Problems in Musculoskeletal system

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Objectives

- Refreshment of your knowledge
- Clarify the importance of basic knowledge
- Connect the information you get in this module
- How to reflect this information on daily practice

Case 1

- Patient is 60 year old ,complain of knees pain on walking .pain disappear on sitting and lying and aggravated on going up stairs , associated with swelling of knees

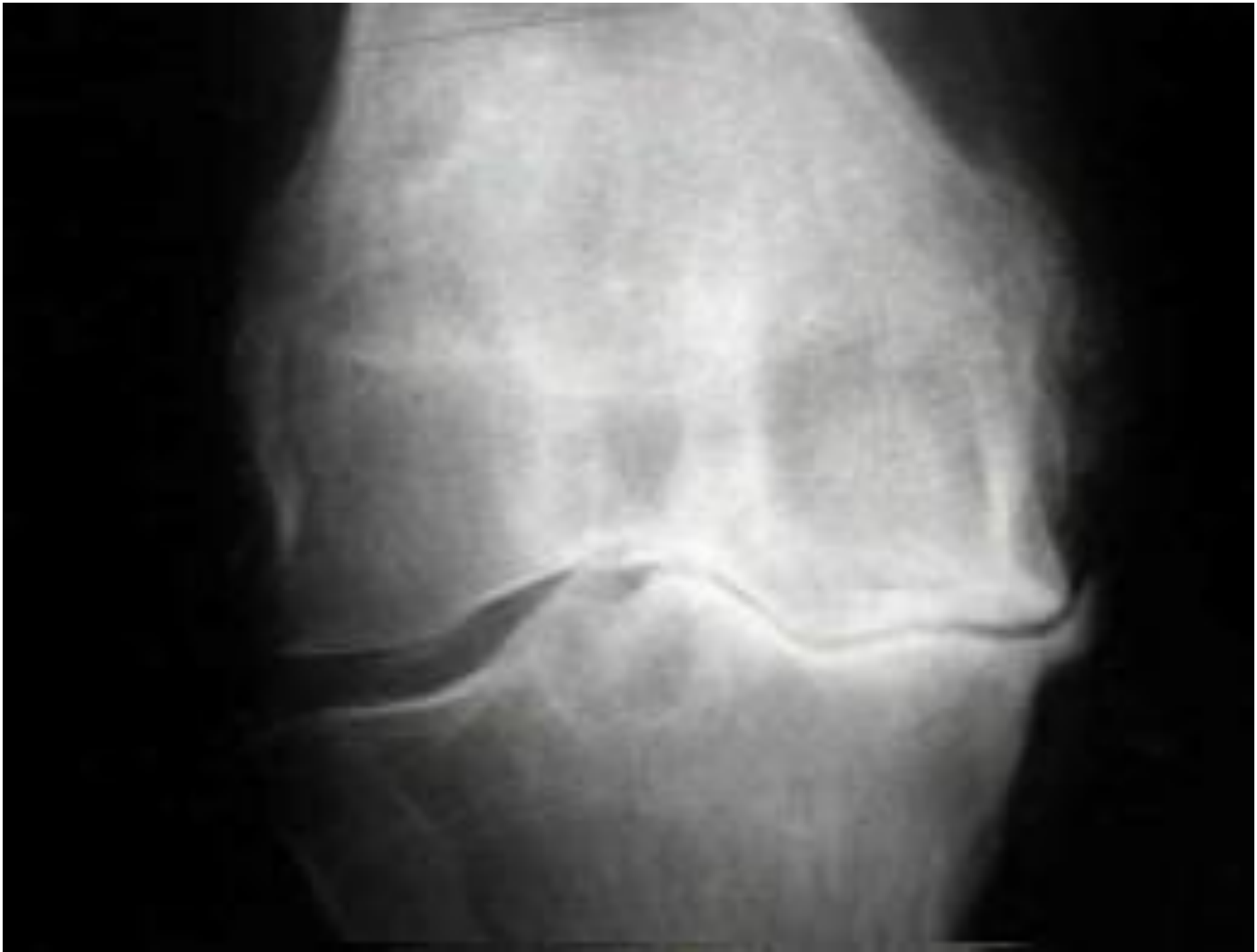
- patient is 6o year old male patient ,he was doing well till 15 year ago, he started complaining of knees pain on and off on walking long distance more than 2 hours
- Gradually increase in severity with time and on short distance.
- Since 6 months the patient complain of pain on walking at home from bed room to living room
- Relieved at rest and on lying down, associated with swelling of knees. Patient has difficulty on praying , now he is unable to pray on the ground, he prays on chair

- Varus deformity of knees, atrophy of vastus medialis, flexion contracture of knees

- Tenderness on the joint line medially and laterally

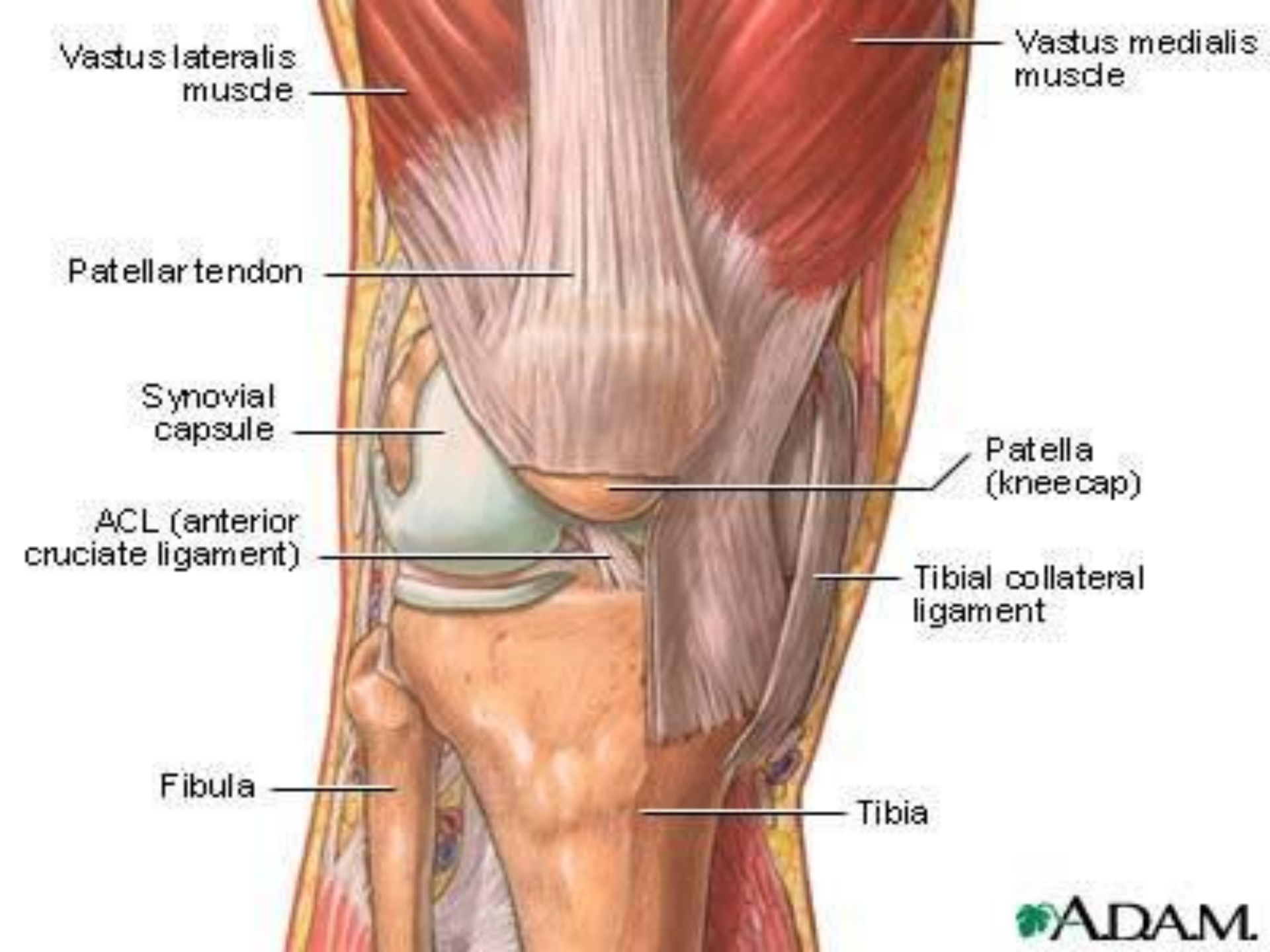
- Range of motion limited from 10 -95
- Crepiation on motion

