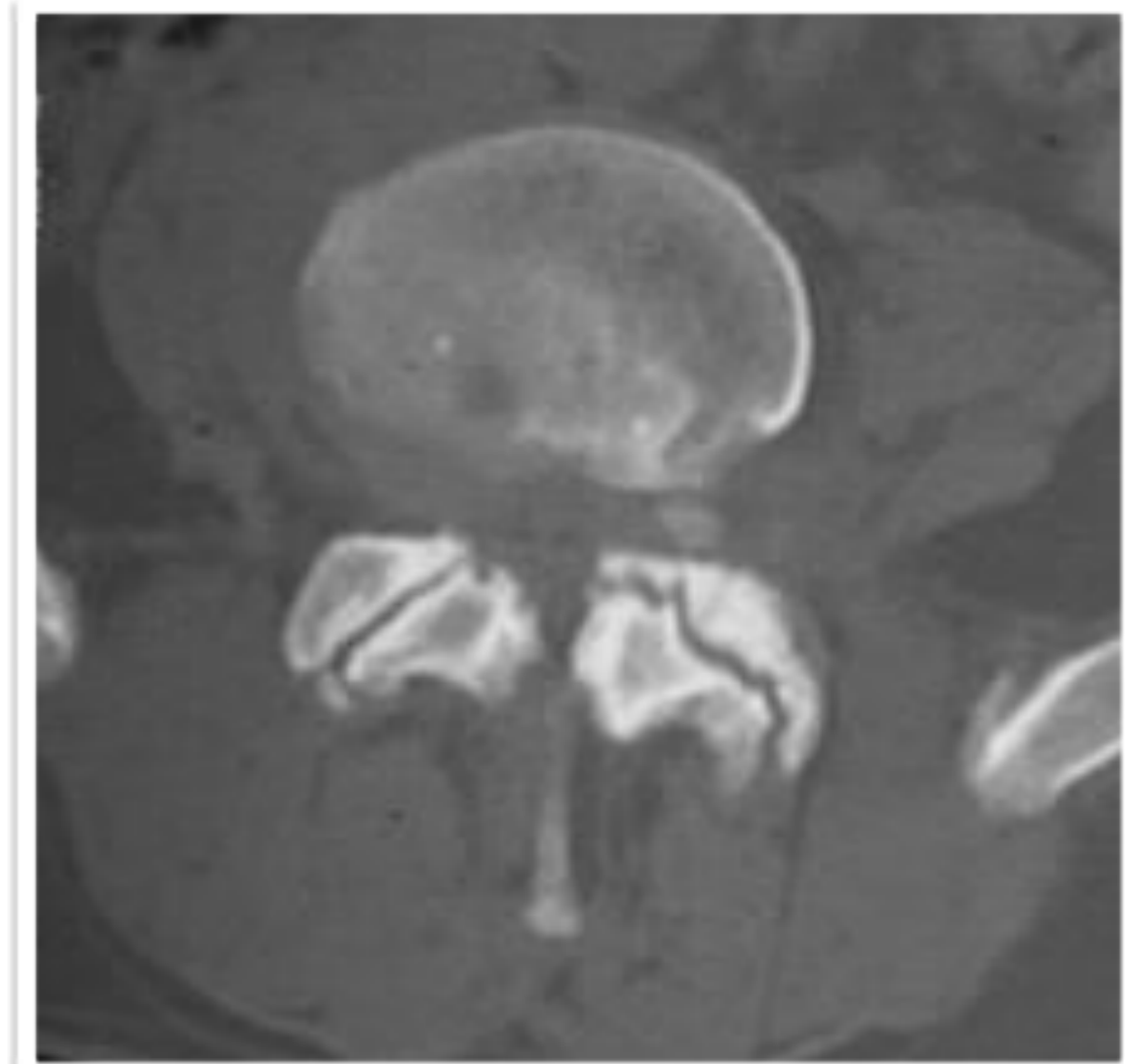
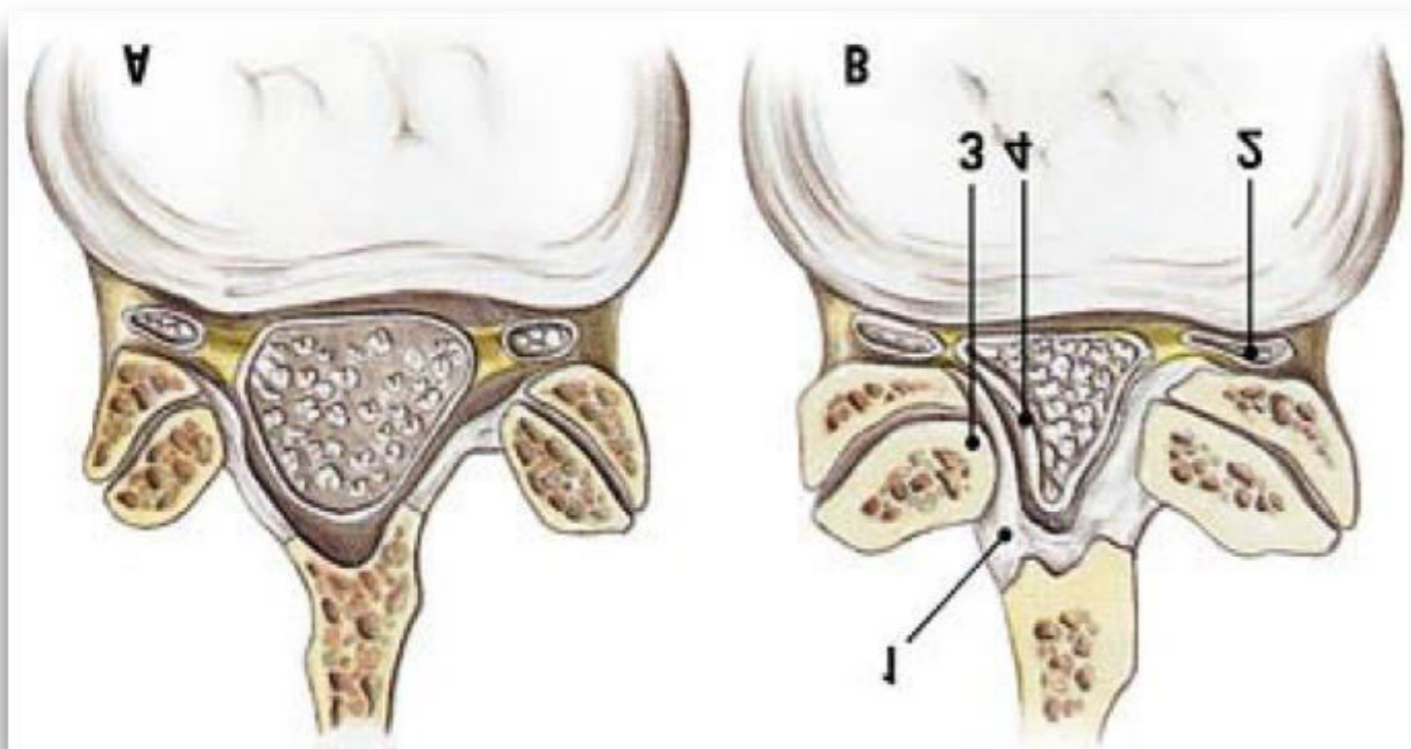


Extension



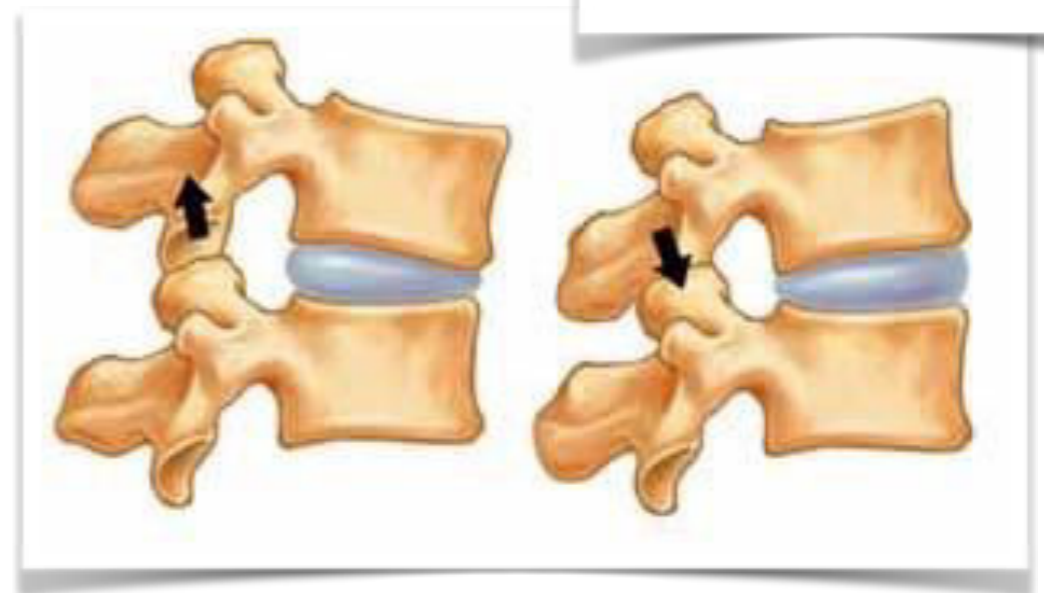
Flexion

Facet arthritis



Facetogenic back pain

- Back pain
- Thigh pain
- Worse on extension
- Pain on getting out of bed
- Pain on arising from sitting

