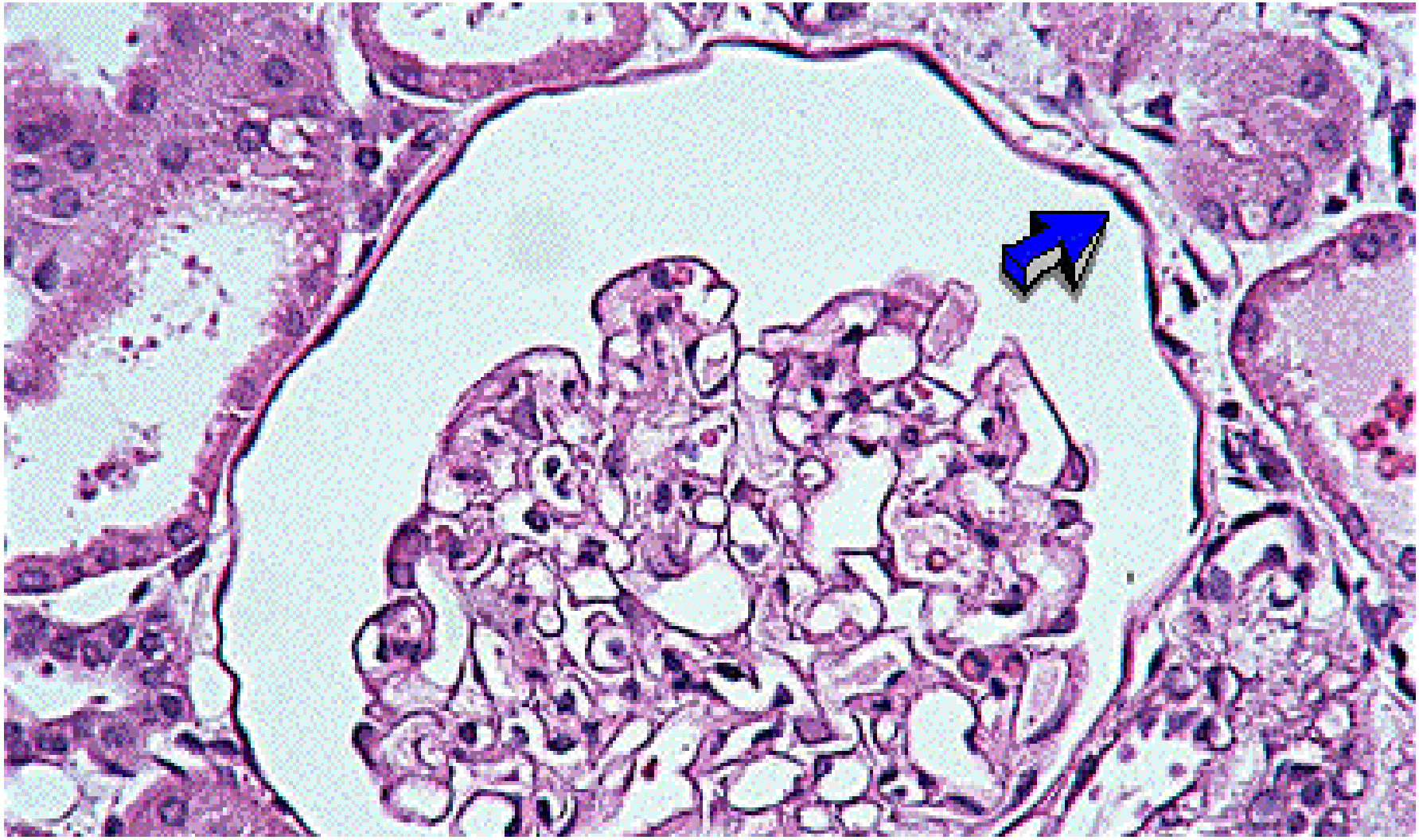
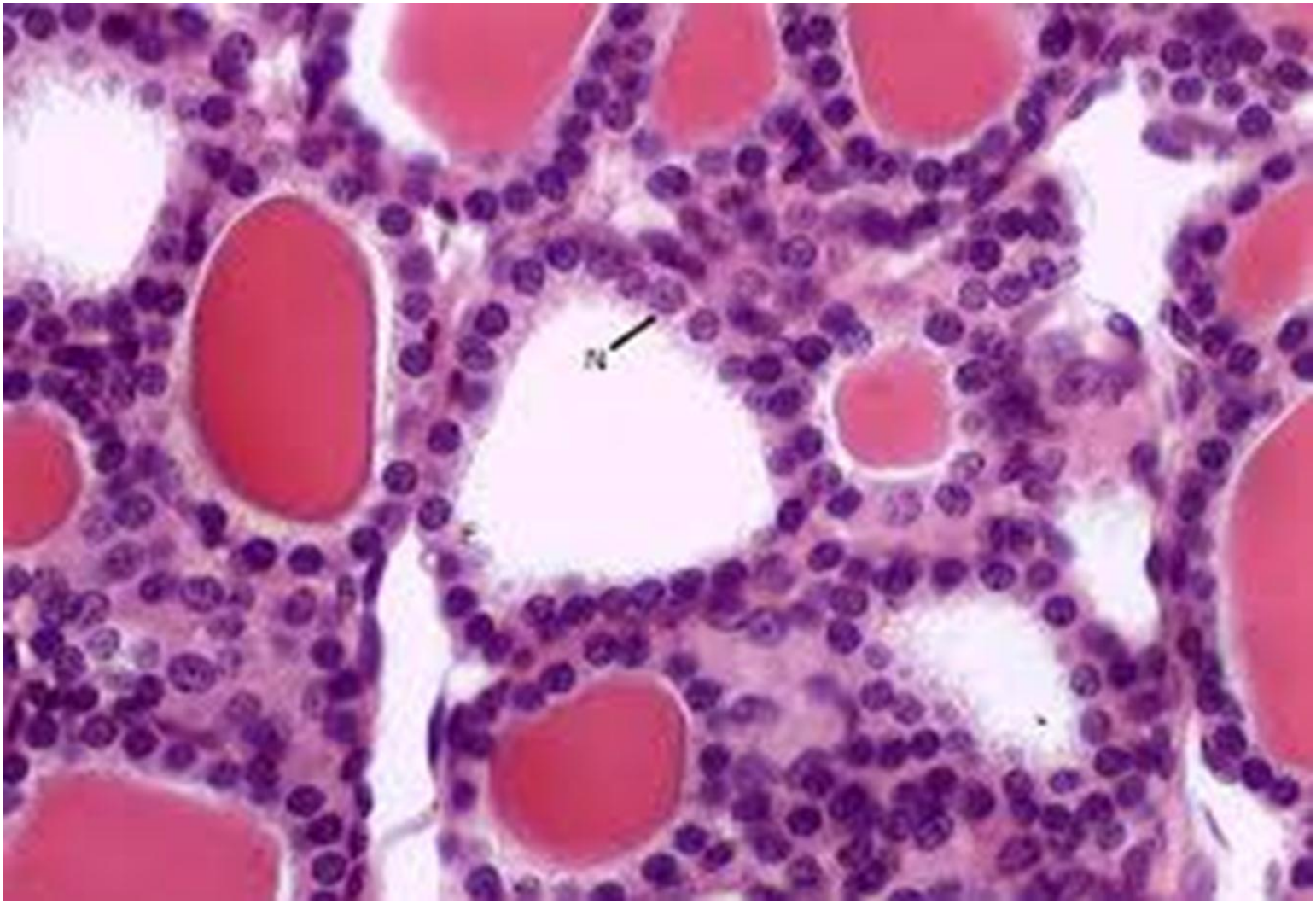