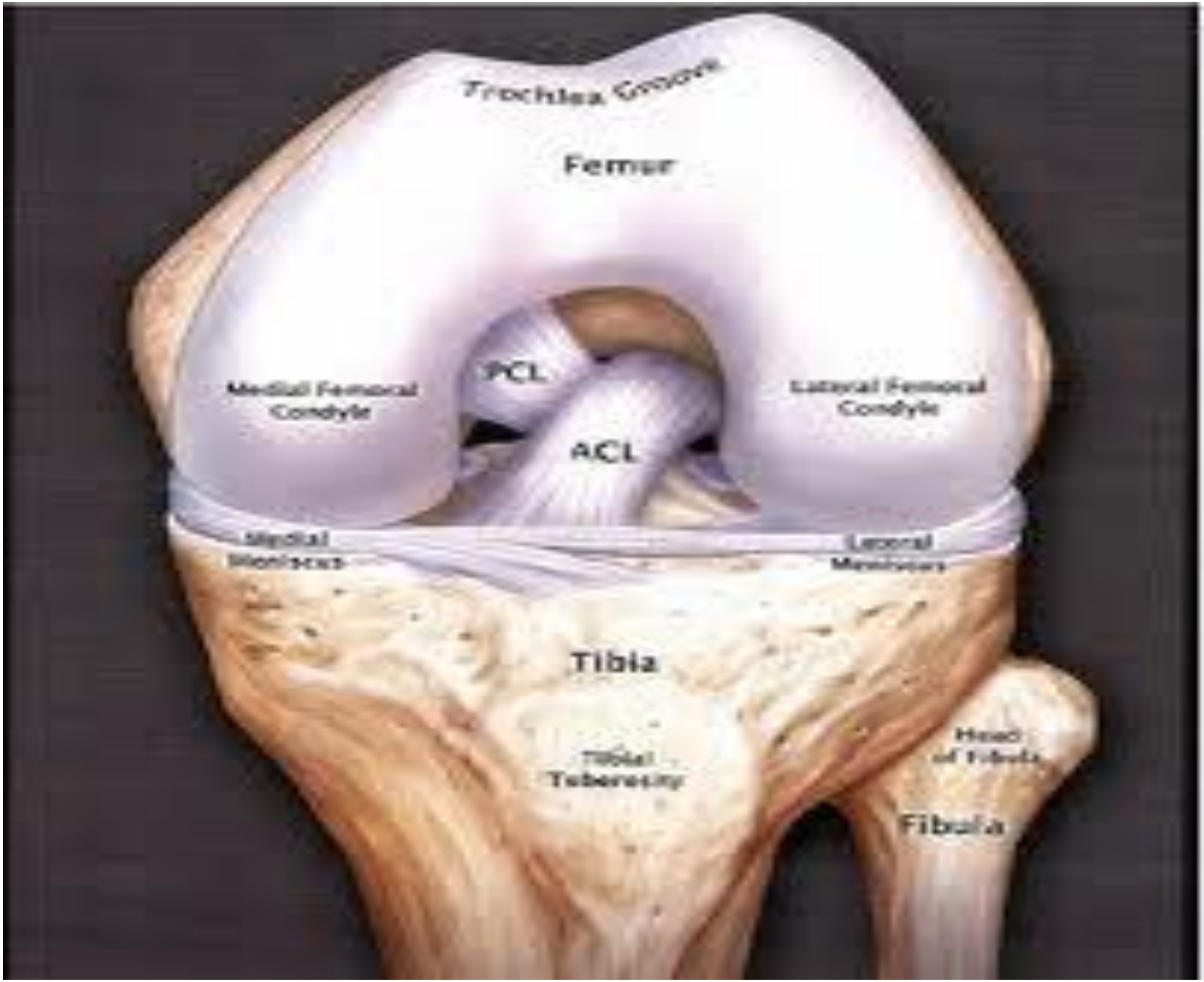
- Medial and lateral instability

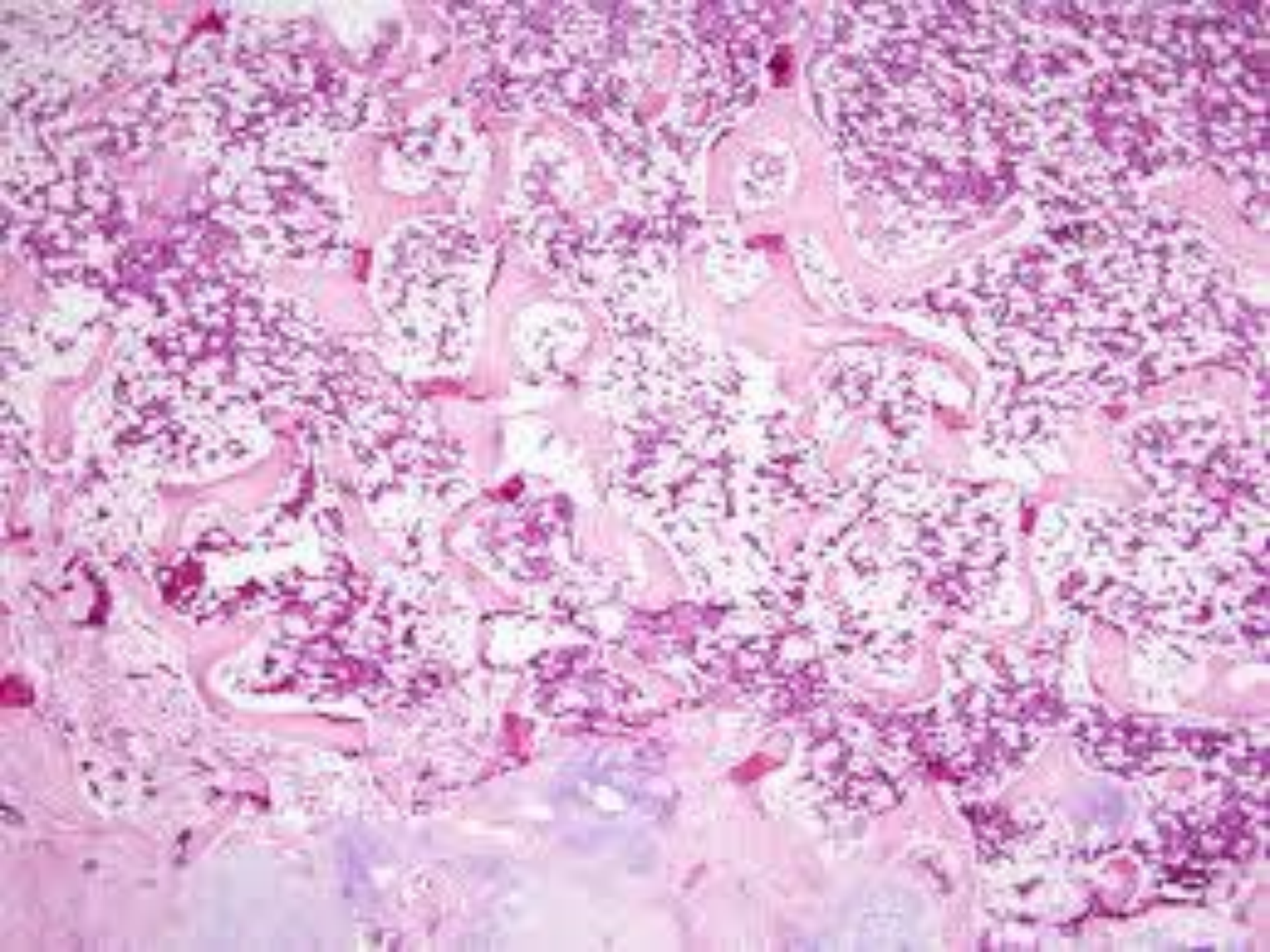


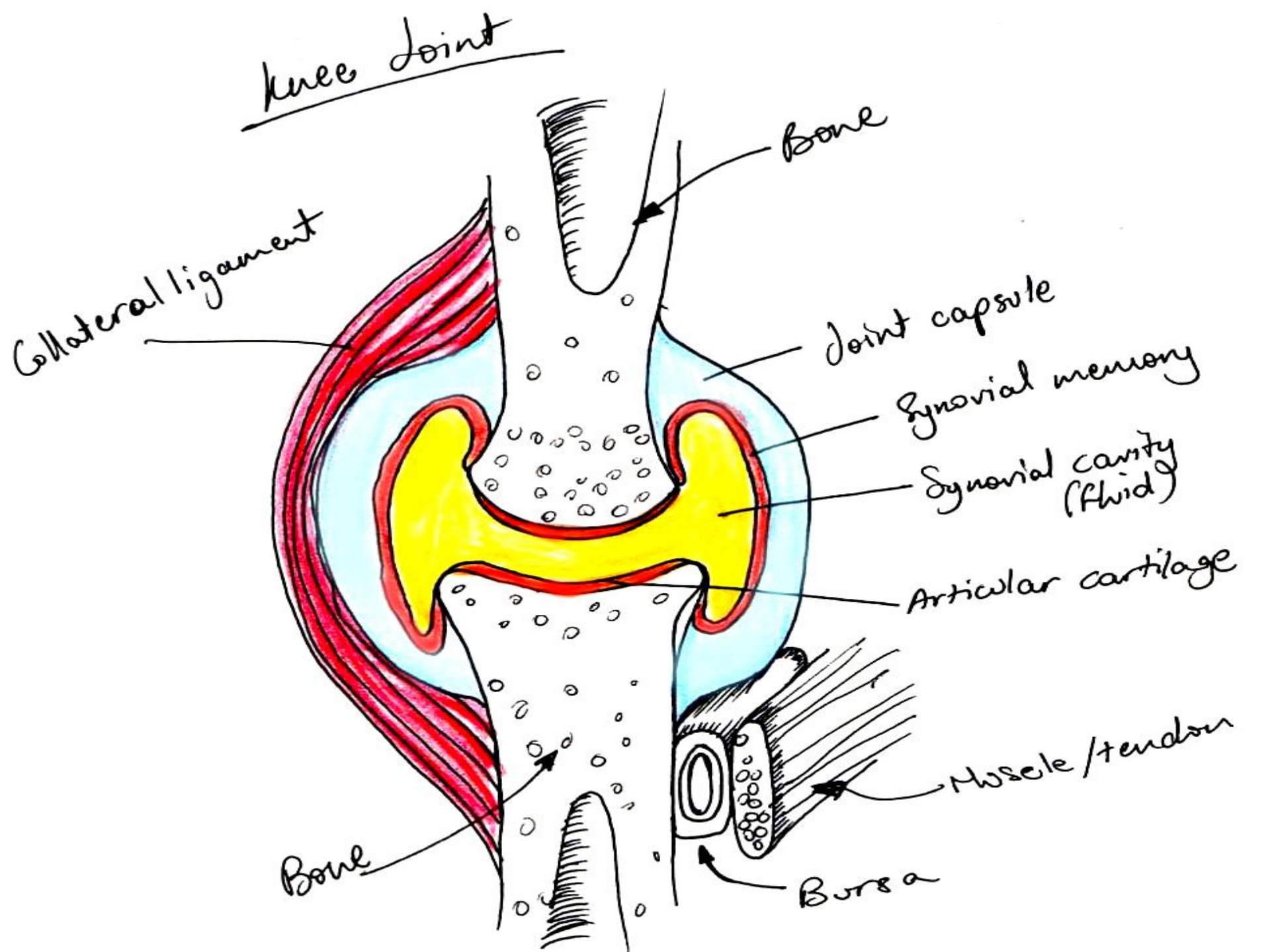
- **what to do?**
- **What is the DX?**


Femur
Quadriceps Tendon
Patella
Tibia
Patellar Tendon
NORMAL KNEE

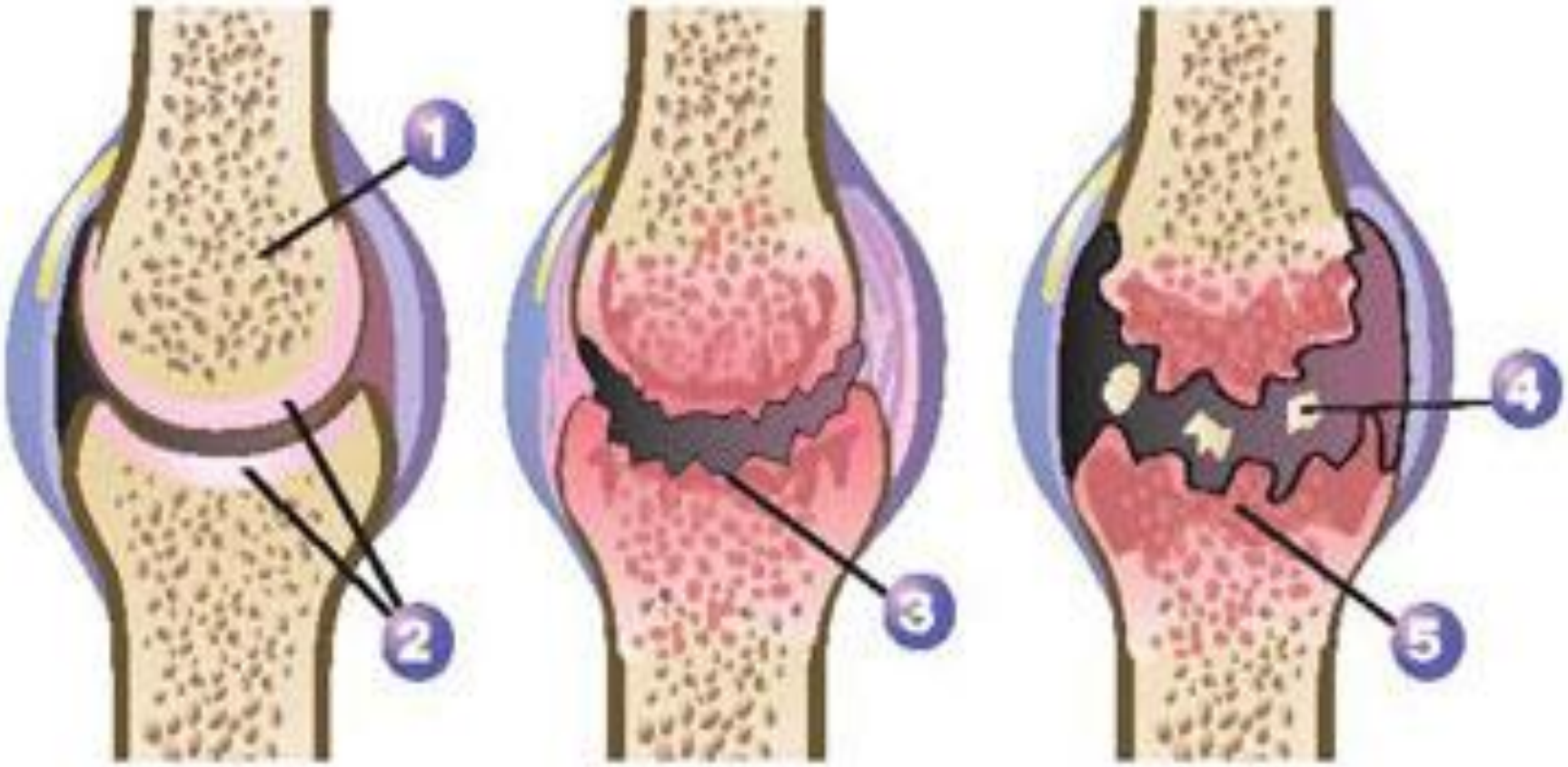

Vastus lateralis muscle
Vastus medialis muscle
Patellar tendon
Synovial capsule
Patella (kneecap)
ACL (anterior cruciate ligament)
Tibial collateral ligament
Fibula
Tibia
A.D.A.M.