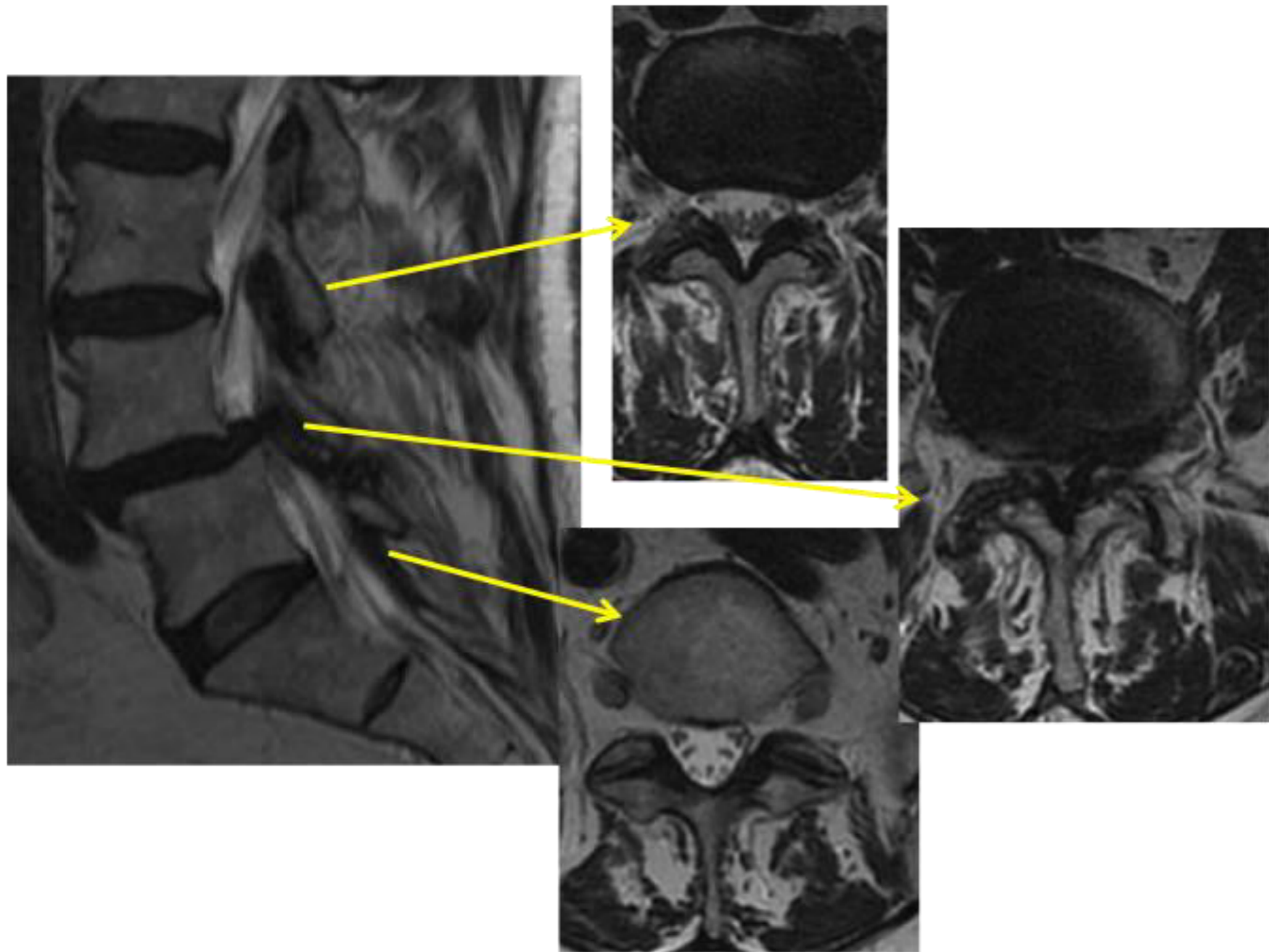


Lumbar canal stenosis

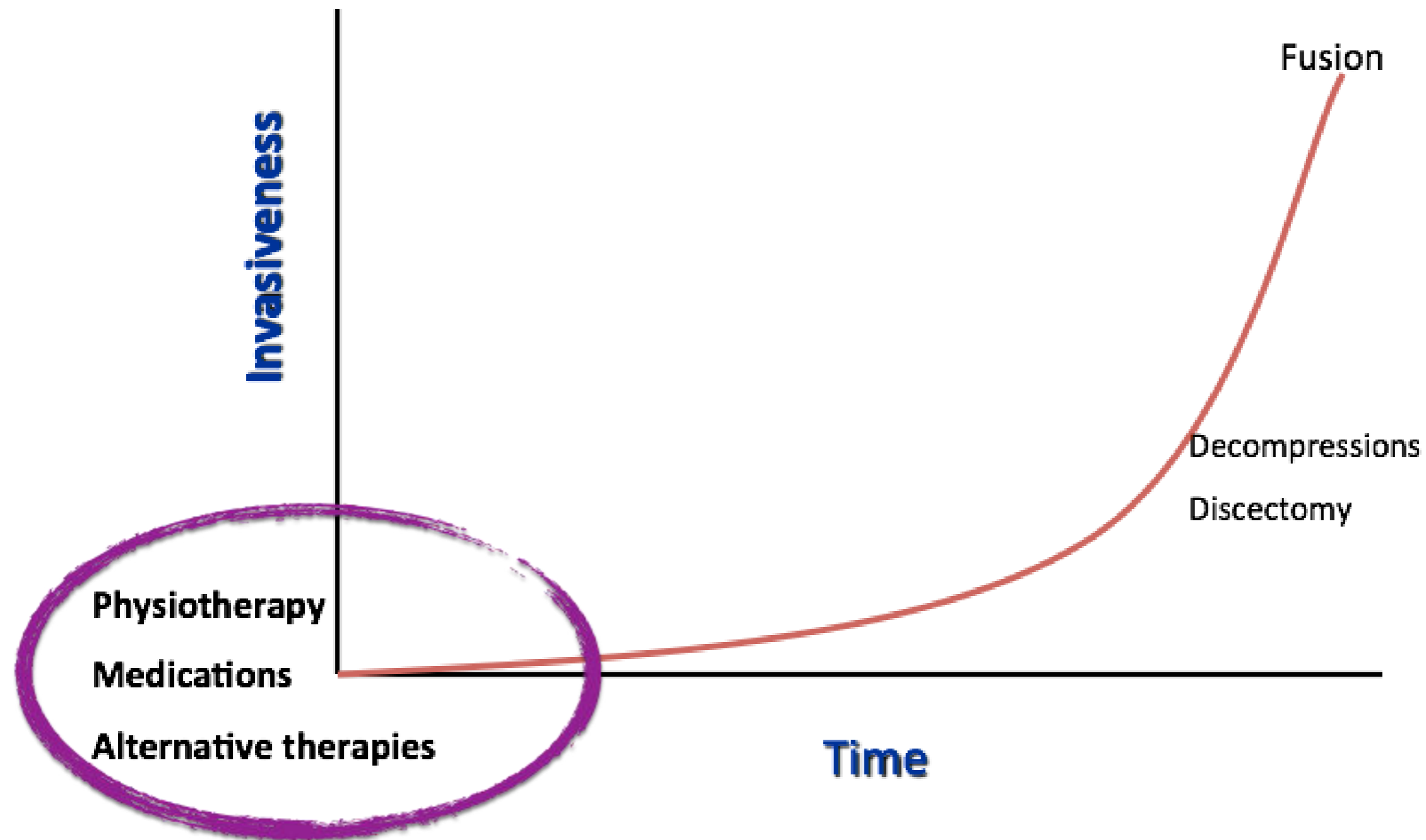
- Narrowing of the spinal canal
- Neural compression
- Directional compression
- Constitutional shape



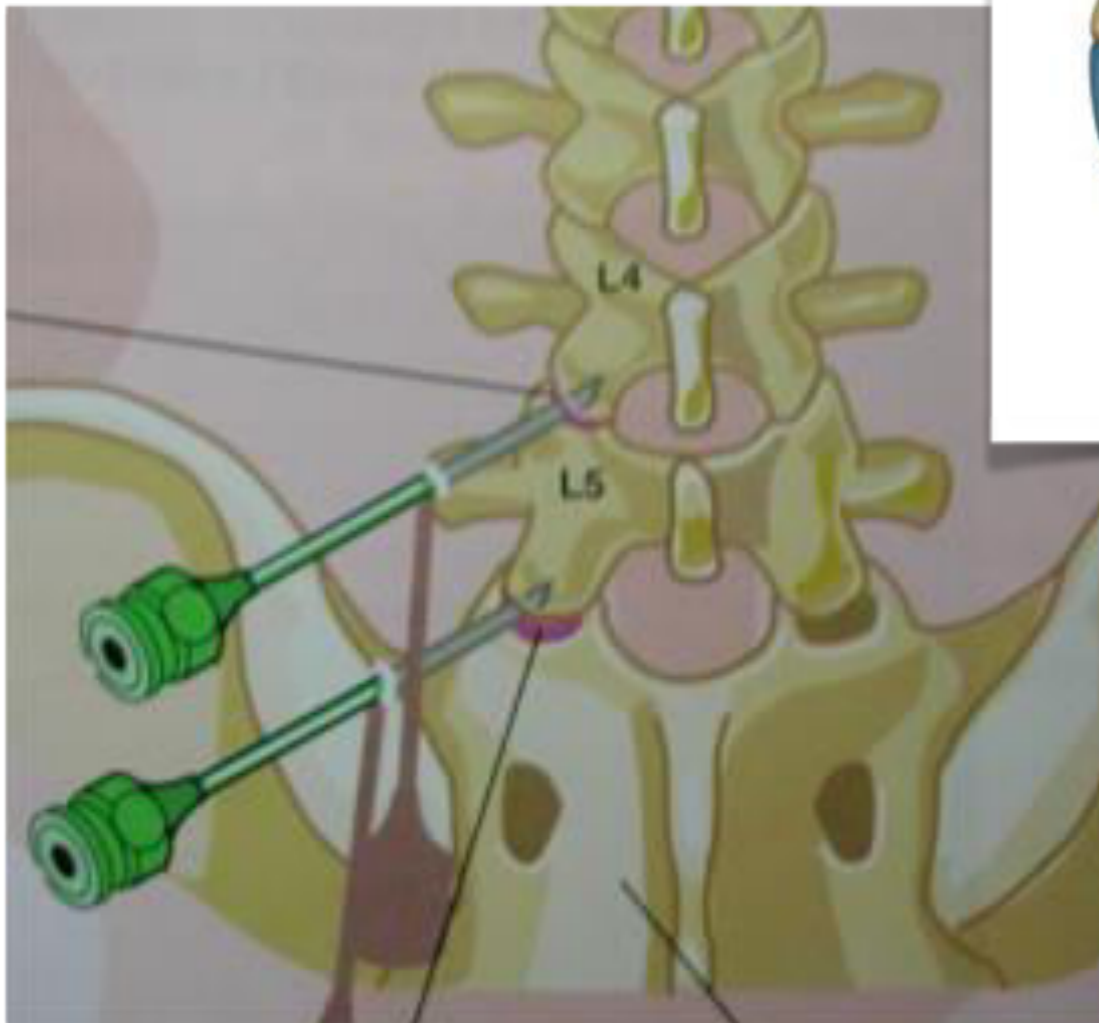
Degenerate spondylolisthesis



Treatment options

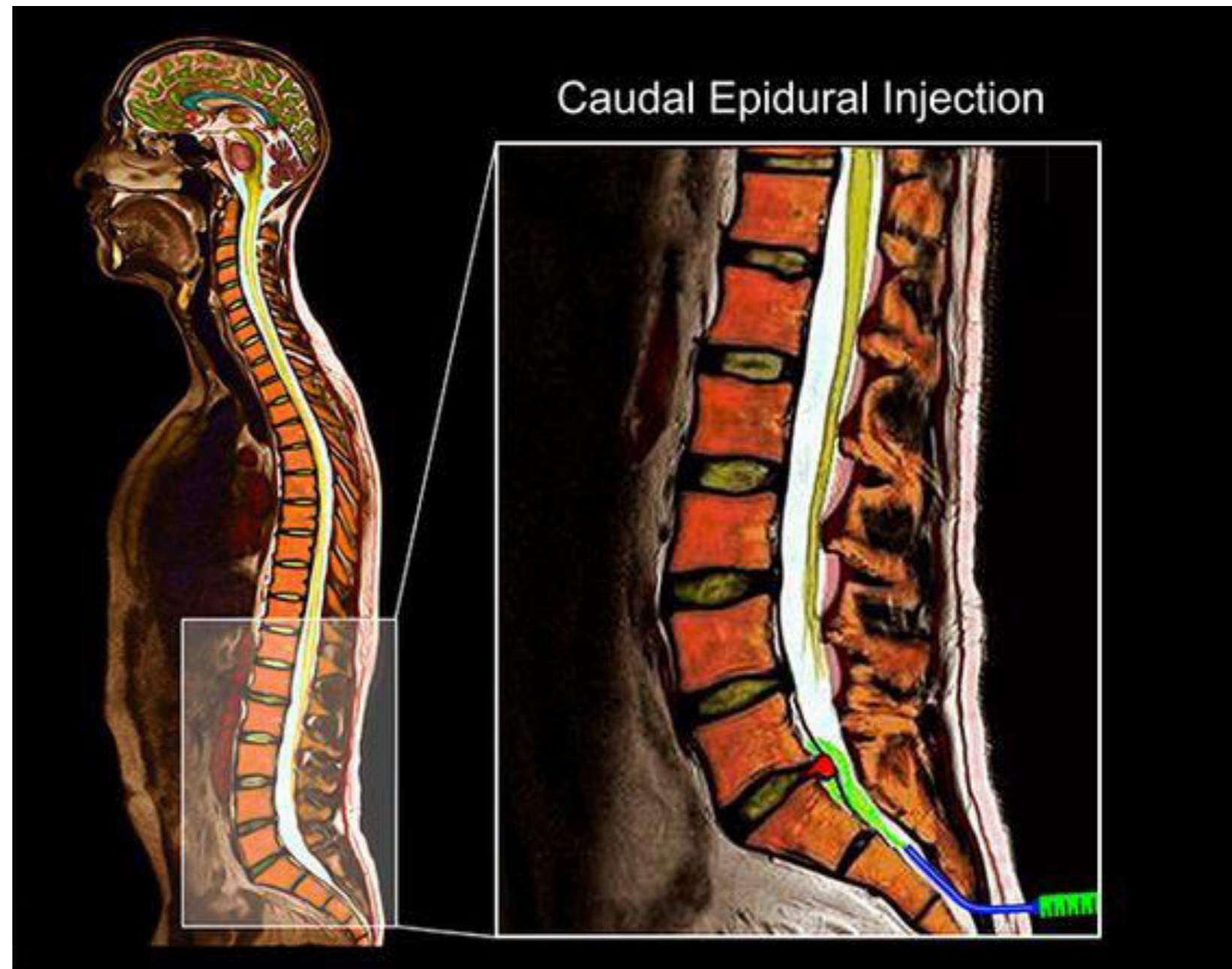
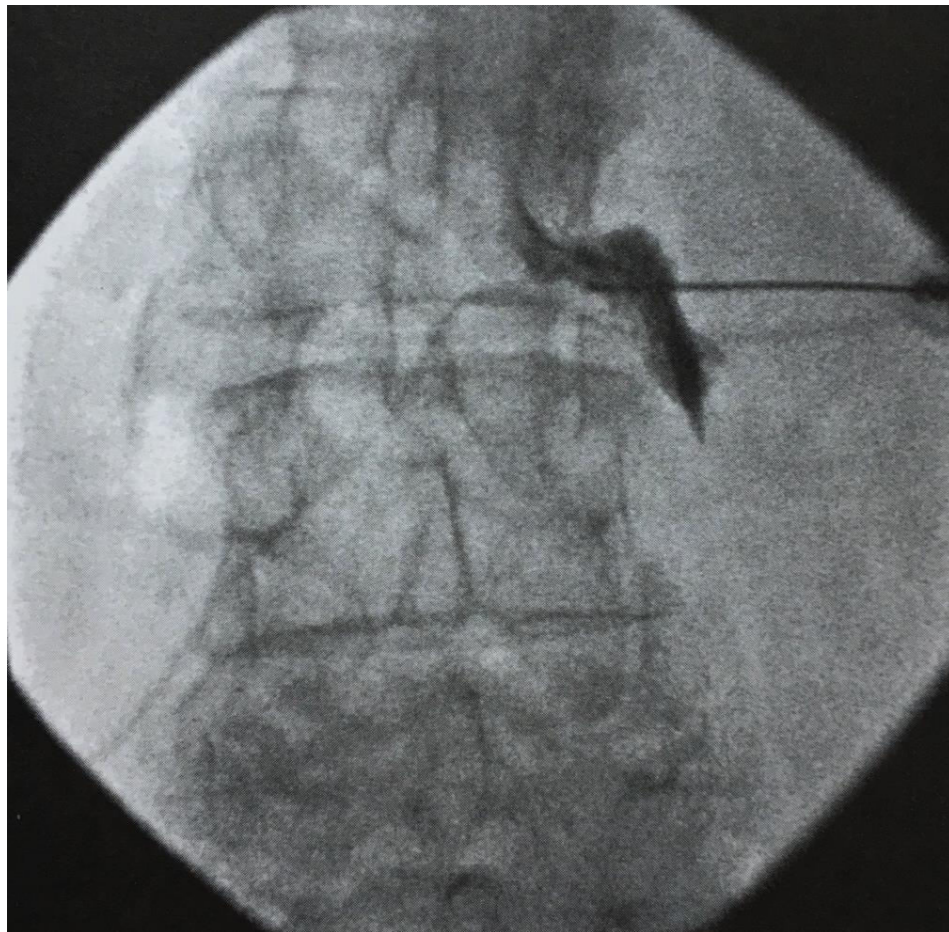
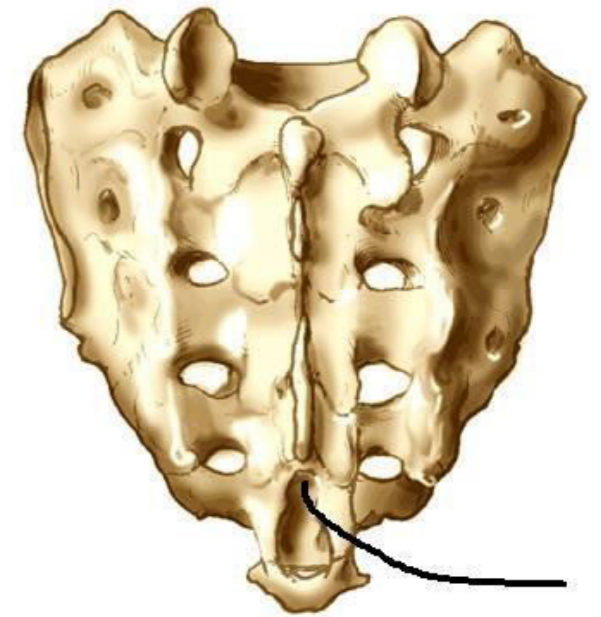