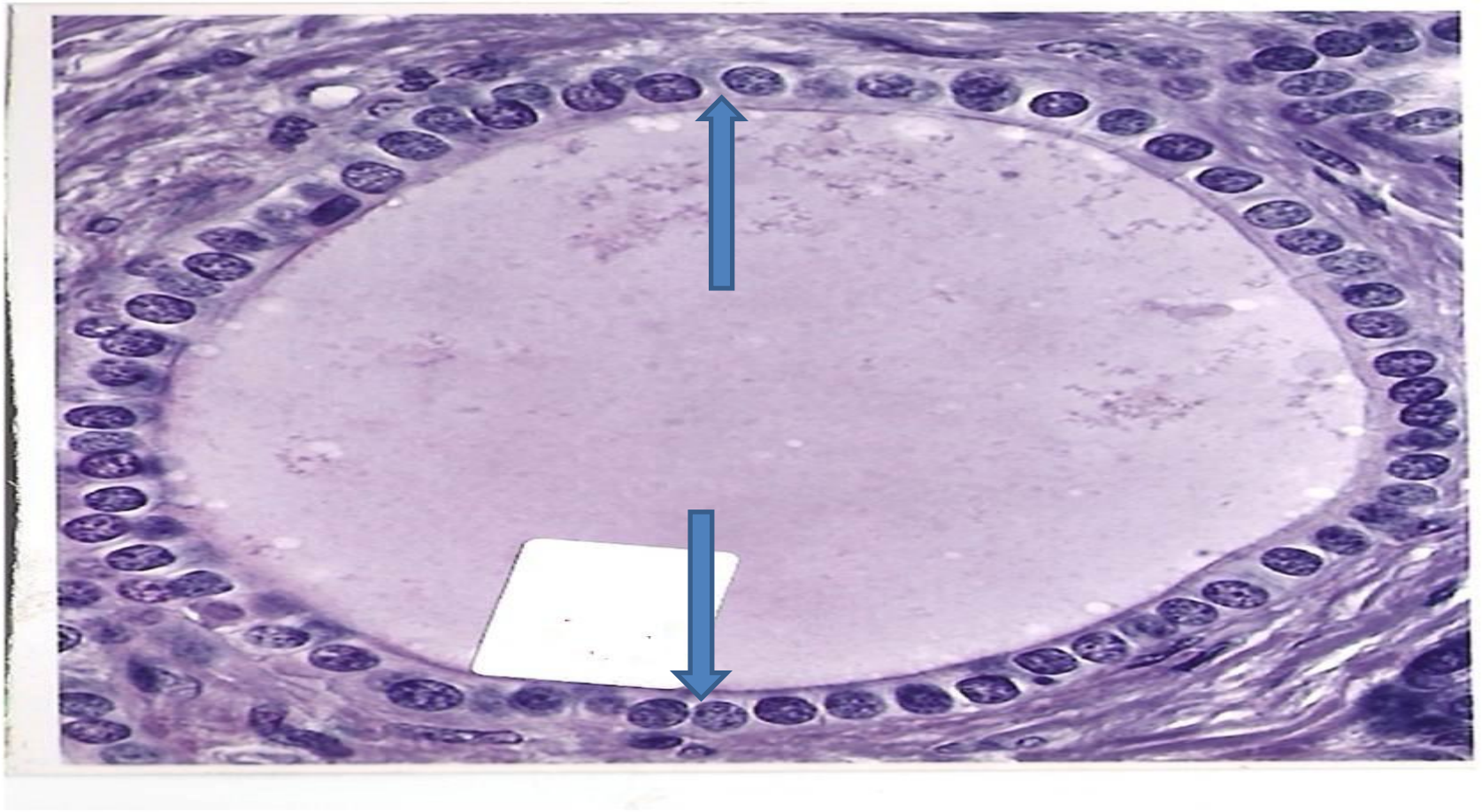
Simple squamous epith



Simple cuboidal