Trochlea Groove
Femur
PCL
Medial Femoral Condyle
ACL
Lateral Femoral Condyle
Tibia
Tibial Tuberosity
Fibula



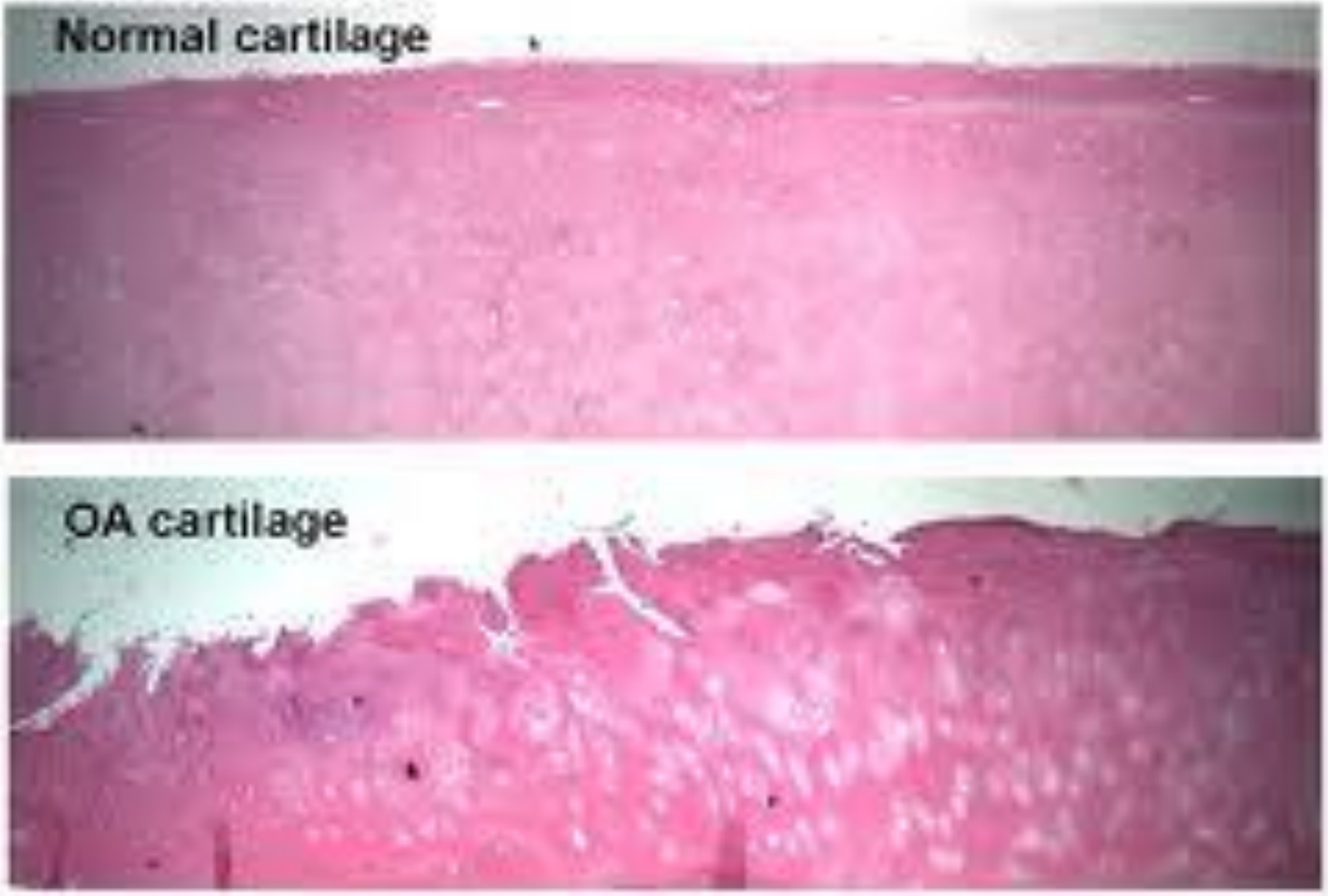

Knee Joint
Bone
Collateral ligament
Joint capsule
Synovial membrane
Synovial cavity (fluid)
Articular cartilage
Muscle / tendon
Bone
Bursa