Facet joint blocks

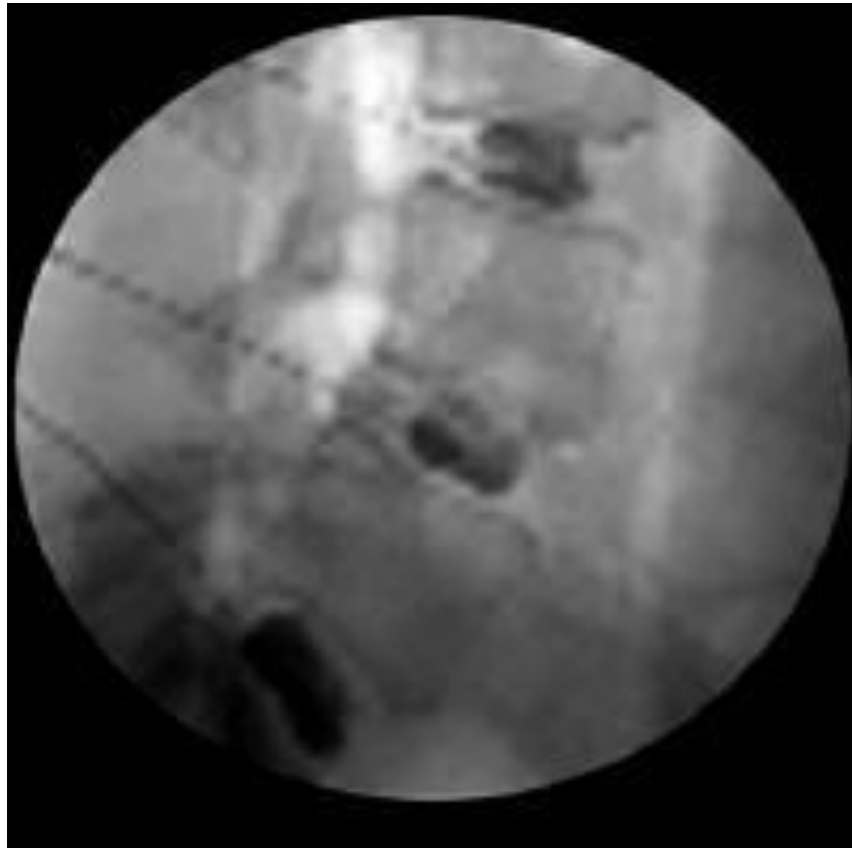
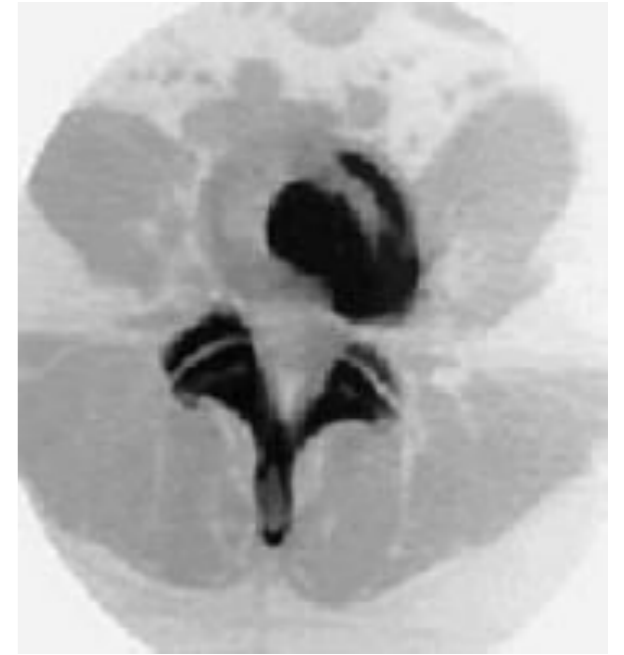
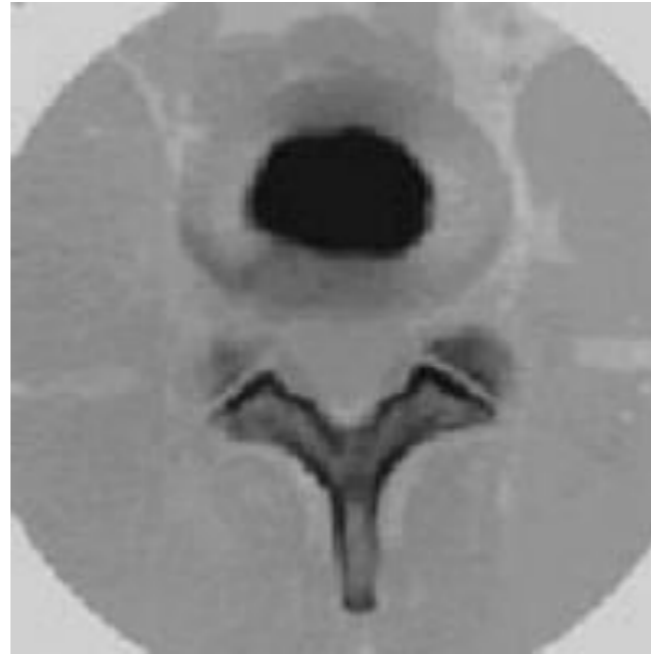


Nerve root blocks

Epidural injections



Discography

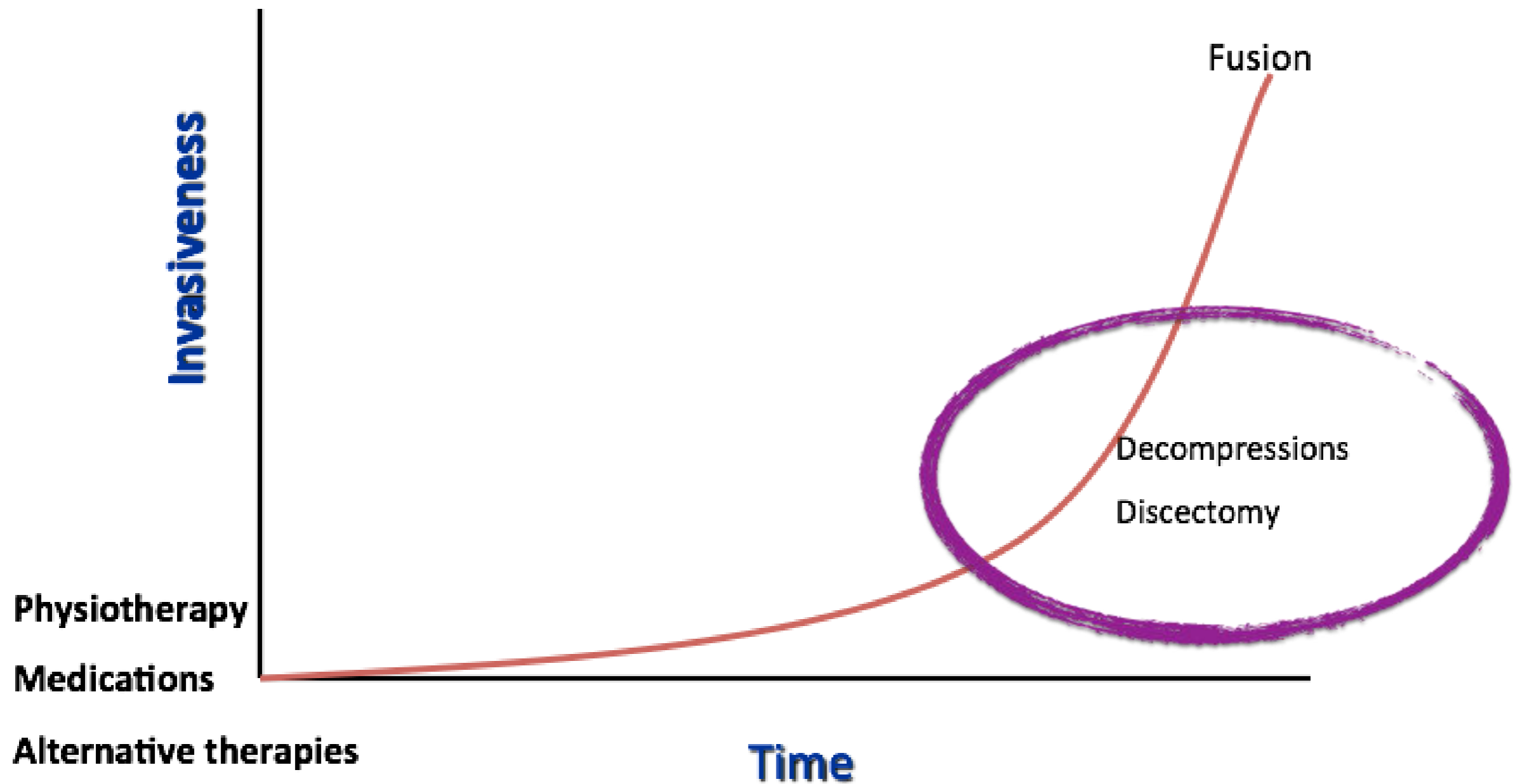




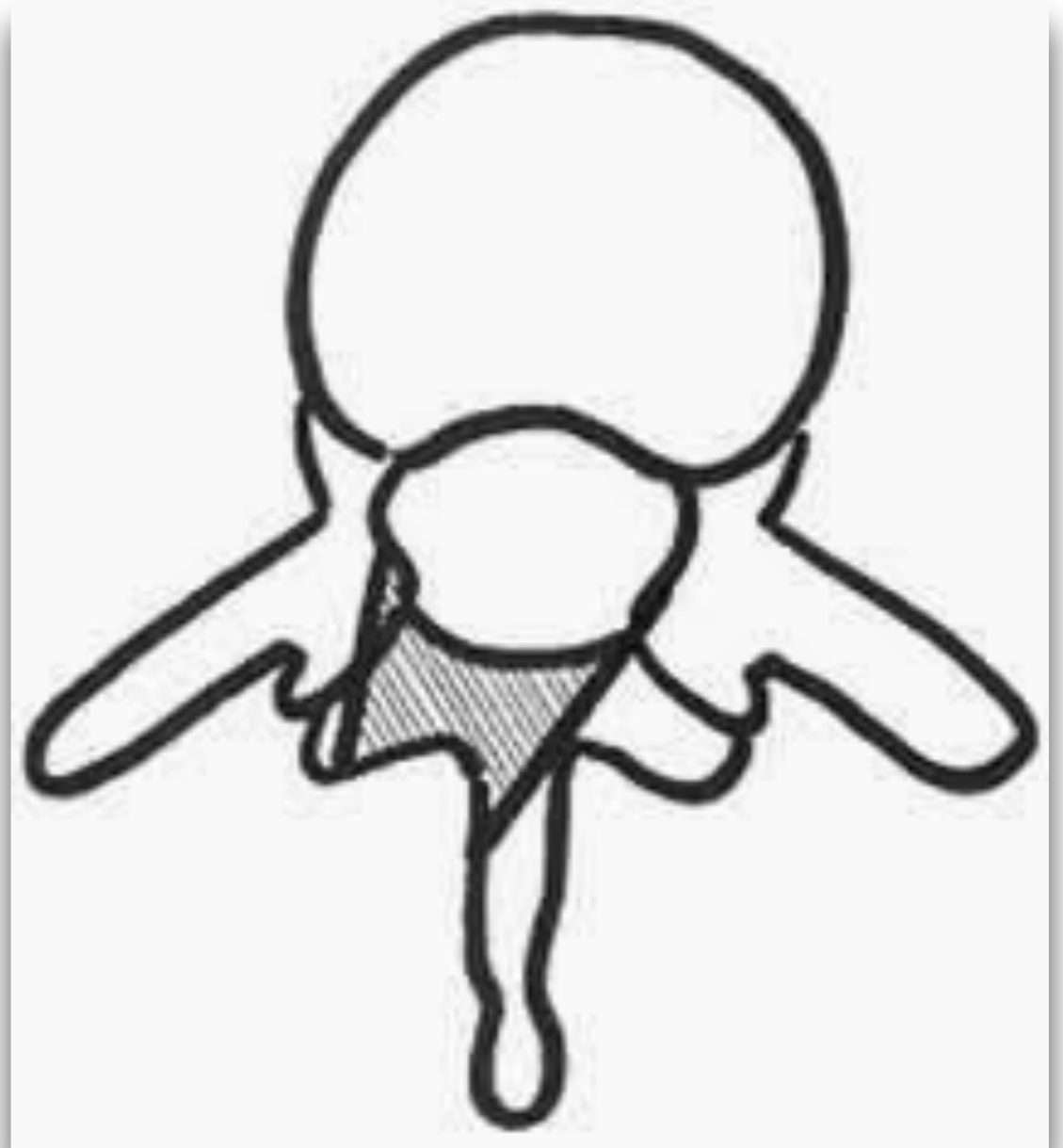
Never too early!