In thyroid



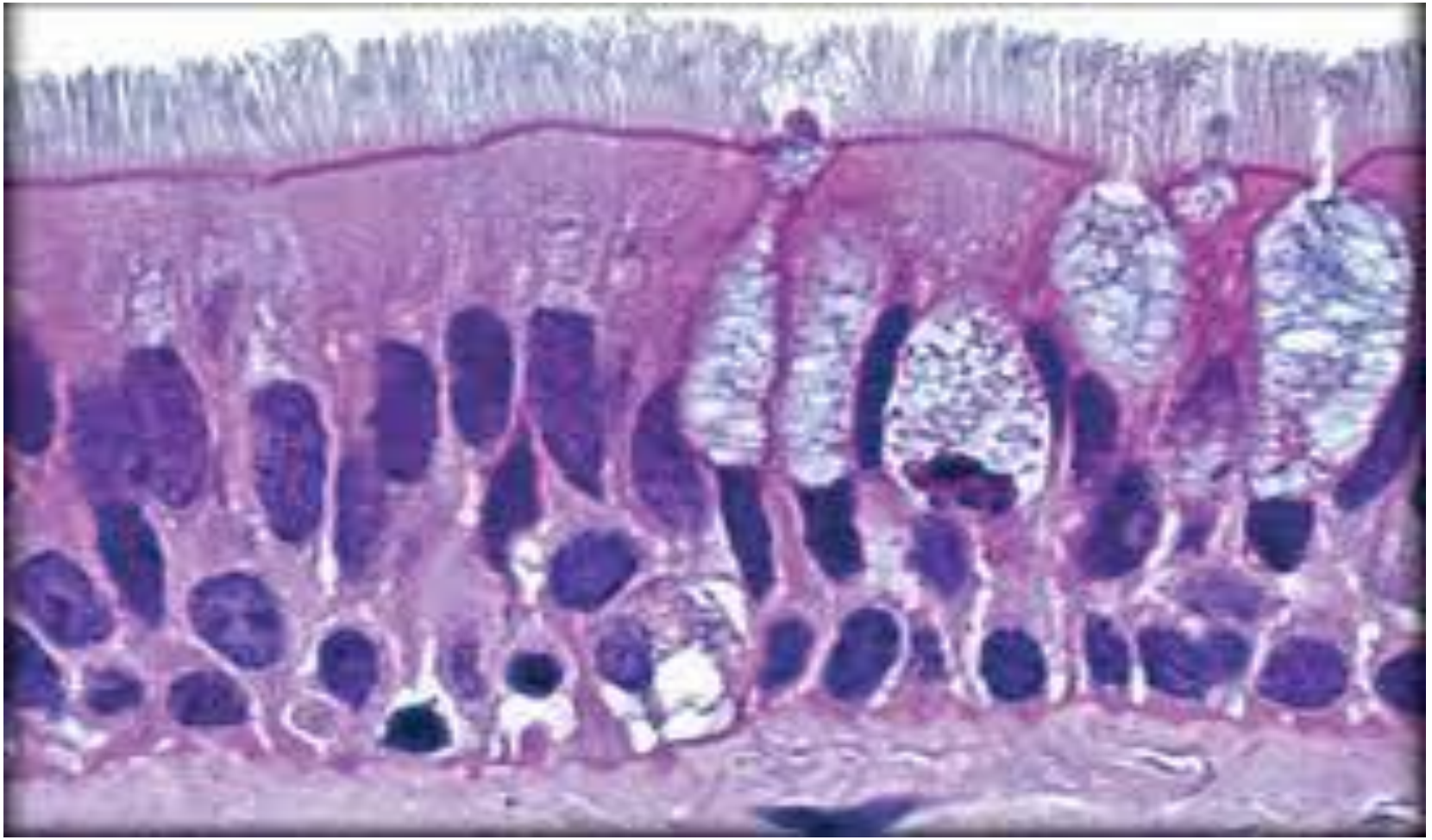
Simple cuboidal
In thyroid