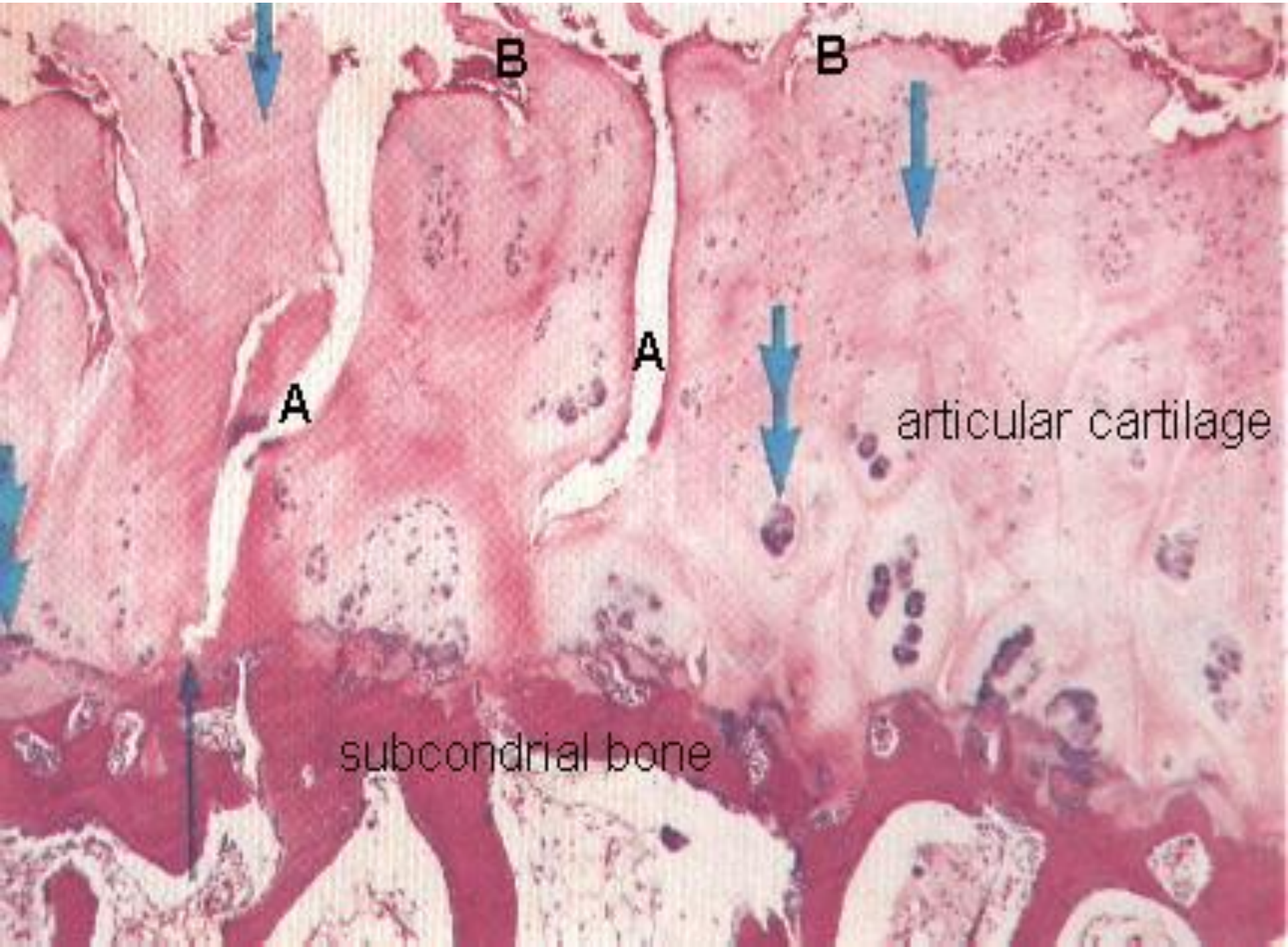
Evolution of Osteoarthritis

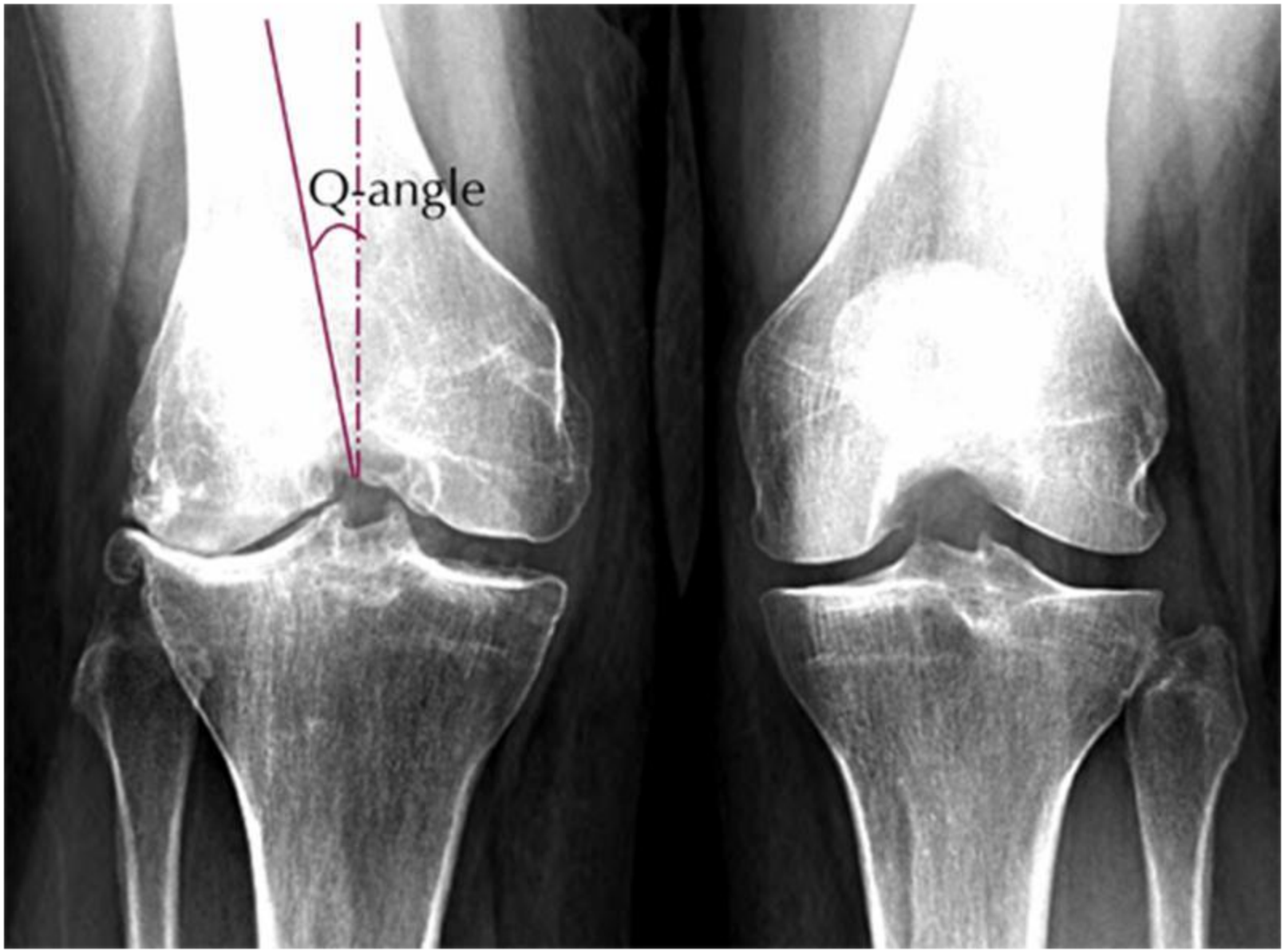


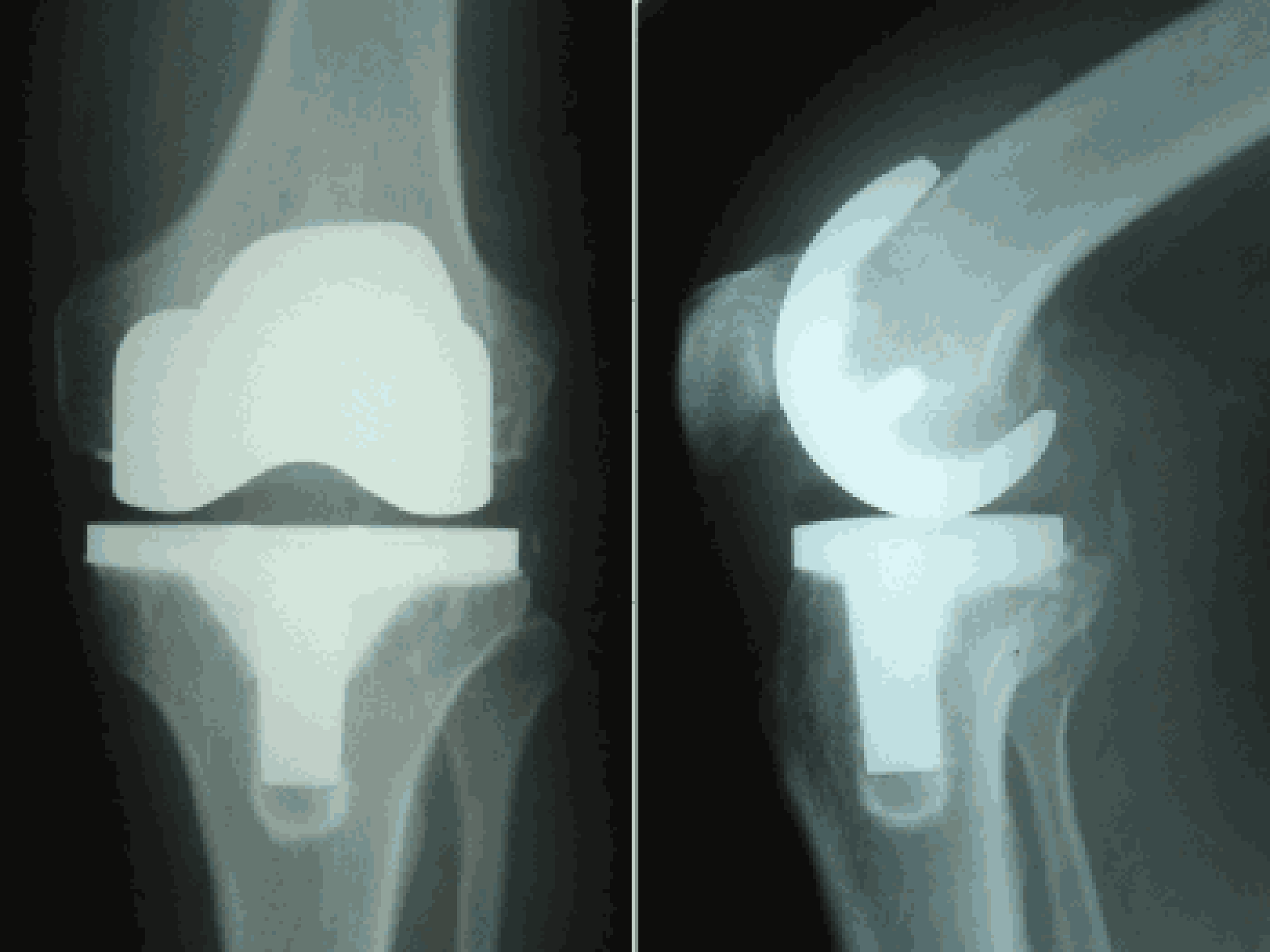
1. *Bone*
2. *Cartilage*
3. *Thinning of cartilage*
4. *Cartilage remnants*
5. *Destruction of cartilage*

Histology of Human Normal and Osteoarthritic Cartilage




B
B
A
A
articular cartilage
subcondrial bone


Q-angle



Learning Objectives

- 1- What are the anatomical structure of knee joint
- 2-discuss the function of meniscus and collateral ligament
- 3-Discuss how the cartilage get nutrition
- 4- Discuss how the cartilage degenerate
- 5-Discuss the path physiology of pain

Case 2

- Patient is 35 year old patient complain of back pain ,this pain radiating to the right lower limb agreivated on leaning foreword and on coughing associated with numbness in the legs and feet
- On examination the patient had tenderness on lumbar area and decrease sensation and weakness in feet dorsflexion .

- Patient is 35 year old male patient , he was doing fine till 2 days prior to presentation to the emergency room , where he left heavy object suddenly and he felt severe pain in his back
- 2 hours later the pain radiated to the Rt lower limb associated with numbness and parasthesia
- Patient was unable to walk without help
- The pain aggravated with time ,and not respond to analgesia ,later on patient unable to walk because of difficulty to keep shoe in his Rt foot.