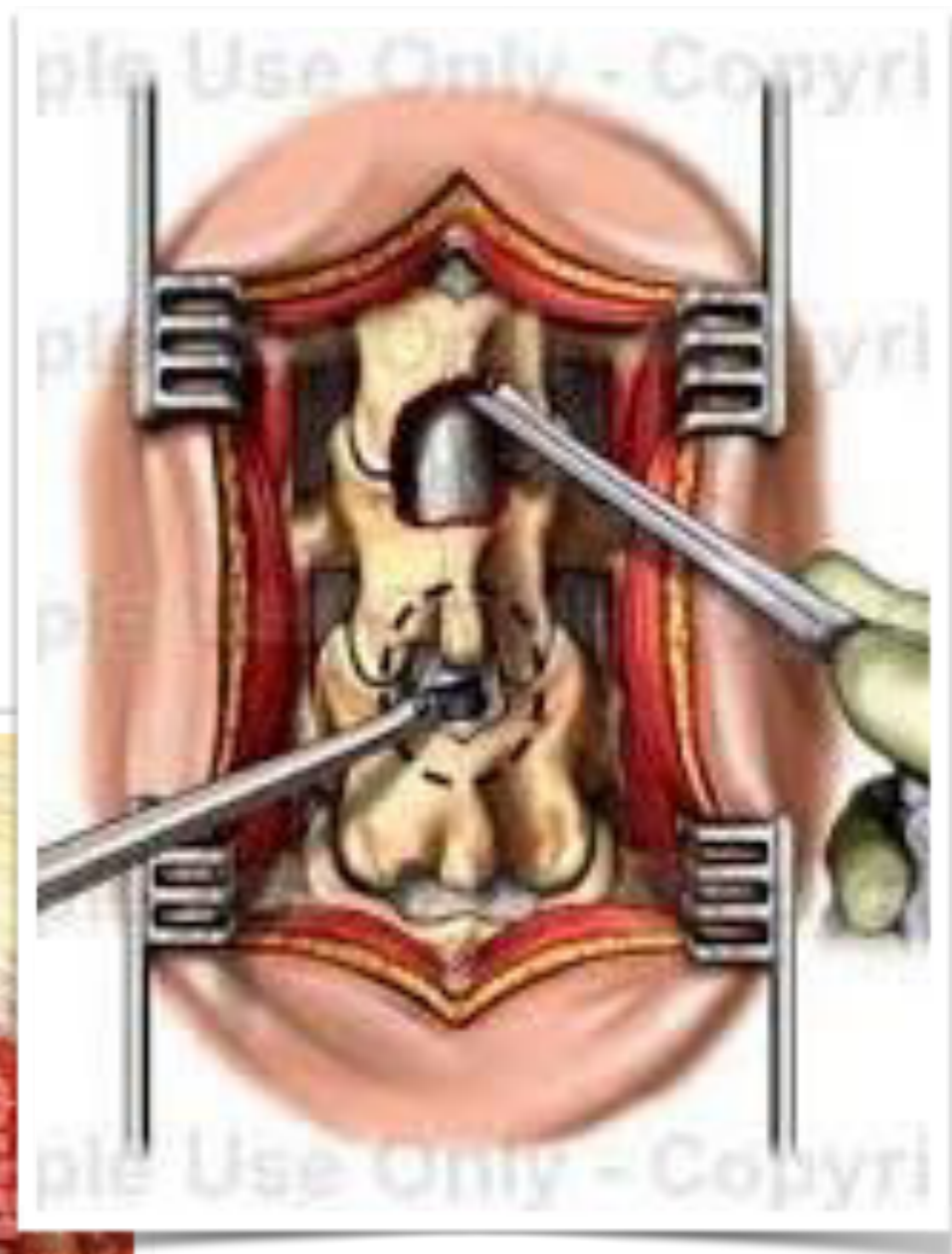
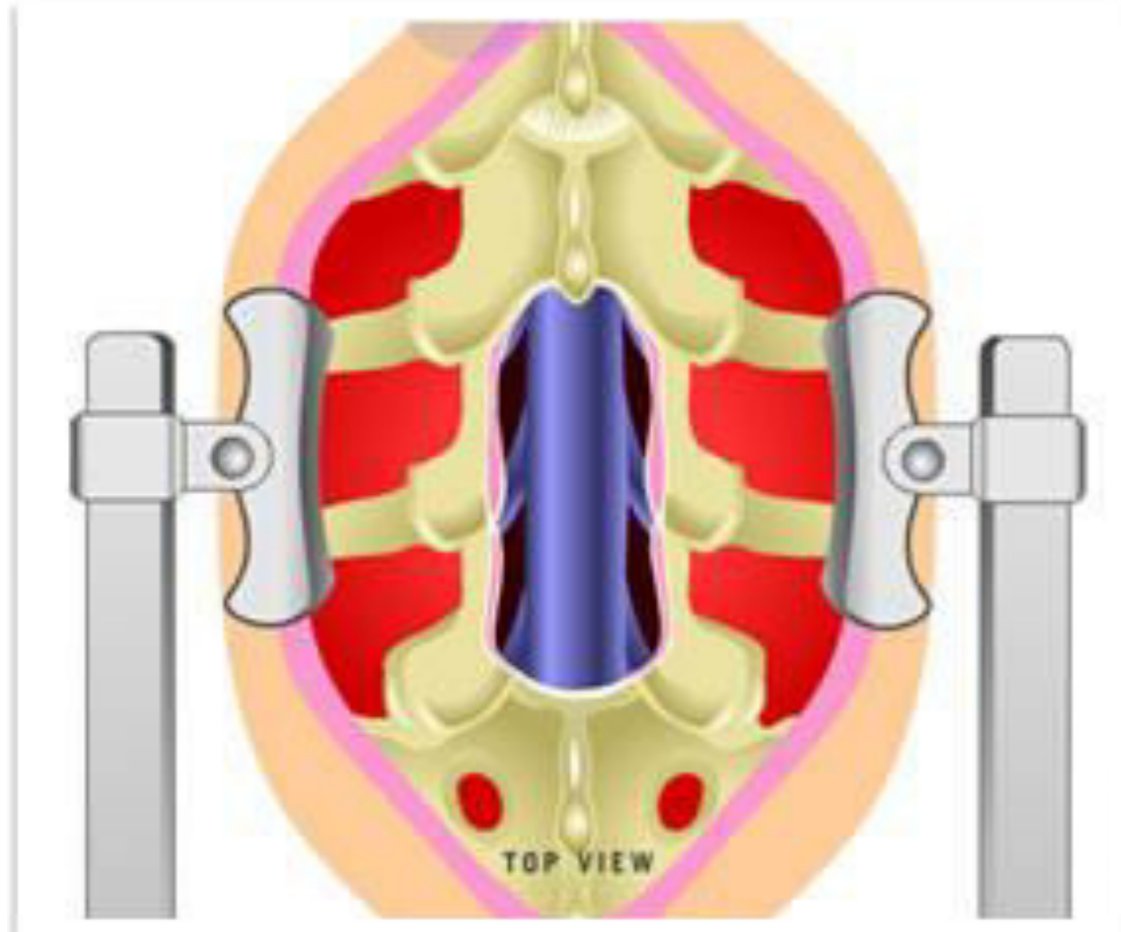
- Not everyone needs an operation
- Understanding expectations
- Tailor management
- Review over time