Simple columnar

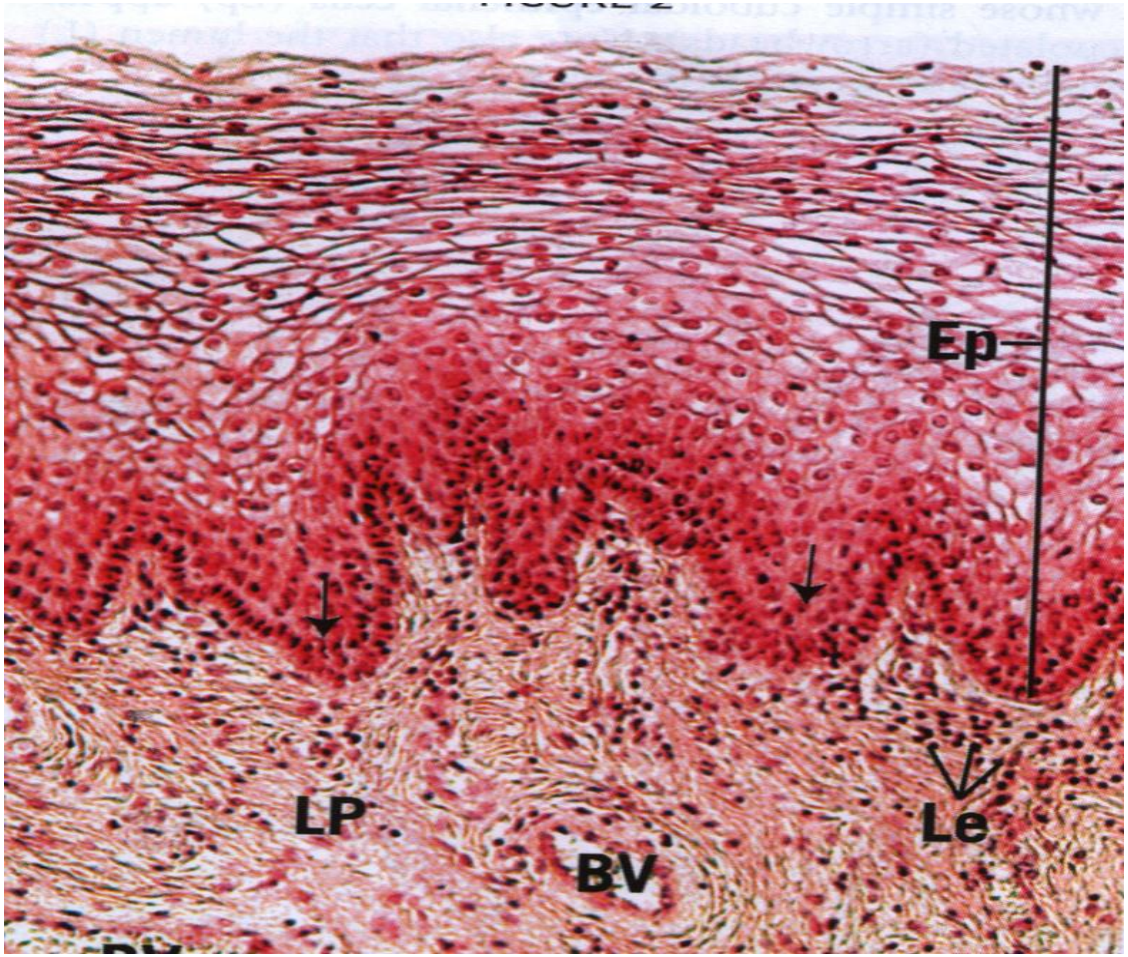
Pseudostratified columnar ciliated