- On physical exam patient has tenderness on lower lumbar area especially on the right side
- Straight leg raising on Rt 30 on Lt 90
- Power was normal on both sides except
- dorsflexion of ankle 3/5
- Decrease sensation over dorsum of foot
- Decrase reflex of ankle on Rt side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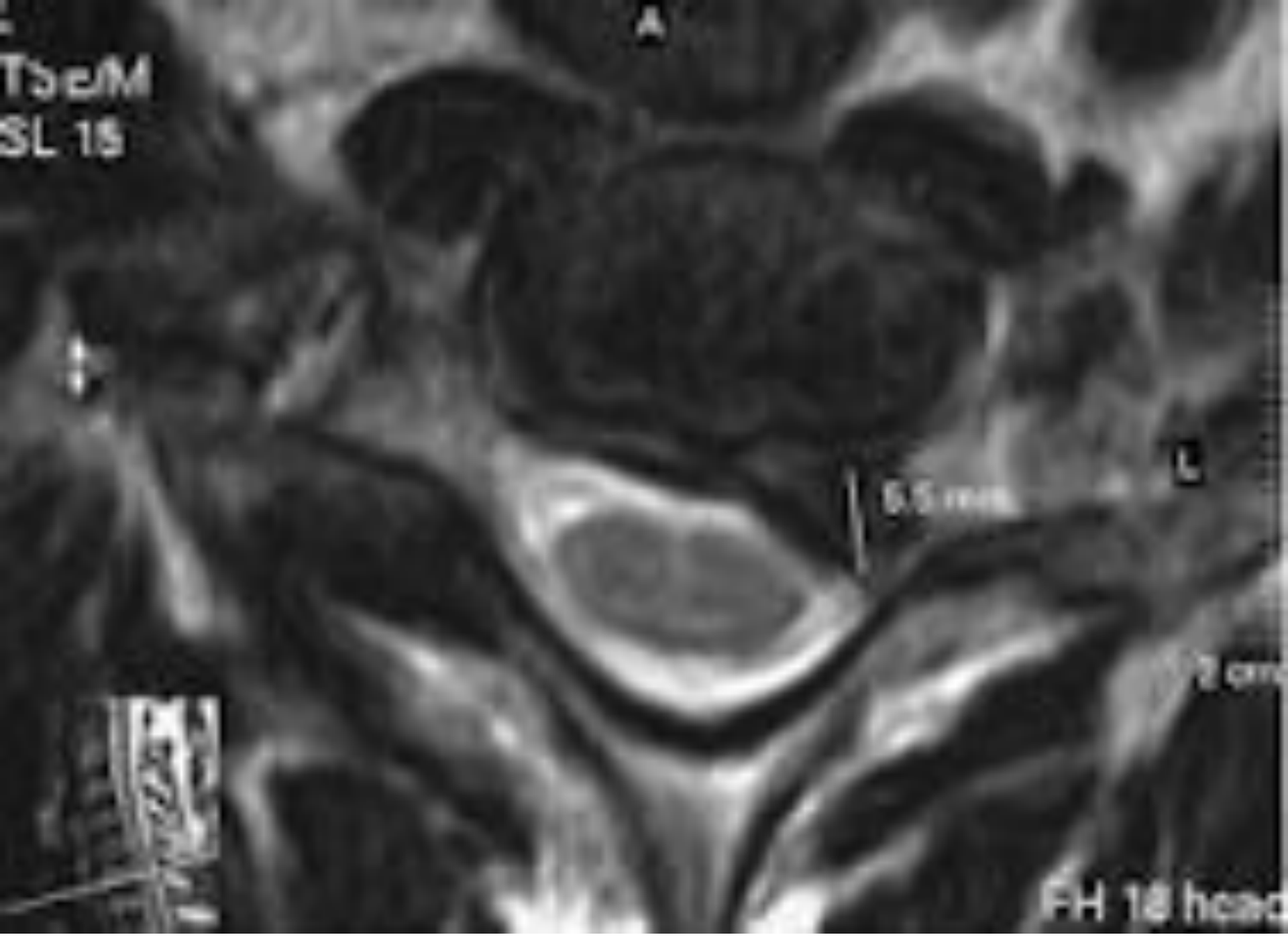
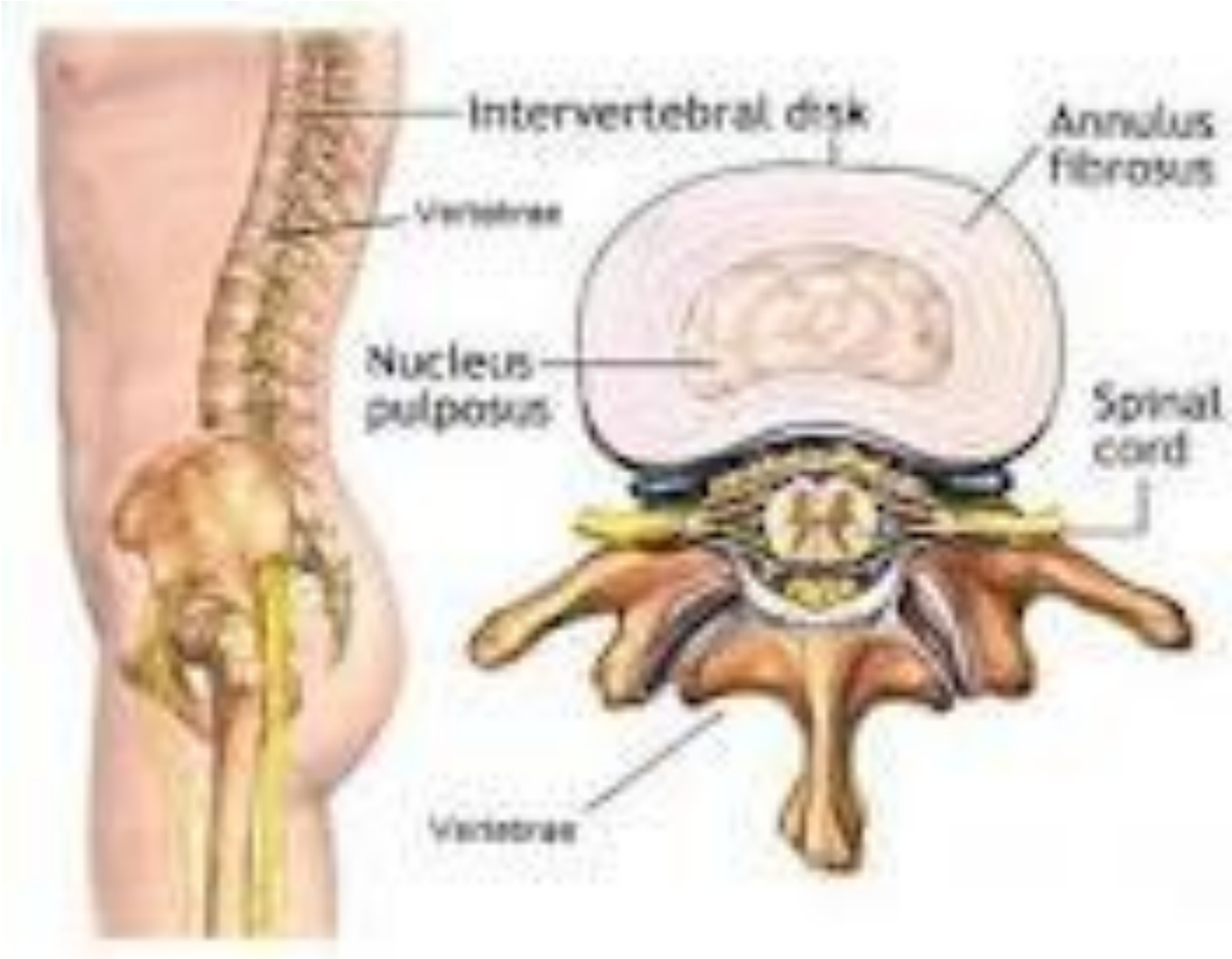
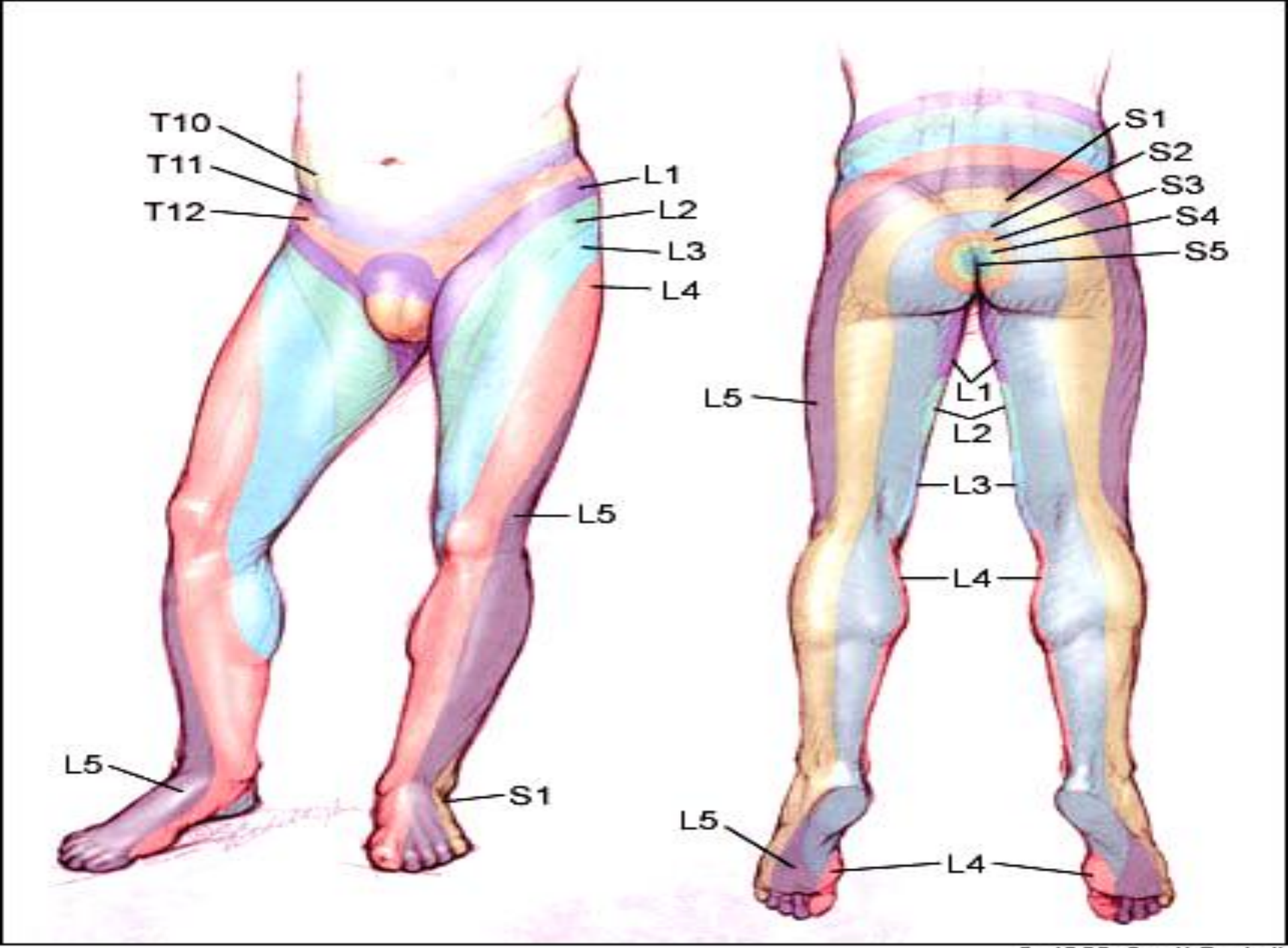
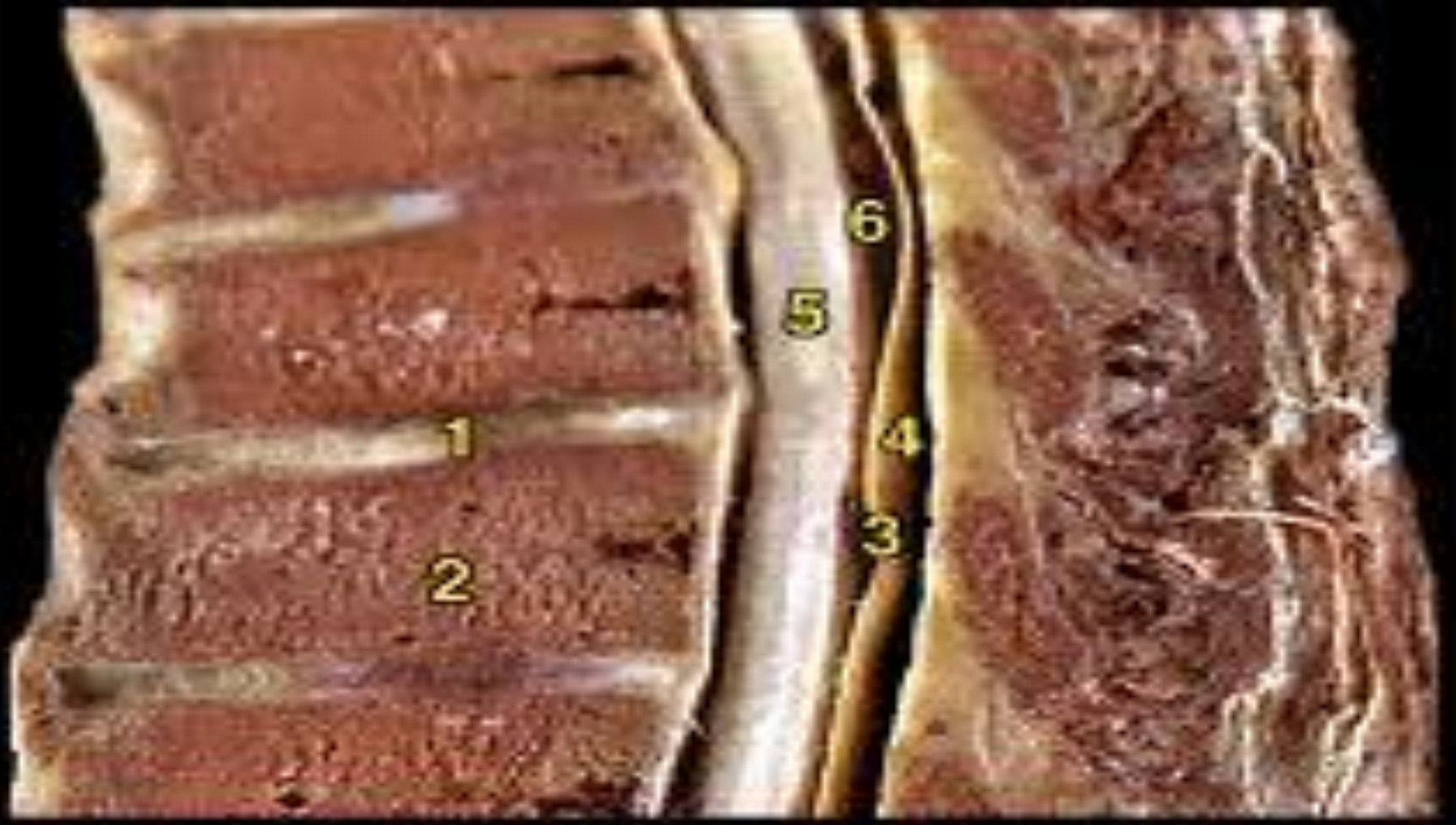
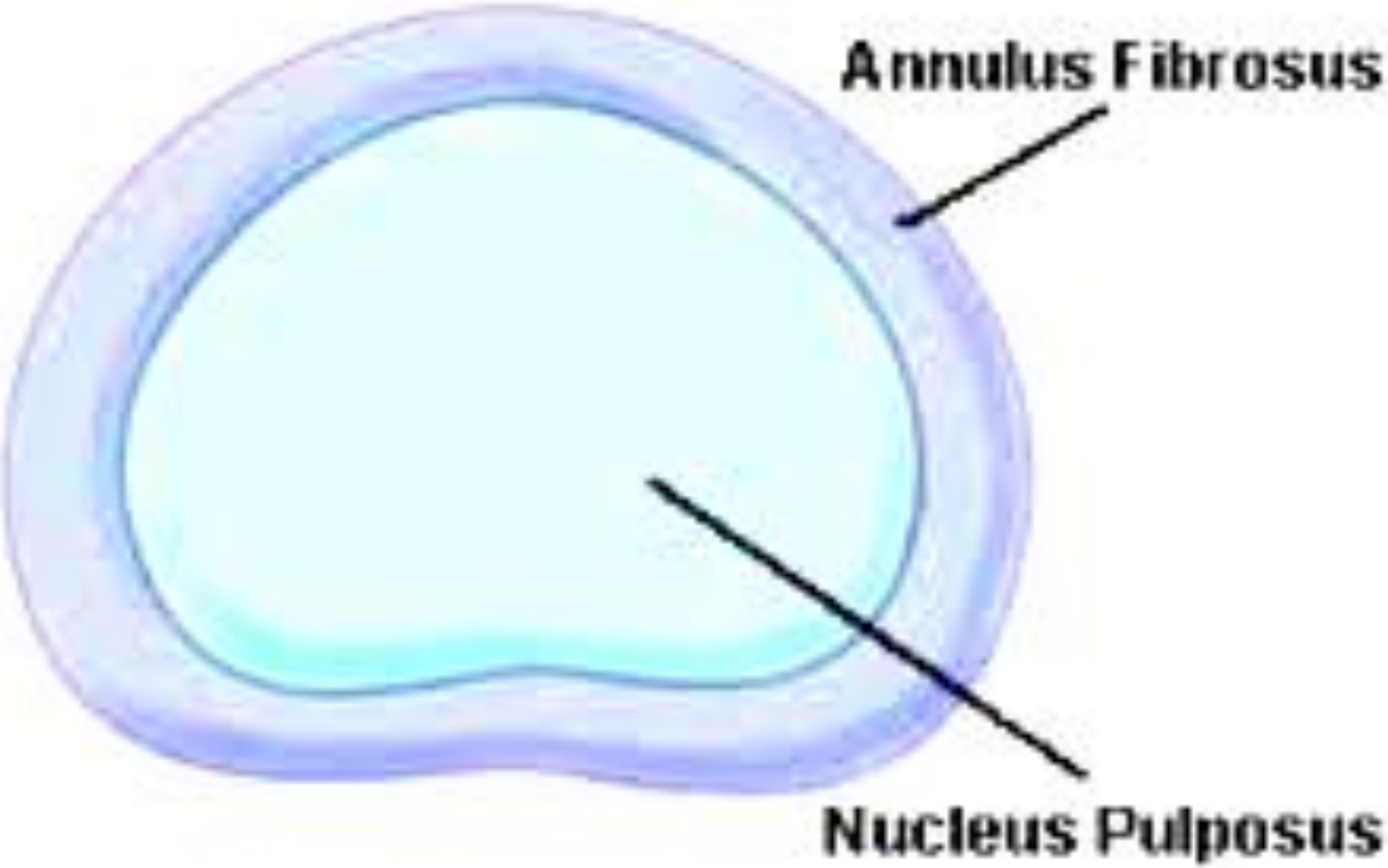