Treatment options



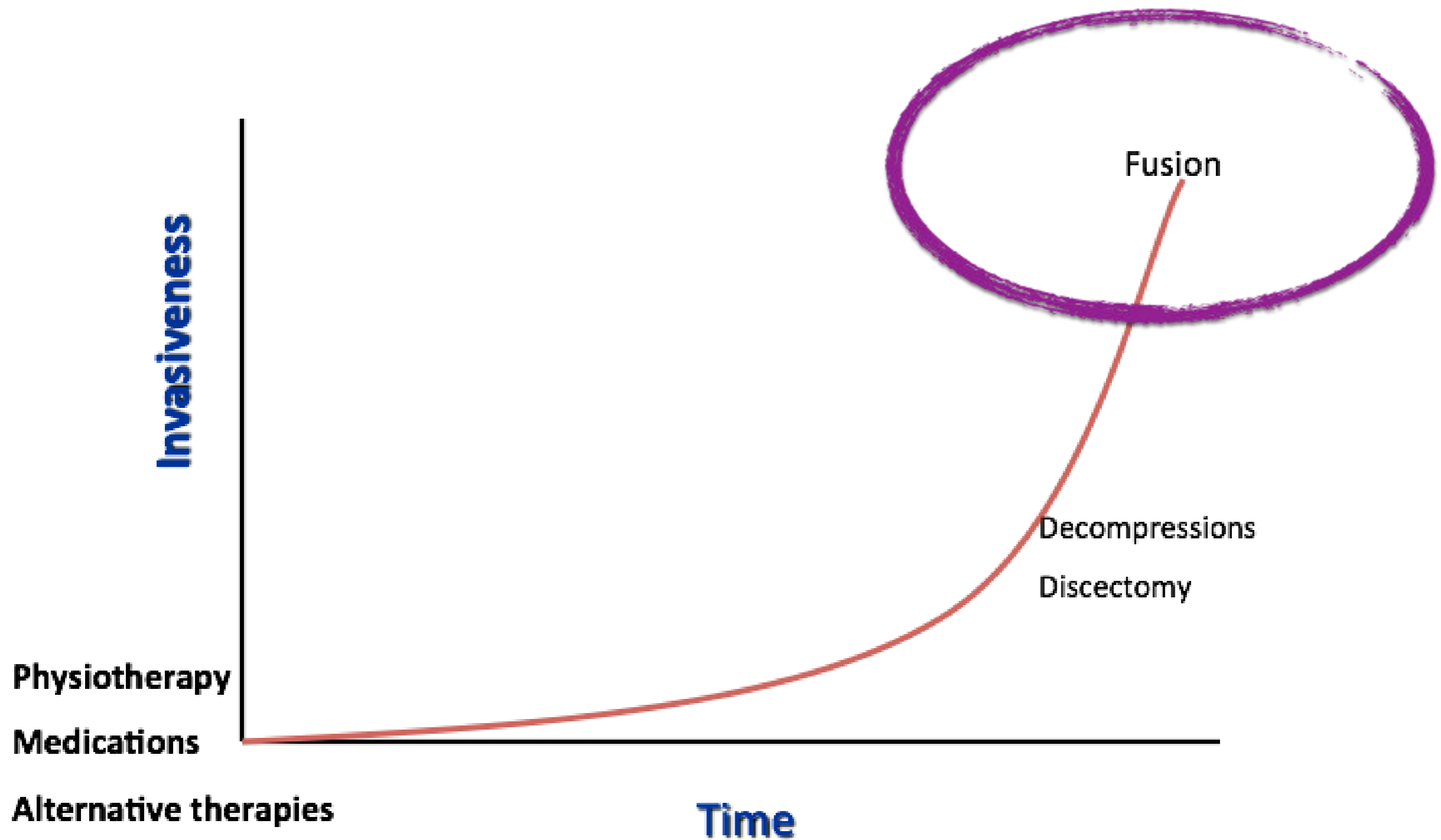
Lumbar decompression



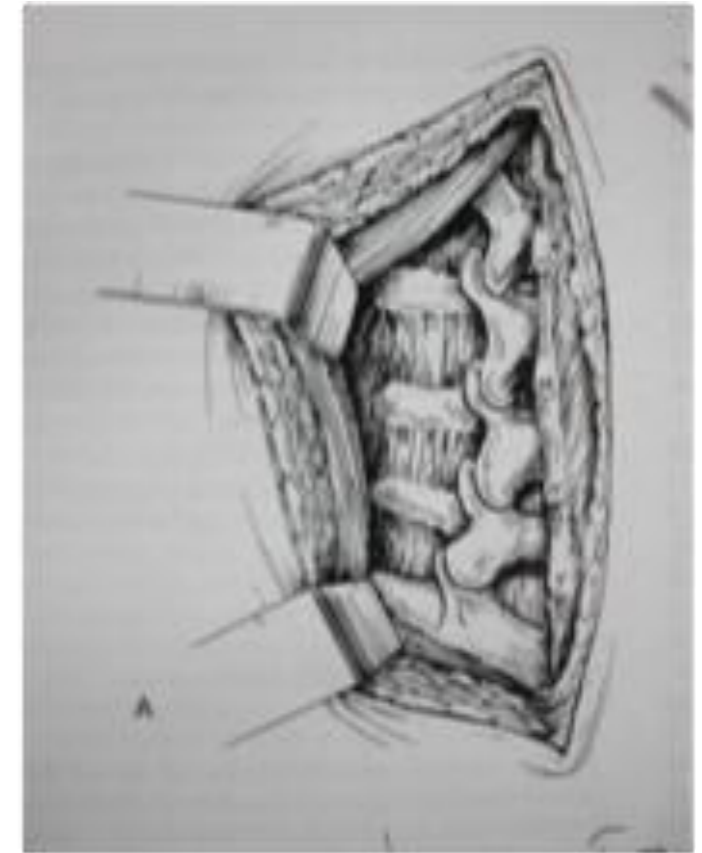
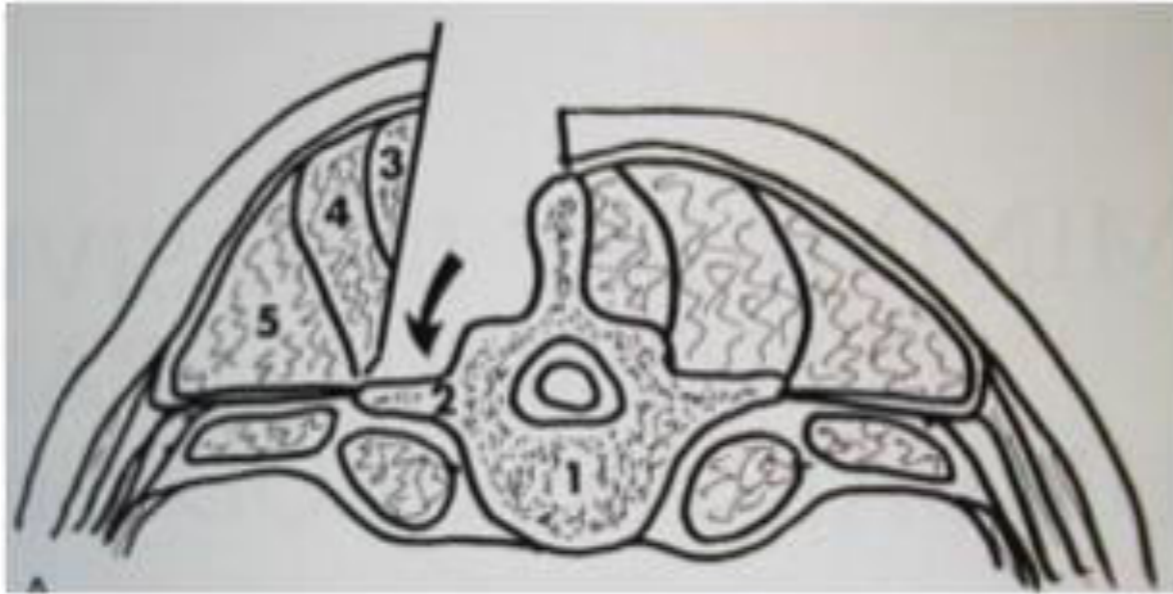




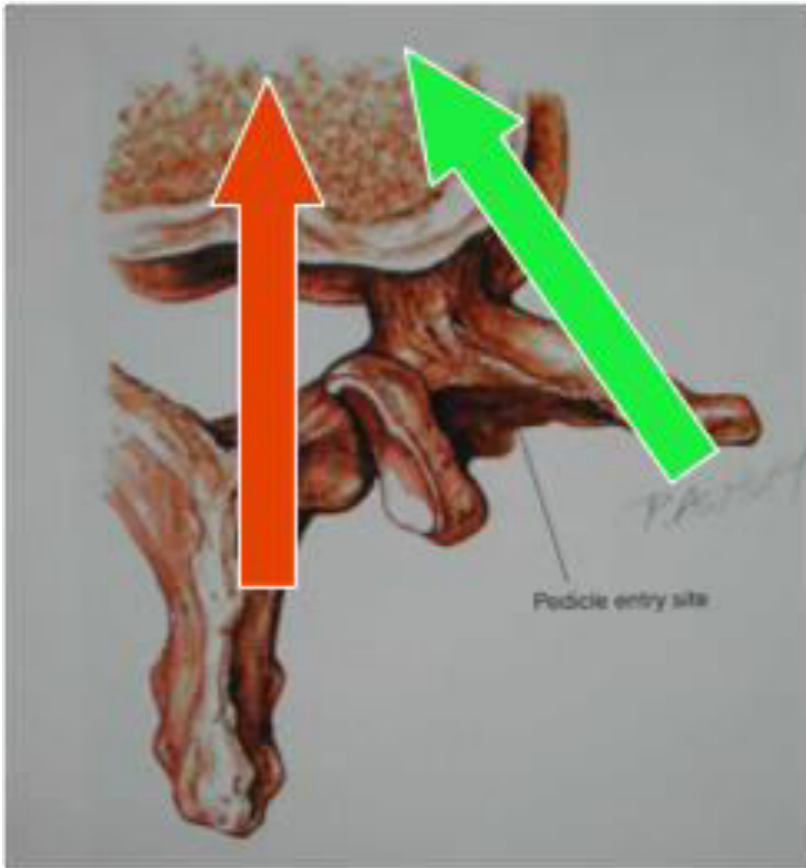
Treatment options



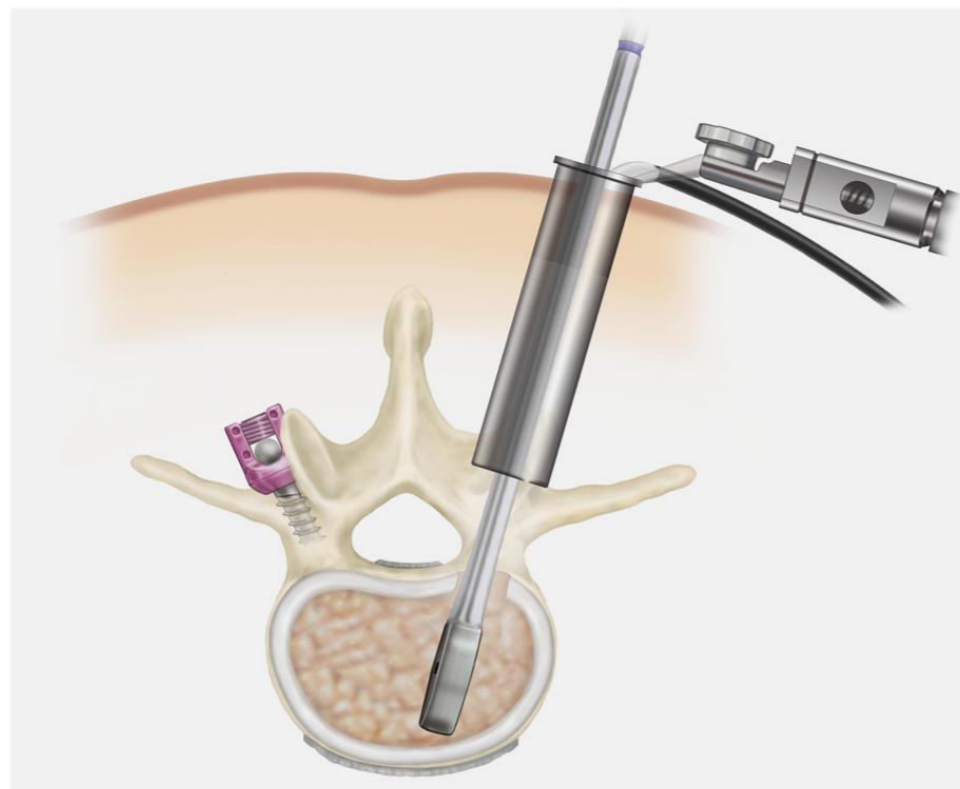
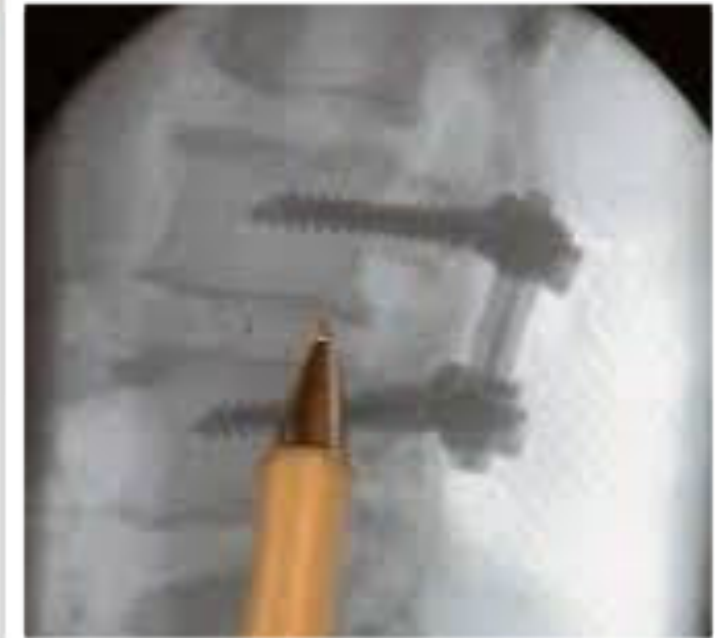
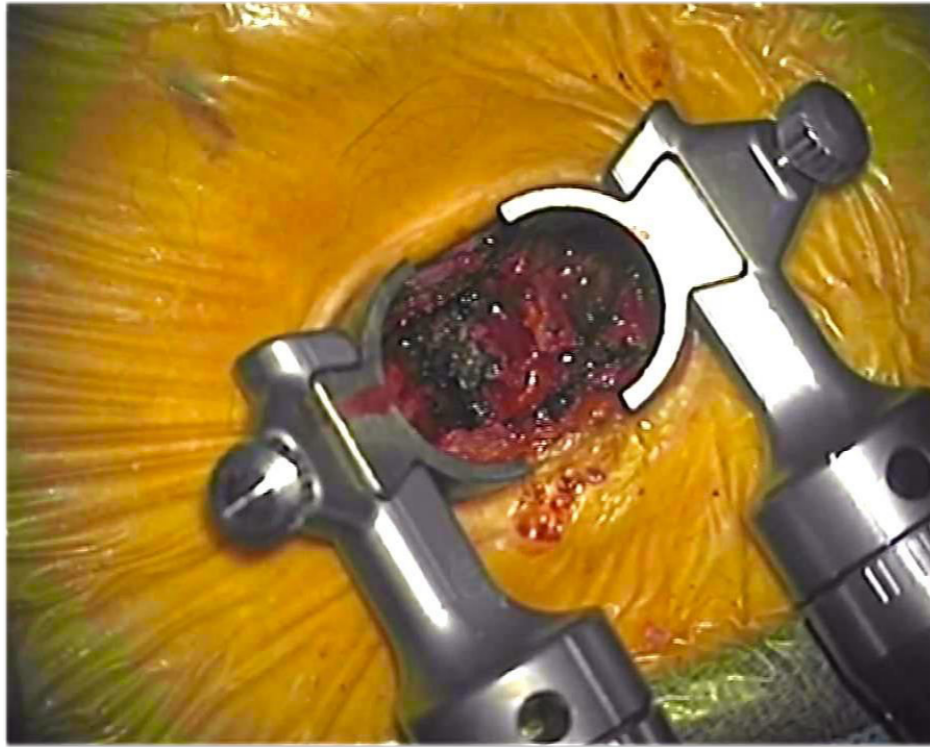
Postero-lateral fusion