Pseudostratified columnar ciliated

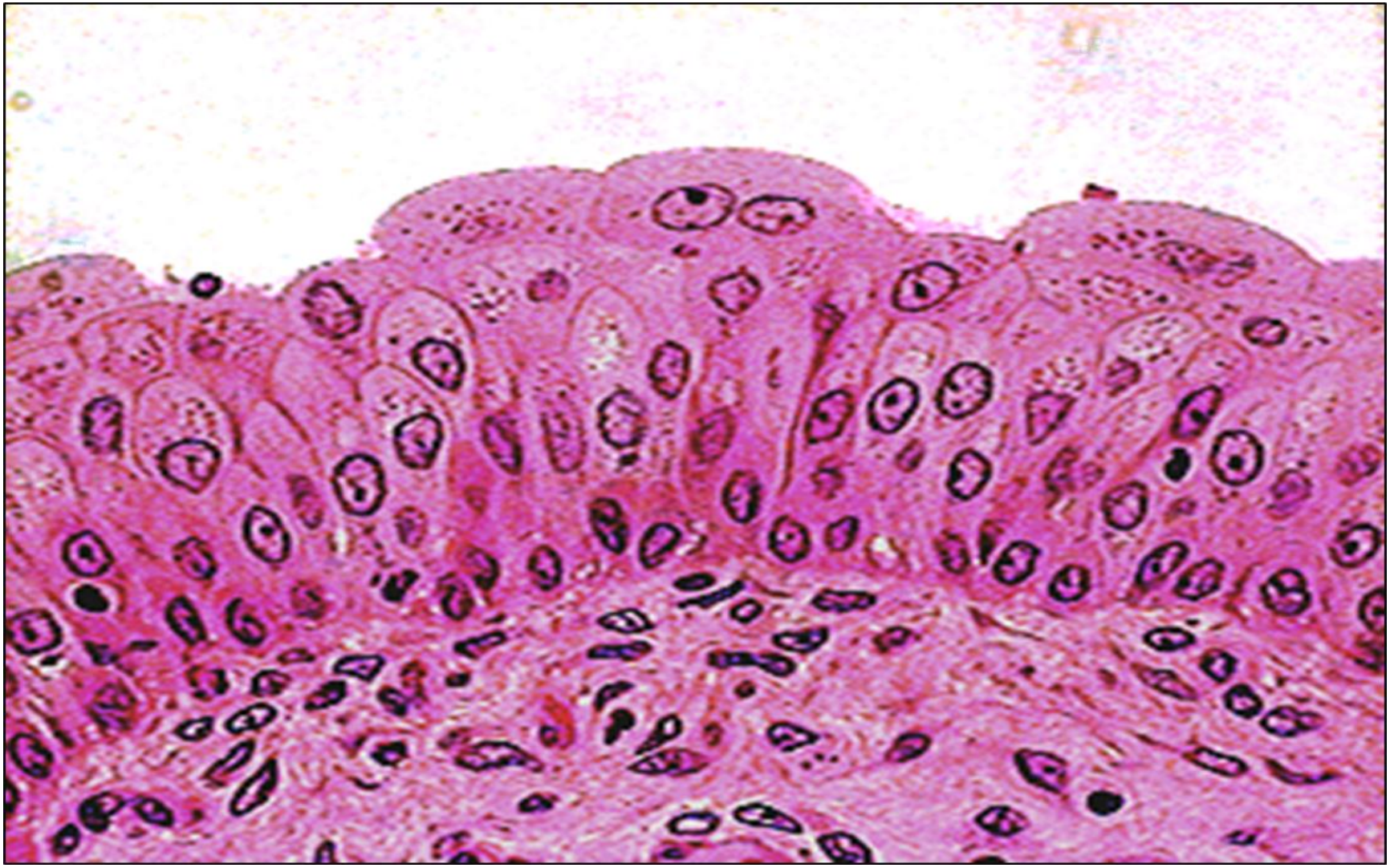