SL 15
6.5 mm
L
FH 18 head


Intervertebral disk
Annulus fibrosus
Vertebrae
Nucleus pulposus
Spinal cord
Vertebrae





Axial (Overhead) View of Intervertebral Disc



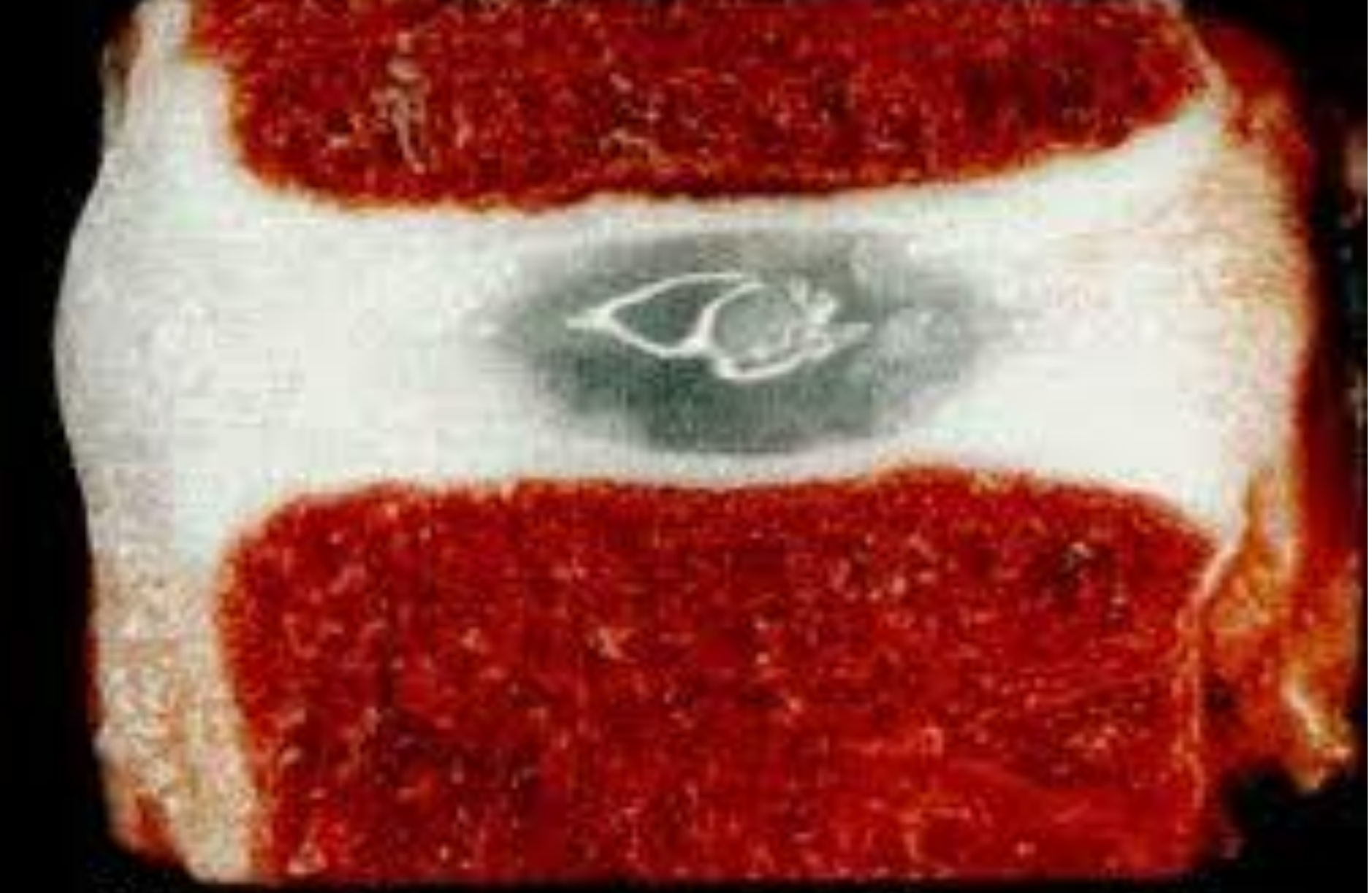
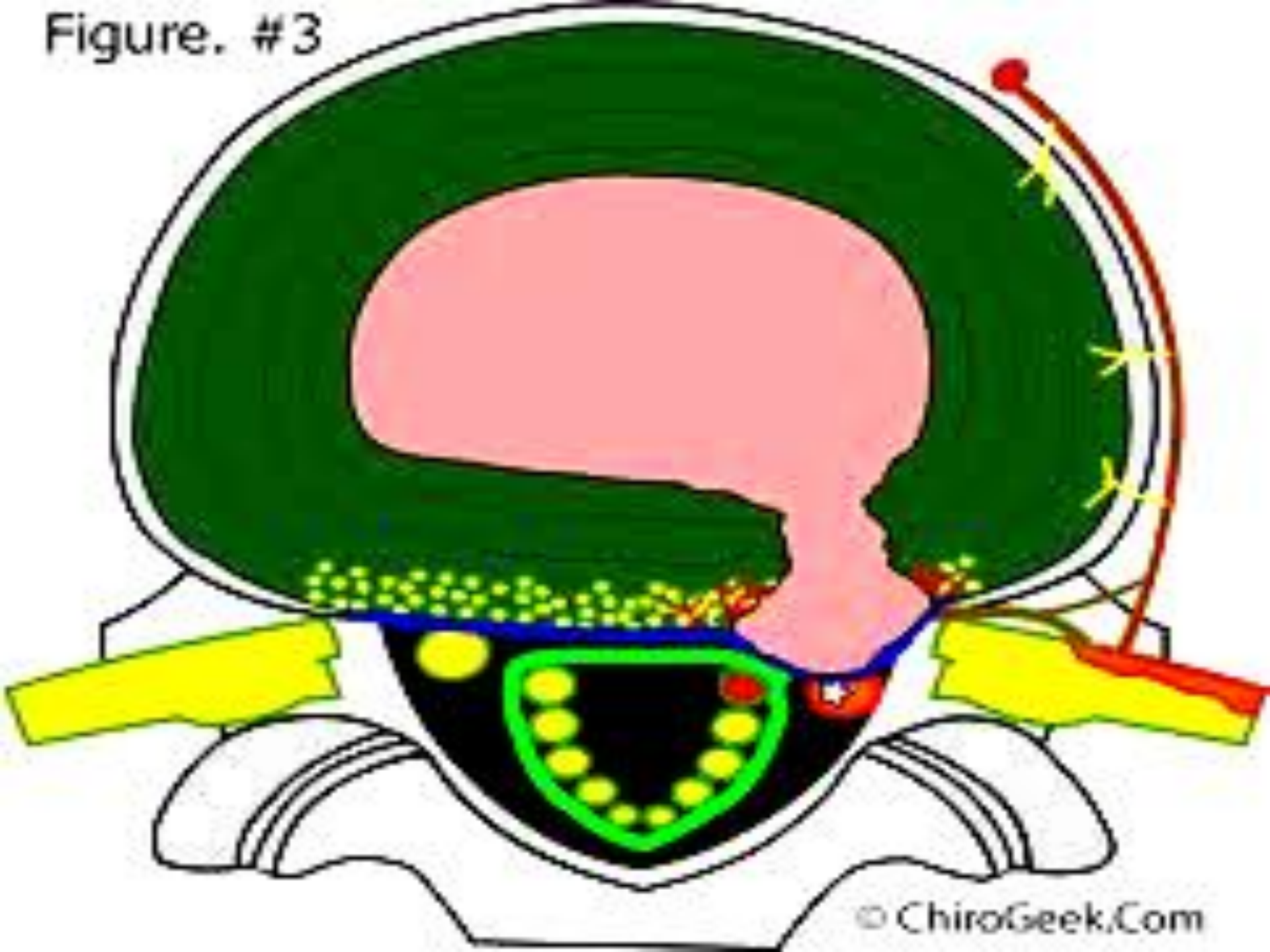
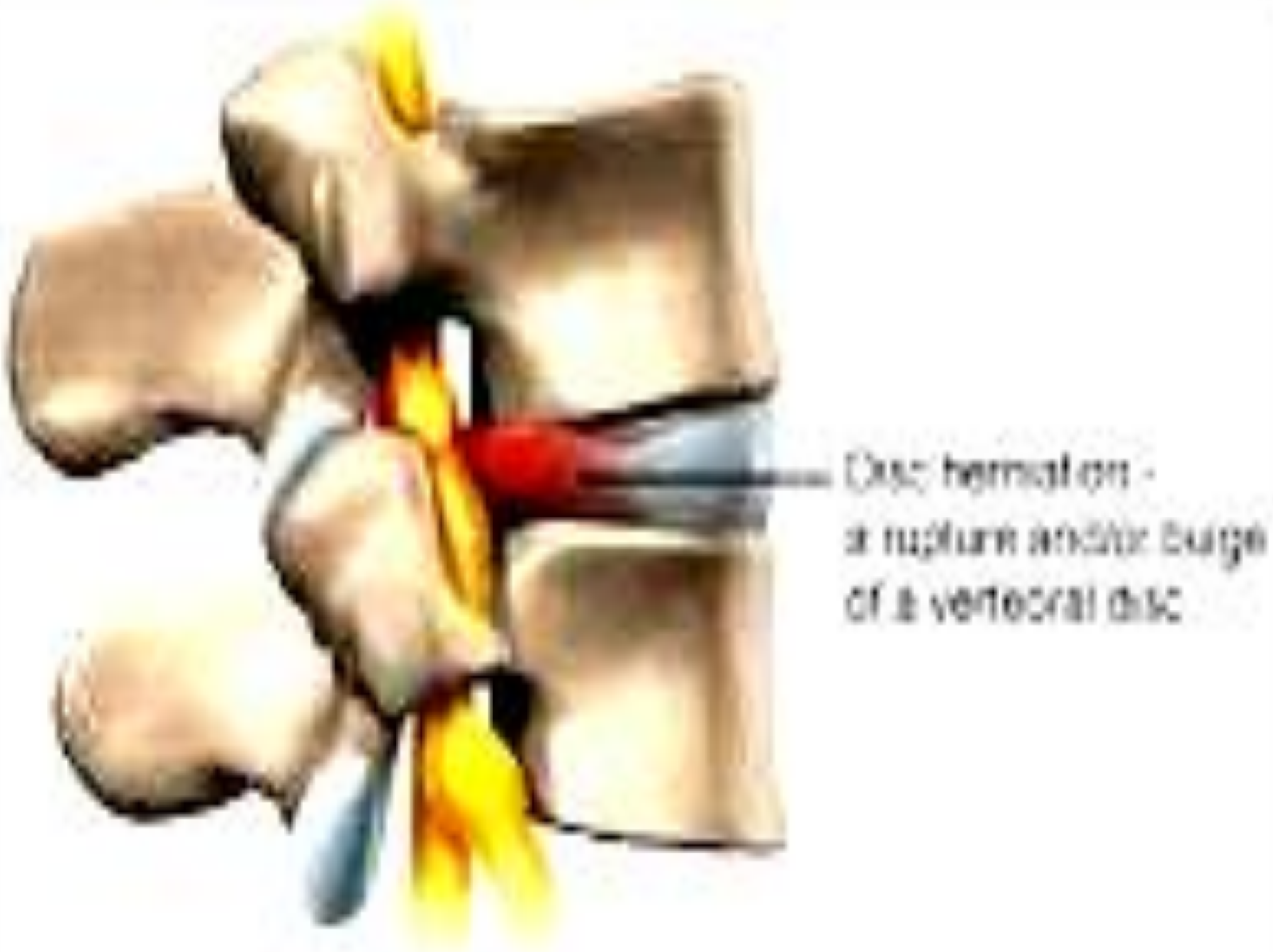