Inter-body fusion

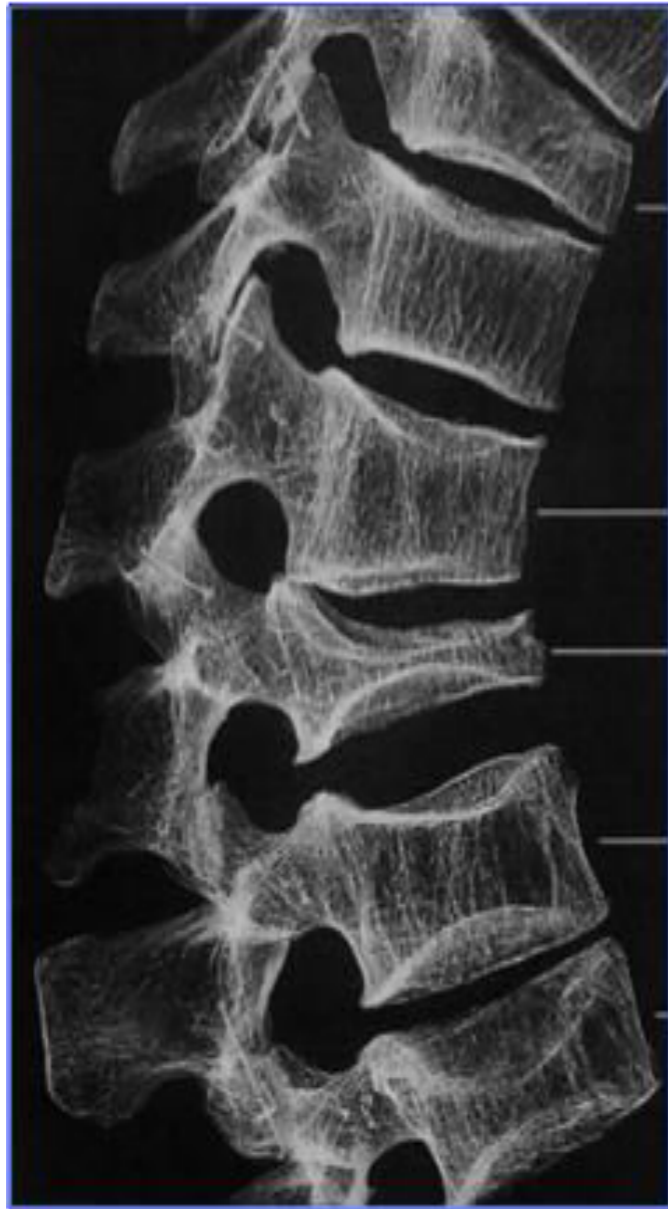


Minimally invasive surgery

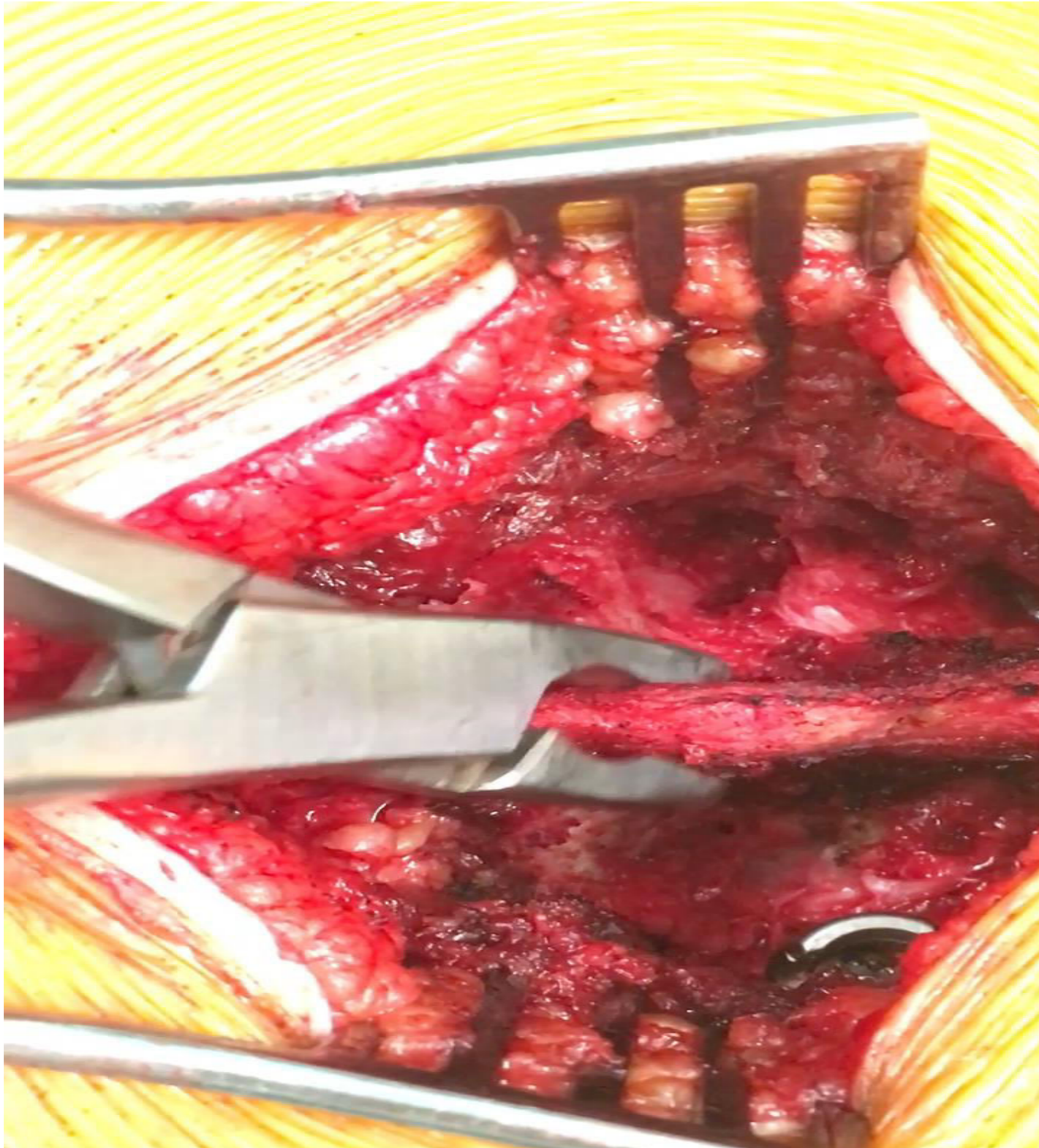


Truncal mal-alignment

Life is a kyphosing event

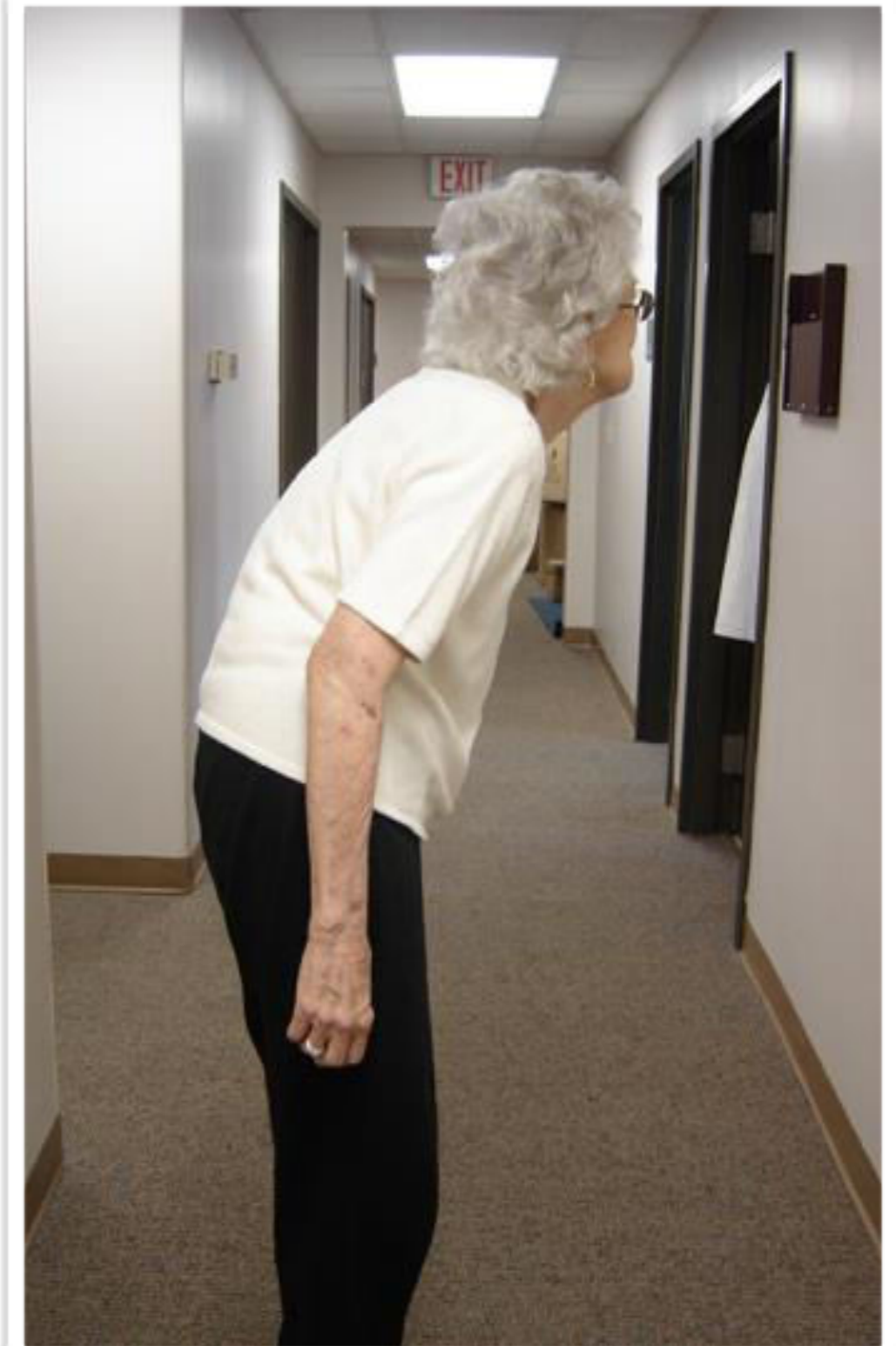


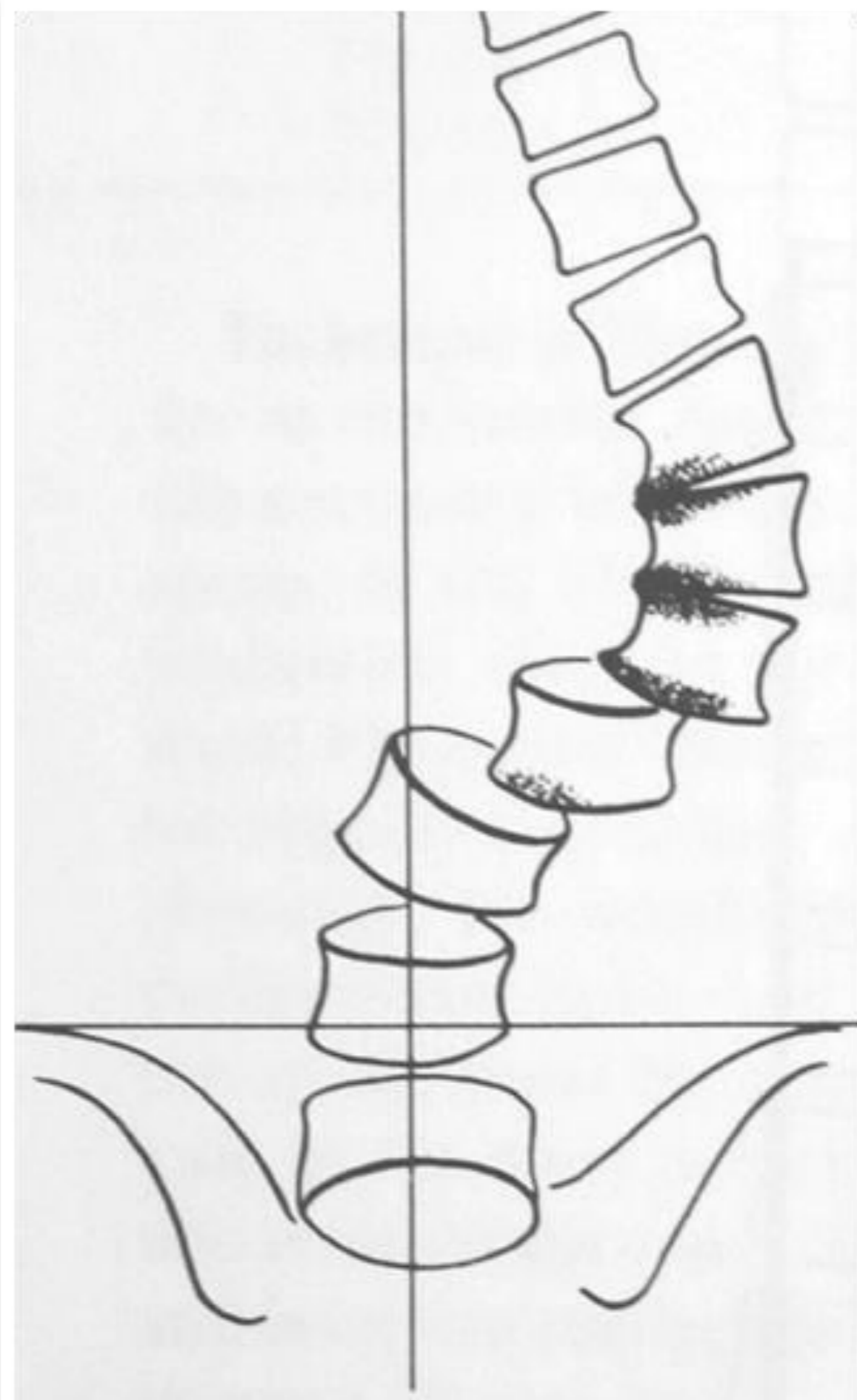
Spondylolysis



Degenerate deformity

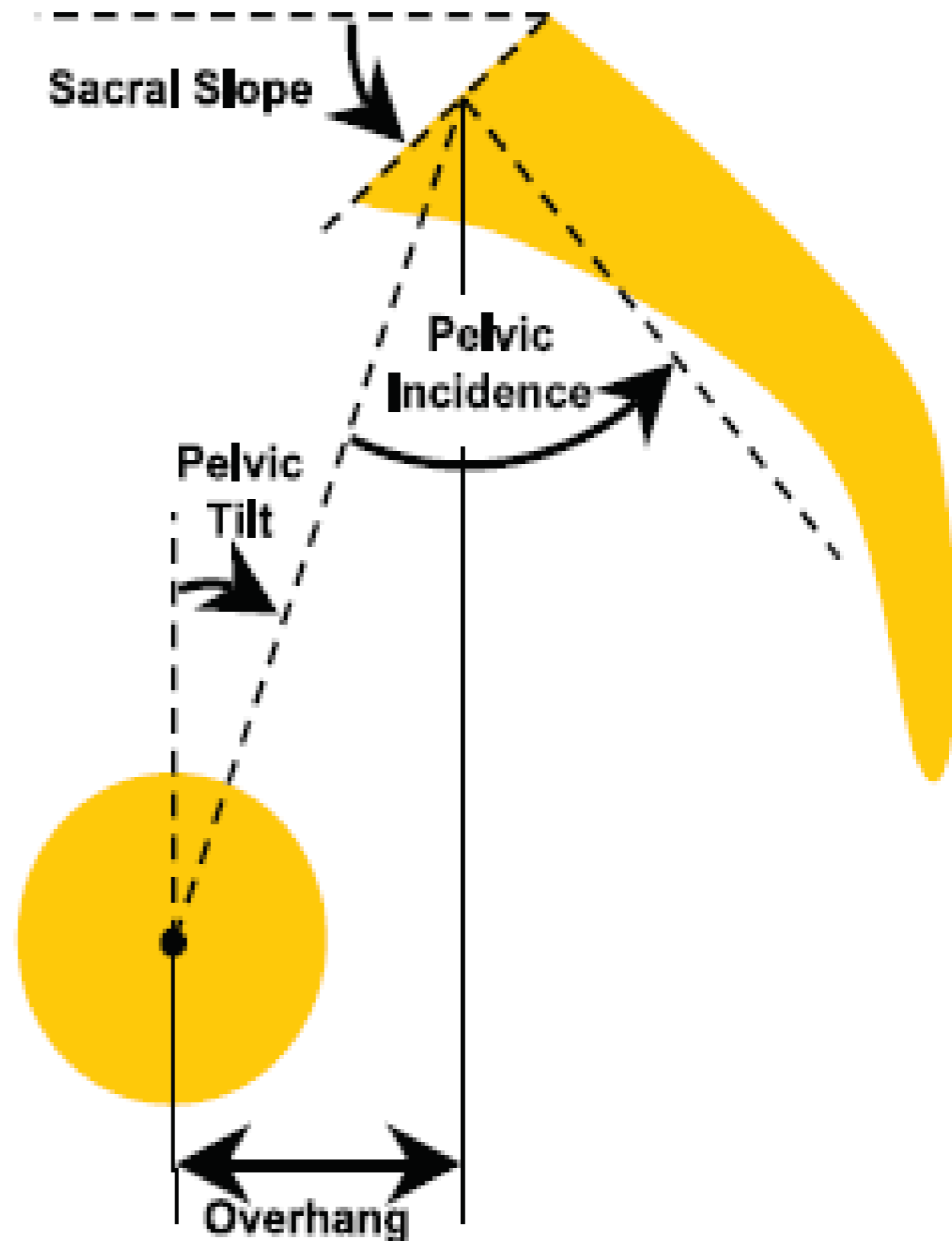
- Loss of ability to stand upright
- Mechanical dis-advantage
- Asymmetric degeneration
- Spinal column 'collapse'