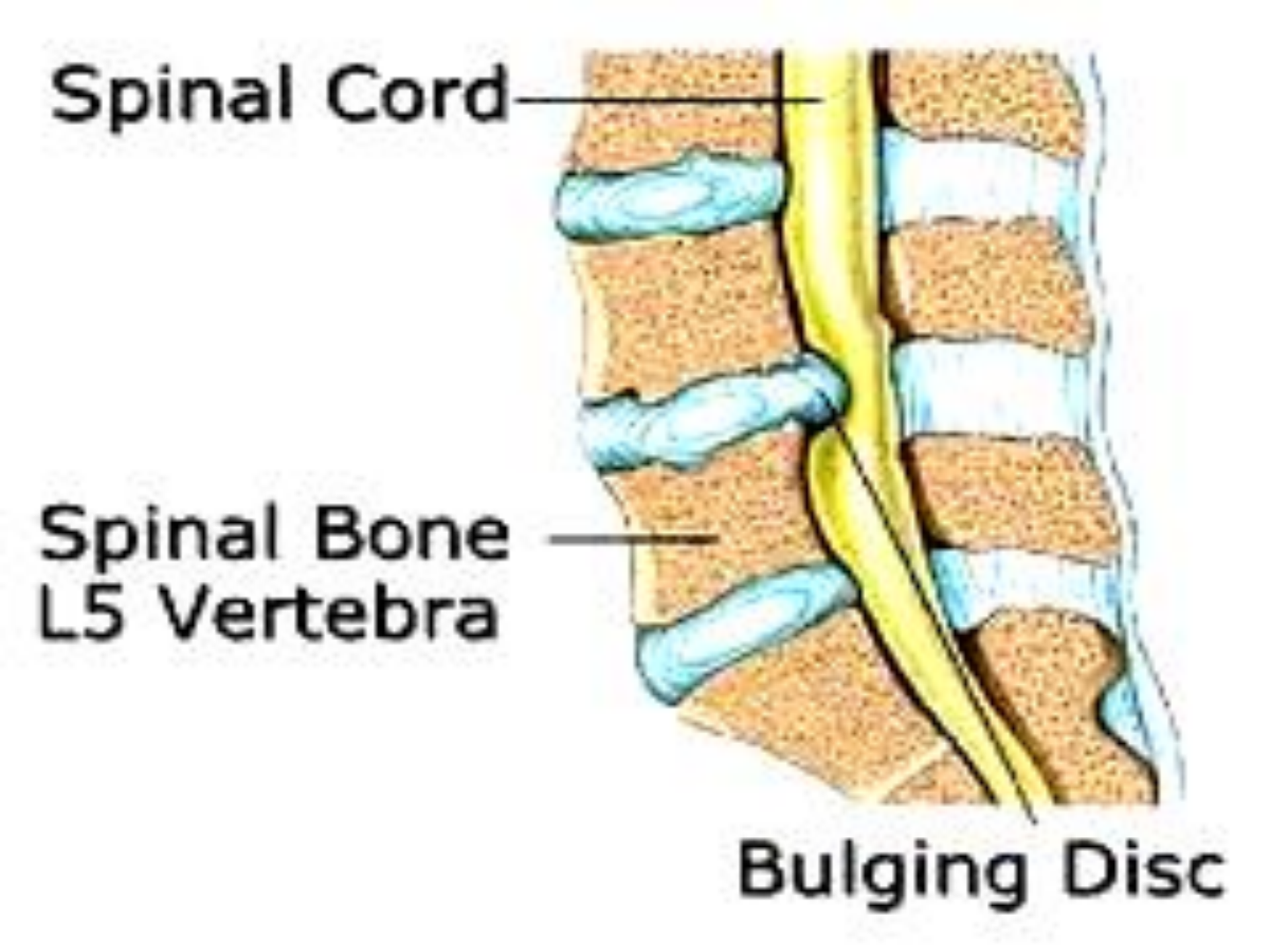
Fig. 3 Teen Disc

Figure. #3

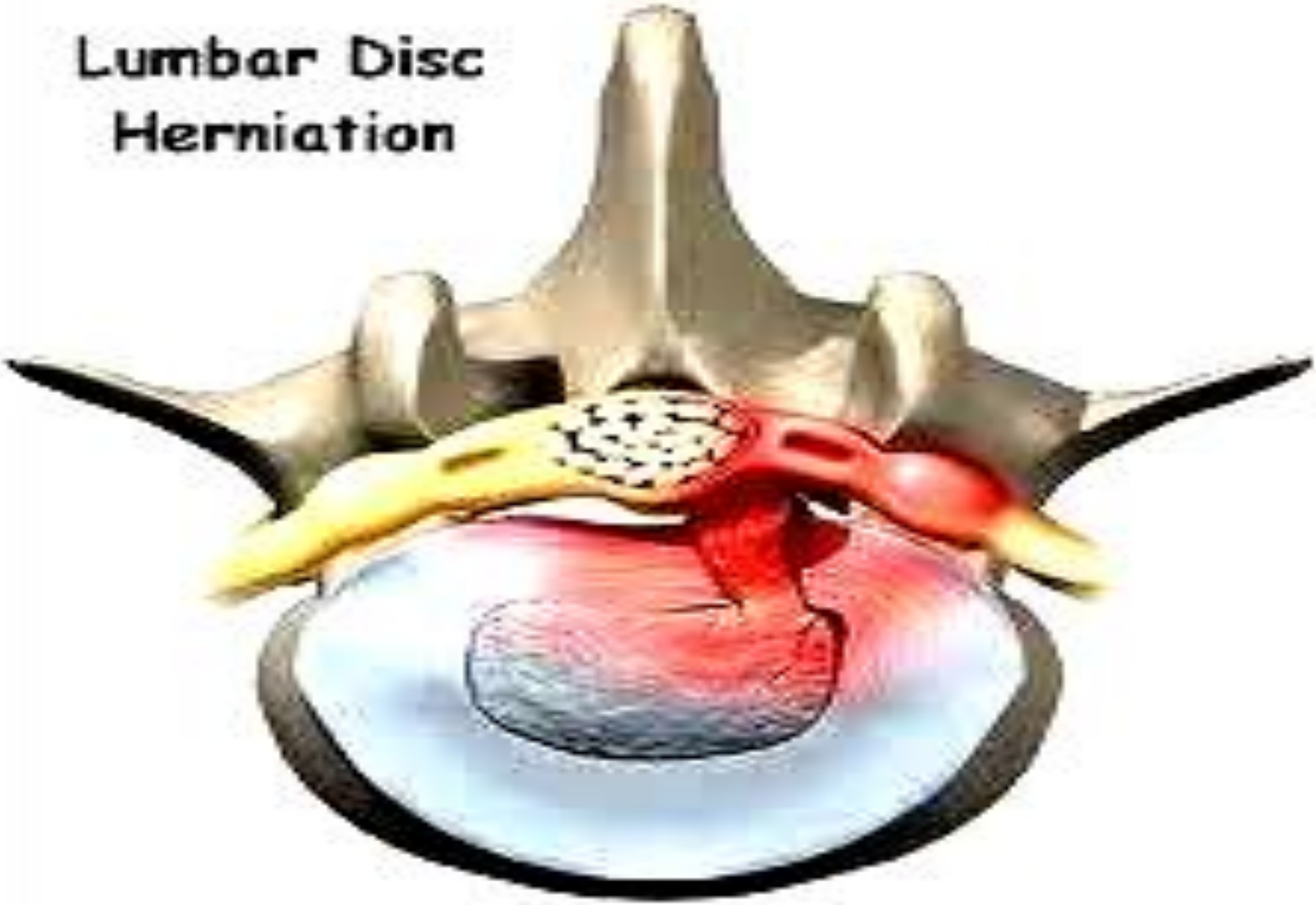


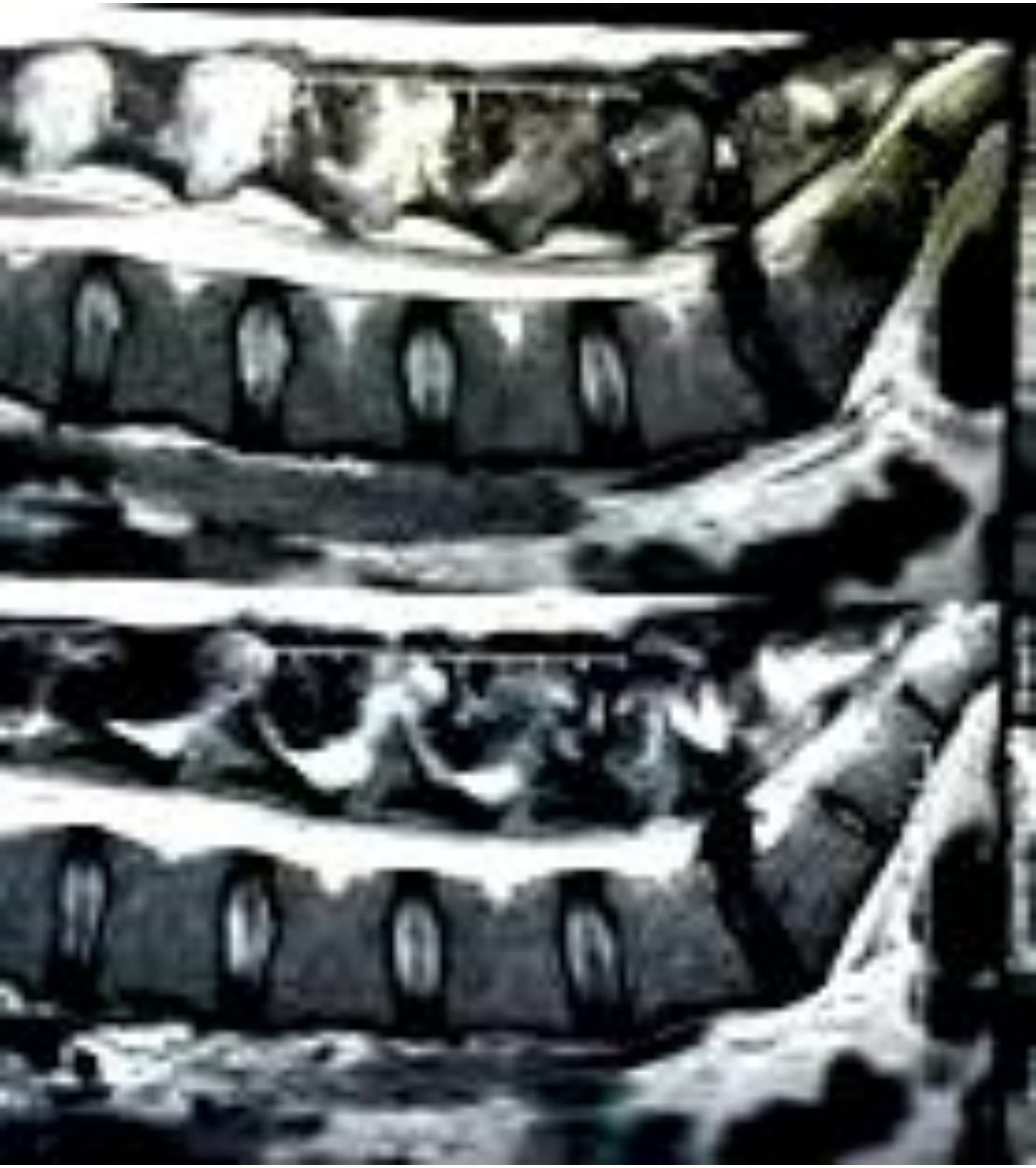

SL 15
6.5 mm
L
FH 18 head


Disc herniation -
a rupture and/or bulge
of a vertebral disc


Spinal Cord
Spinal Bone
L5 Vertebra
Bulging Disc

Lumbar Disc Herniation



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6.5 mm
L
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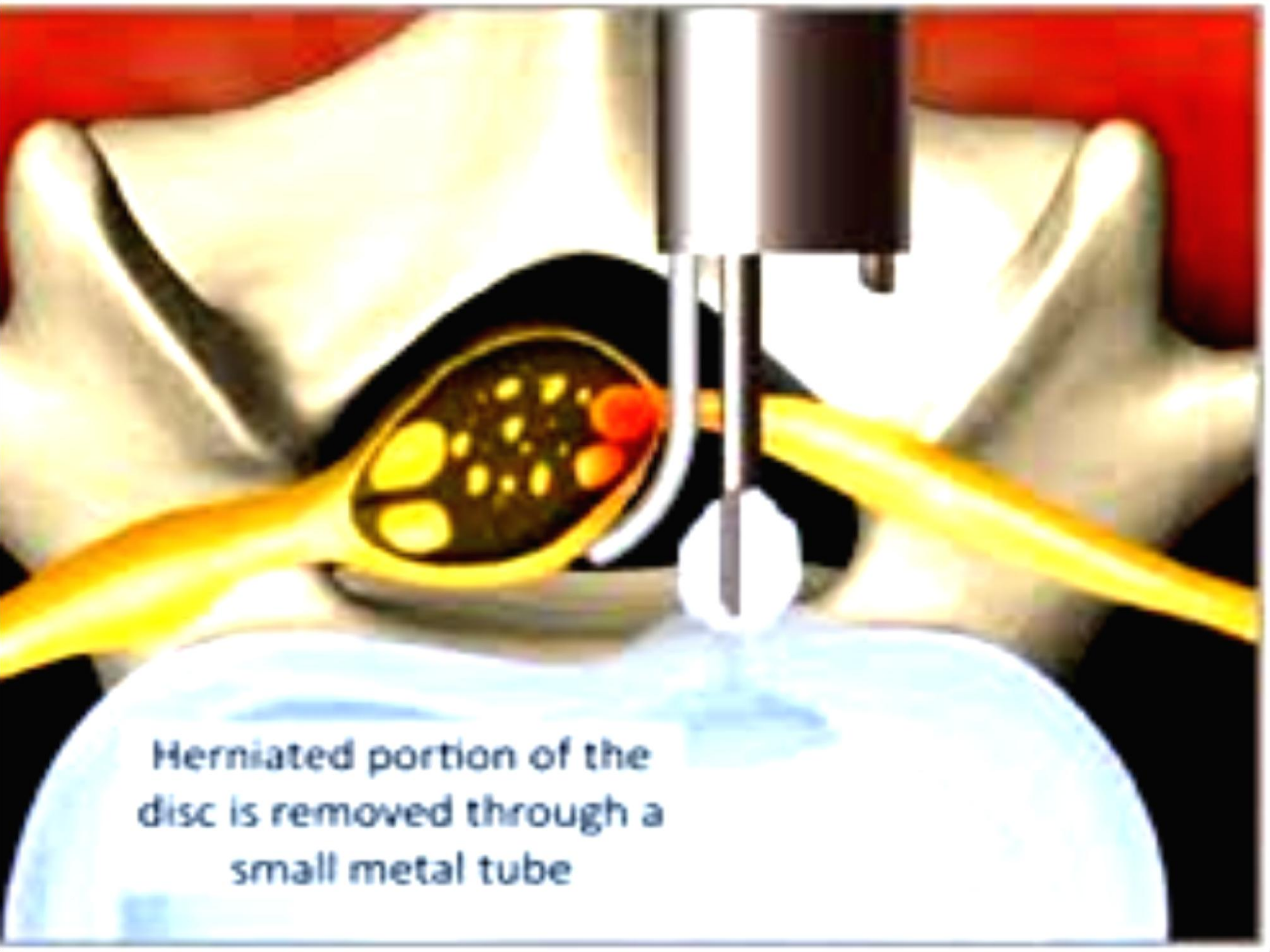