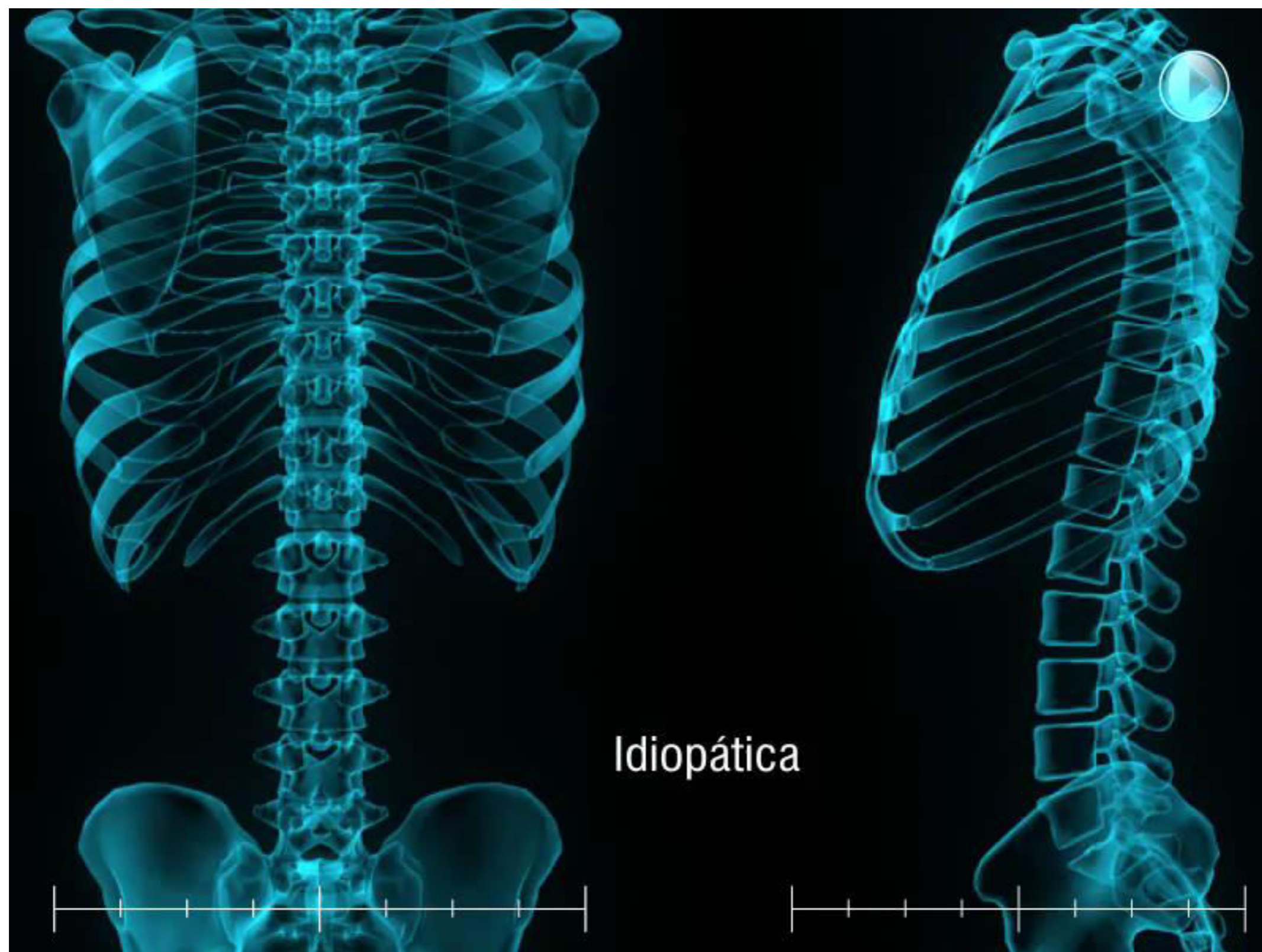


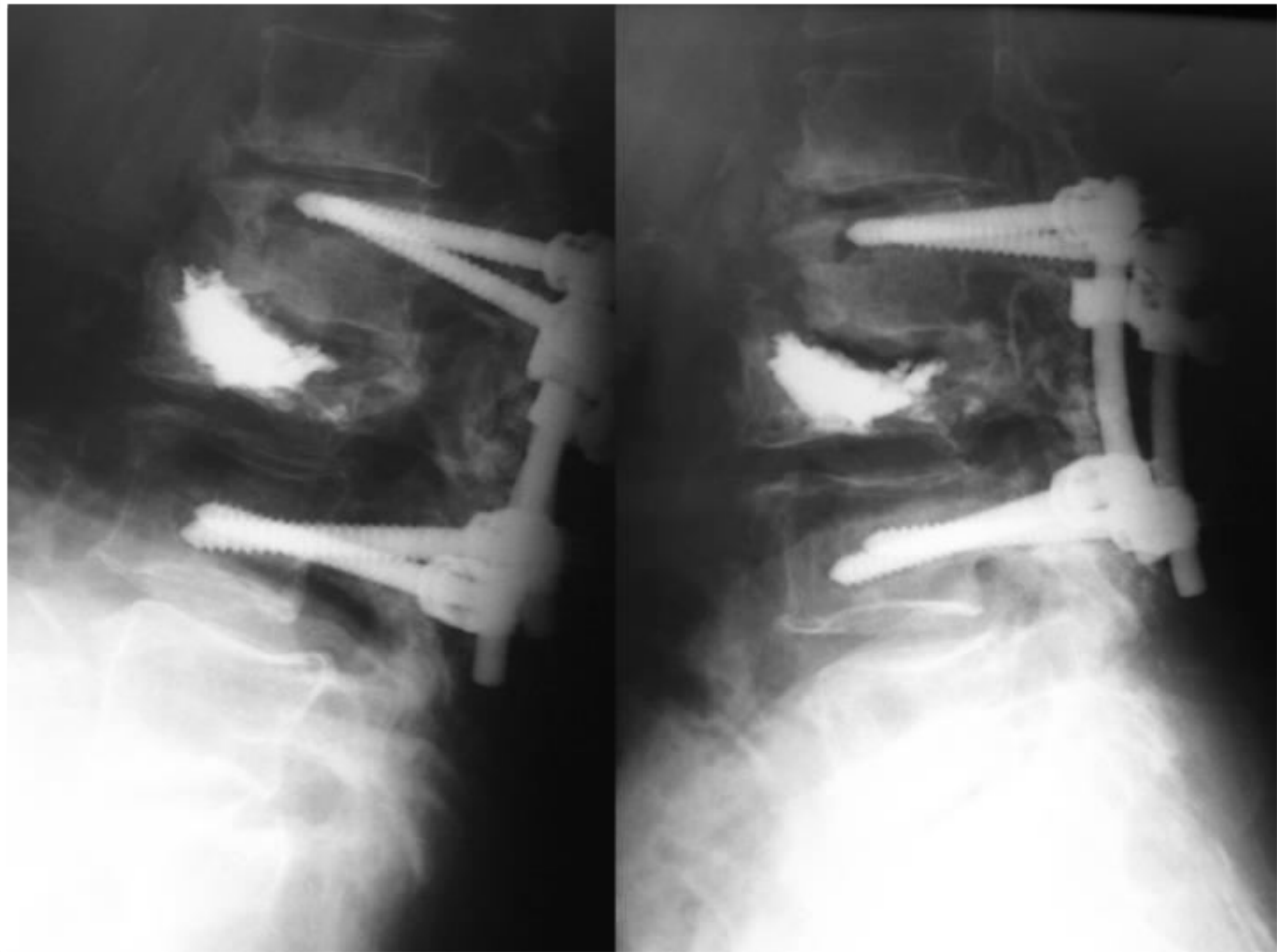
Pelvic measures

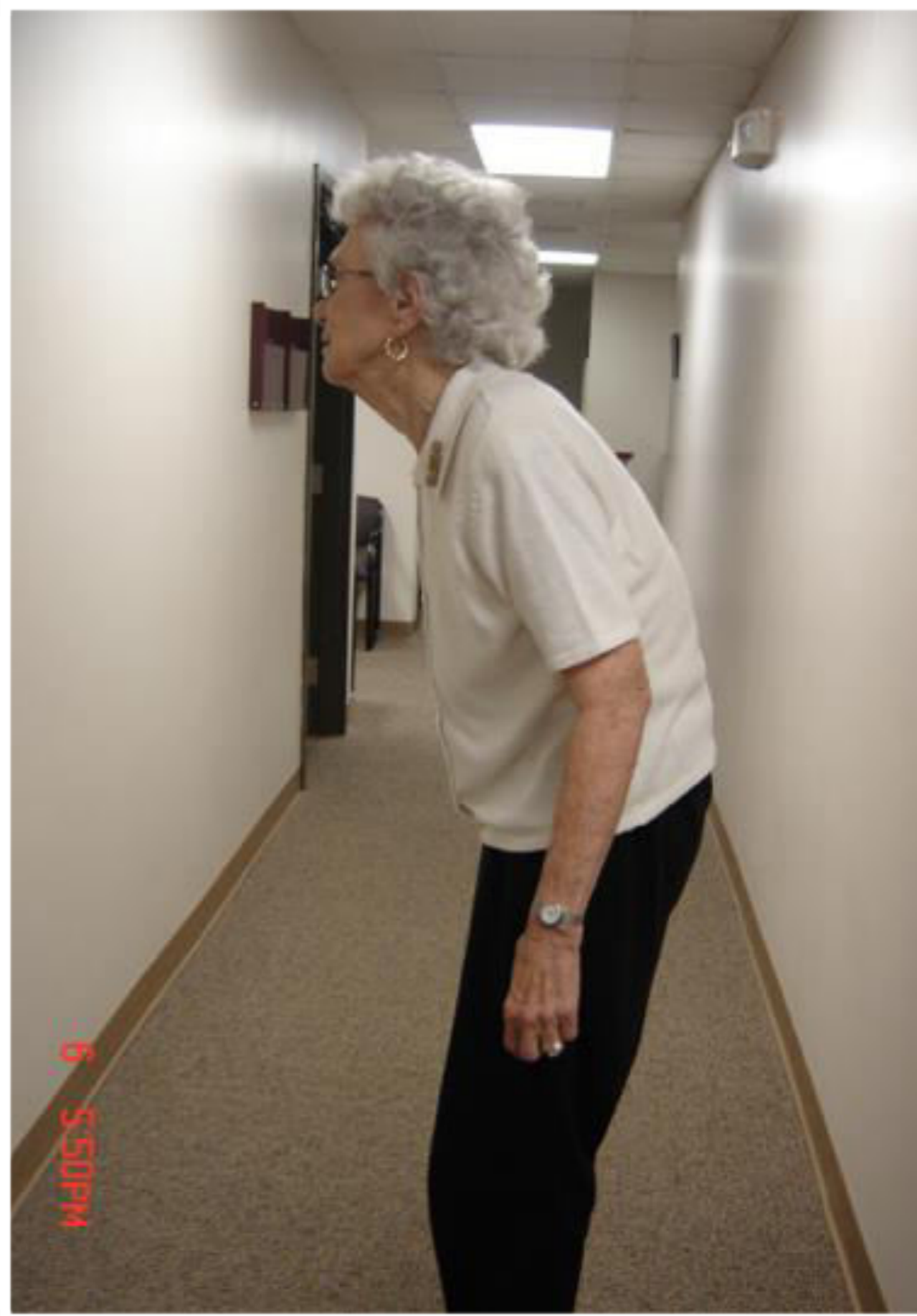
- Sacral slope (SS)
- Pelvic tilt (PT)
- Pelvic incidence (PI)











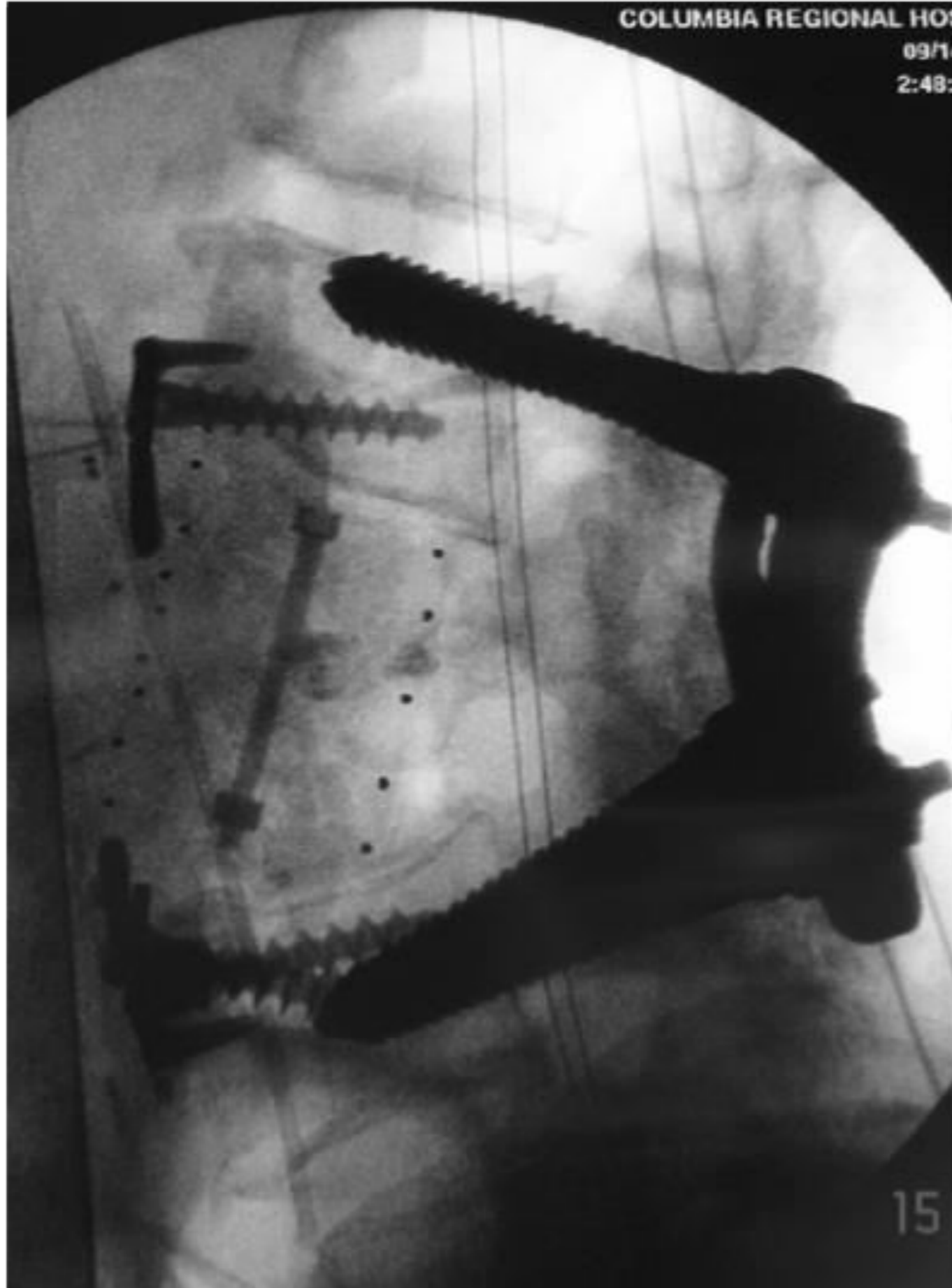
COLUMBIA REGIONAL HOSPITAL

08/17/17 00:02 IMA 16

09/14

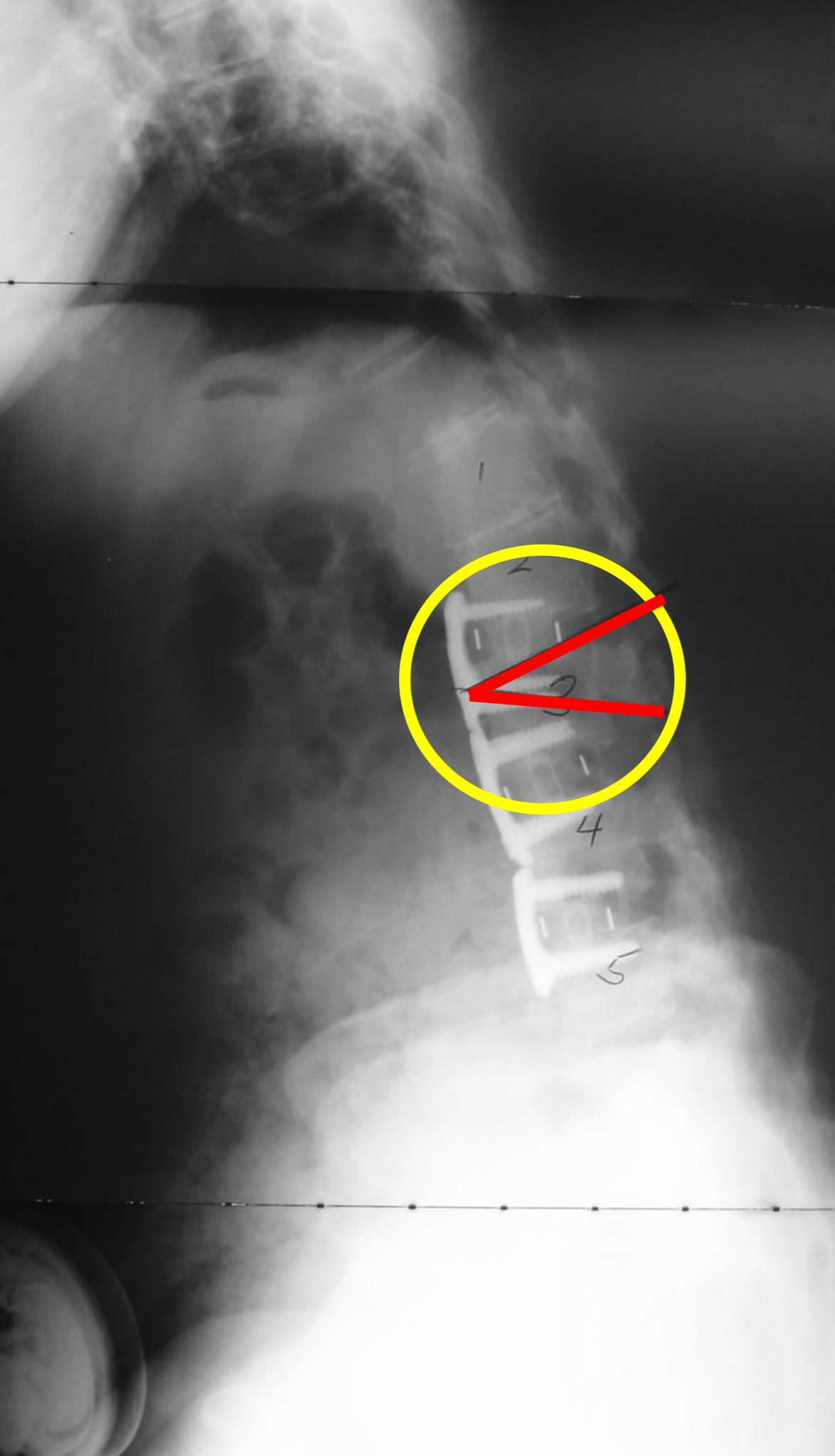
MPR 3

2:48:30



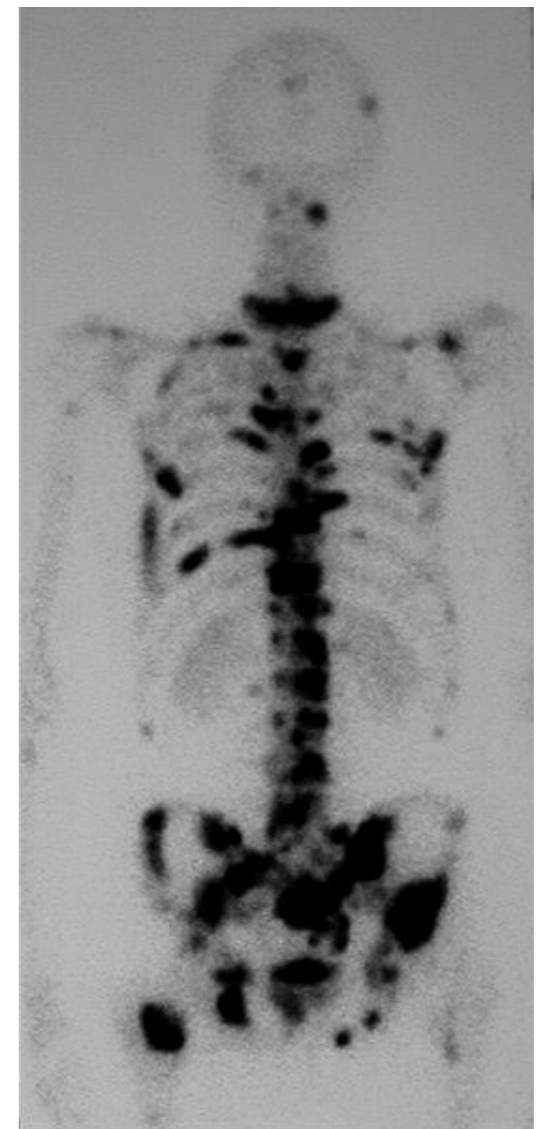






Spectrum of pathology

- Osteoporosis
- Discs and facet joints
- Failure of the spinal column

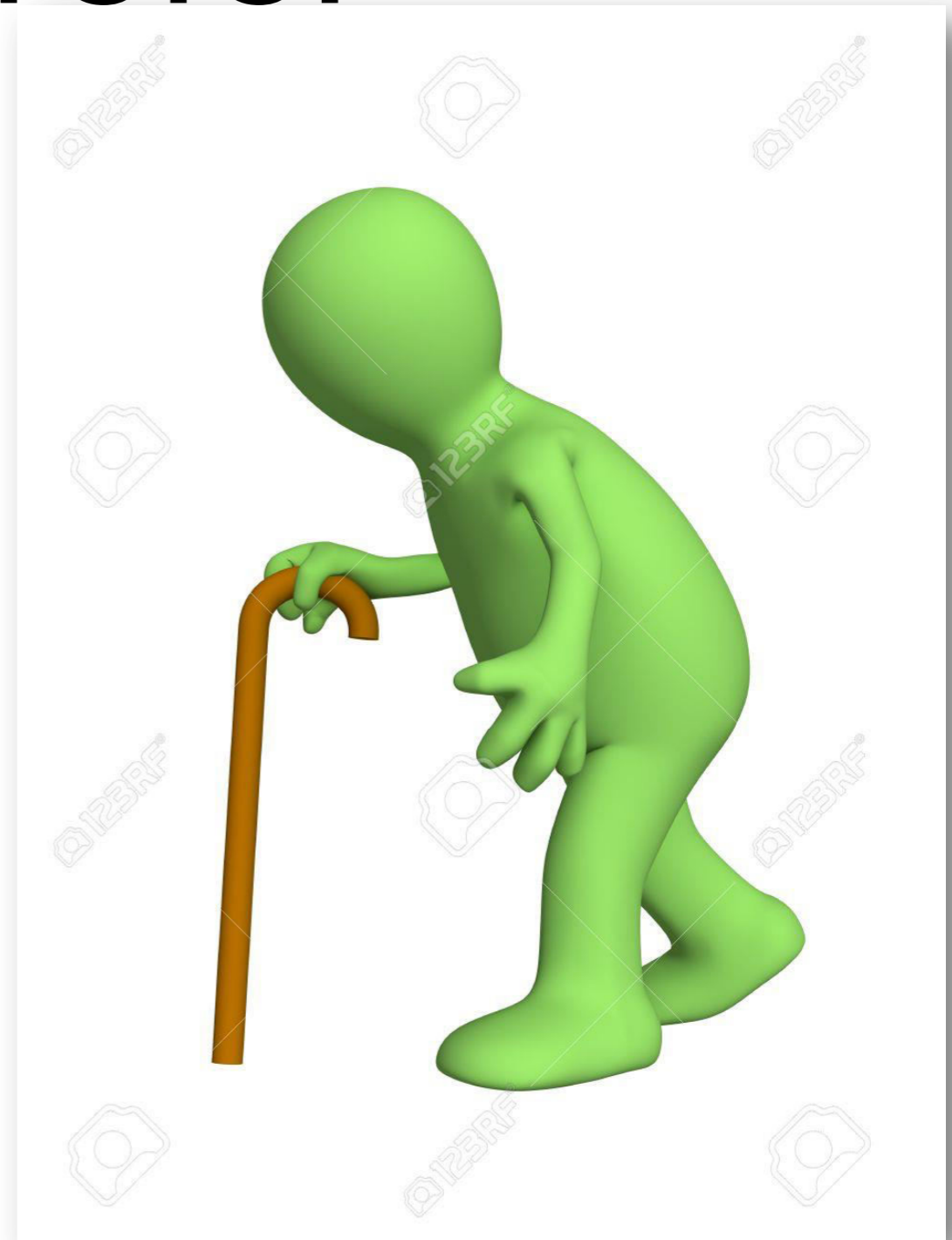


When to refer

- Axial back pain
- Radiation: thigh pain; claudication; groin pain
- Myotomal radiation
- Refer early.....not all need surgery

When to refer

- Unable to stand upright
- New 'forward gaze' issues
- Static or dynamic 'stoop'
- Loss of 'height'



- *'Discogenic back pain'*
- *'Physiotherapy v spinal fusion'*

- **Clinical findings**
- **Patient profile**
- **Patients' expectations, activities**
- **Imaging findings**

Discogenic back pain. Mehta et al
<http://bestpractice.bmj.com>