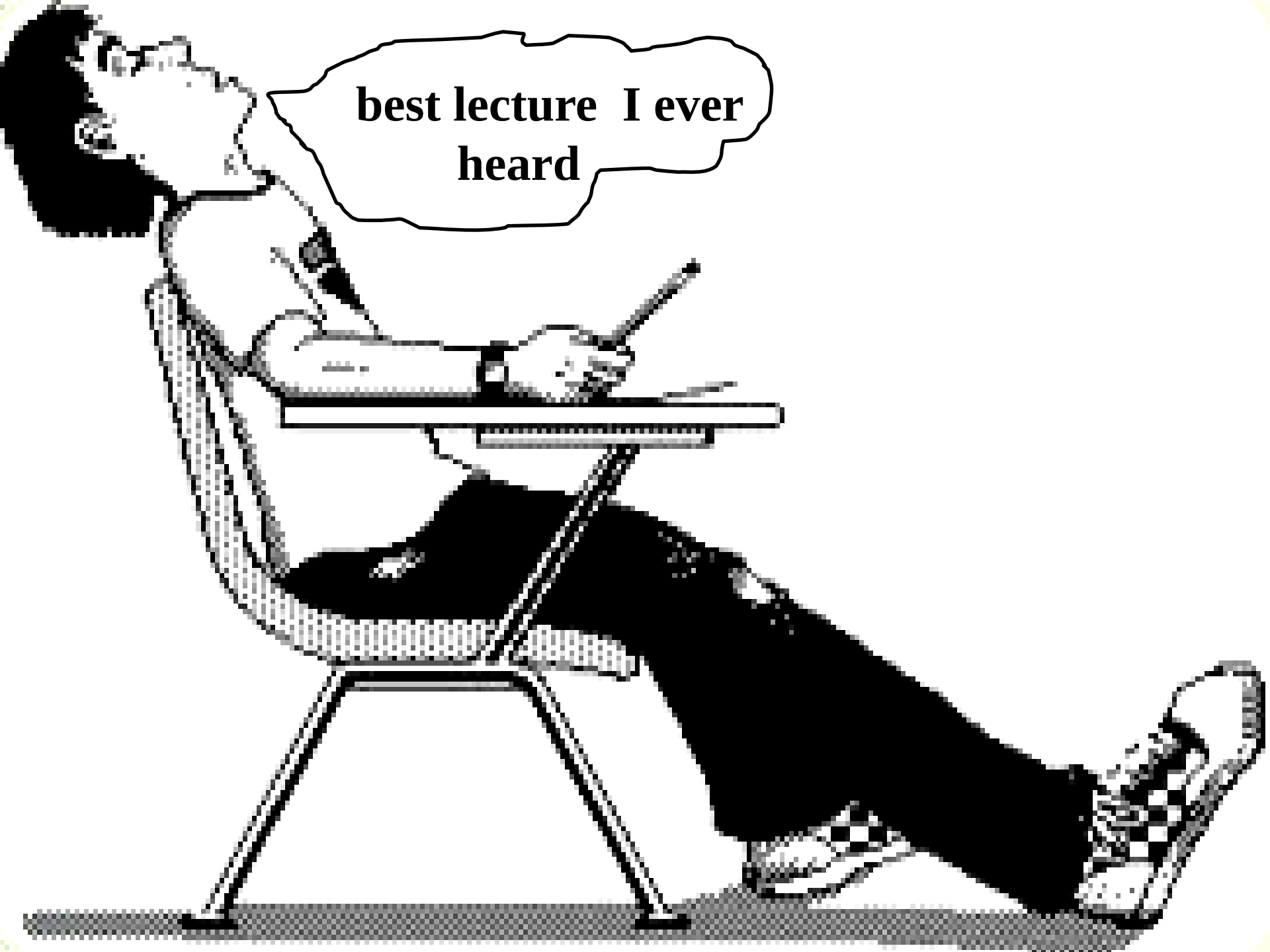

Herniated portion of the
disc is removed through a
small metal tube

Objective of Learning

- 1-what is the anatomical structure of the vertebral segment
- 2- what is the histological structure of the disc
- 3-discuss cutaneous nerves and dermatomes of the lower extremity
- 4-discuss physiology of nerve function
- 5- discuss the regeneration and degeneration of nerve injury


best lecture I ever heard

Thank you for your attendance