Keratinized
Stratified squamous
In skin

Non Keratinized Stratified squamous



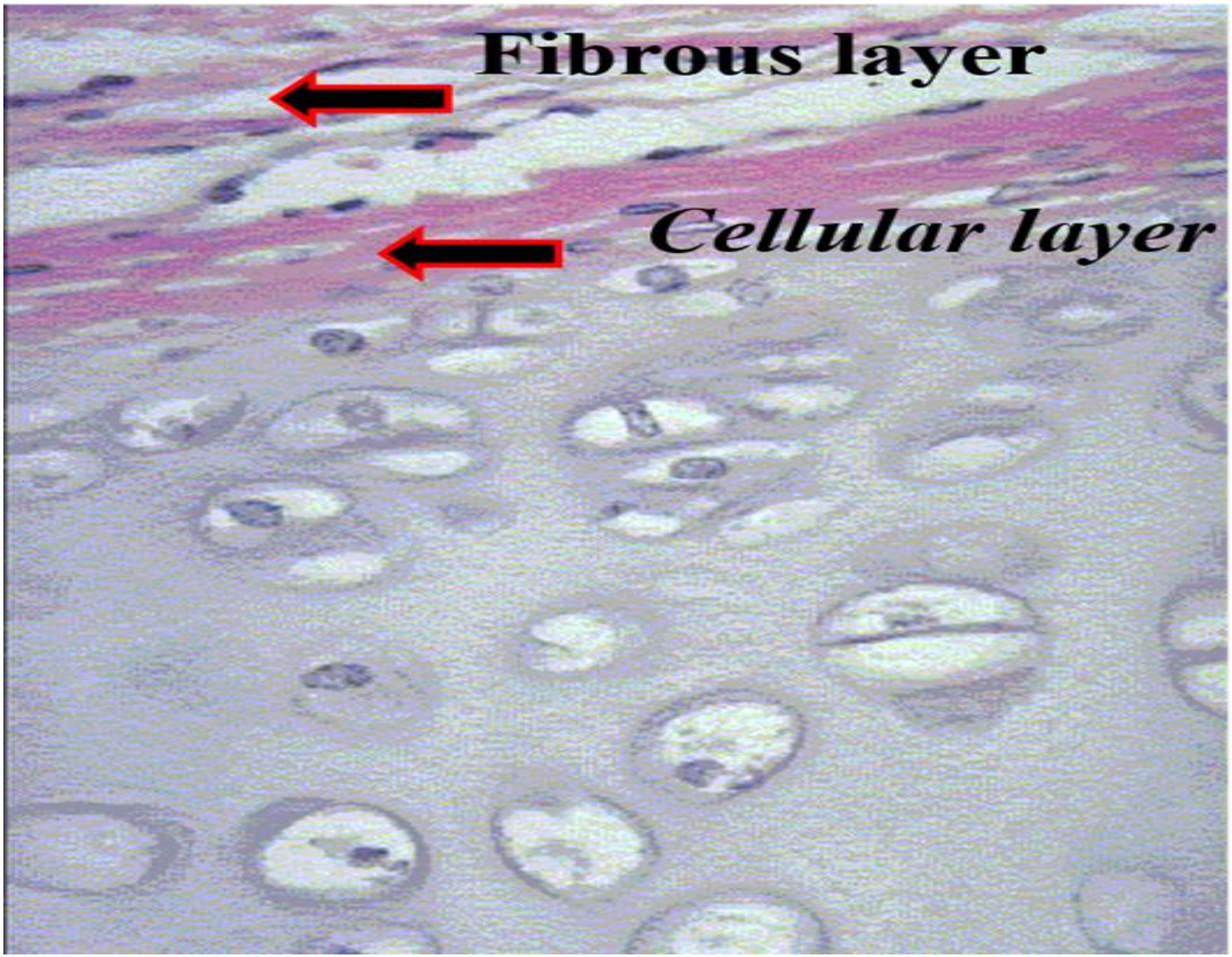
Transitional epithelium
In urinary bladder



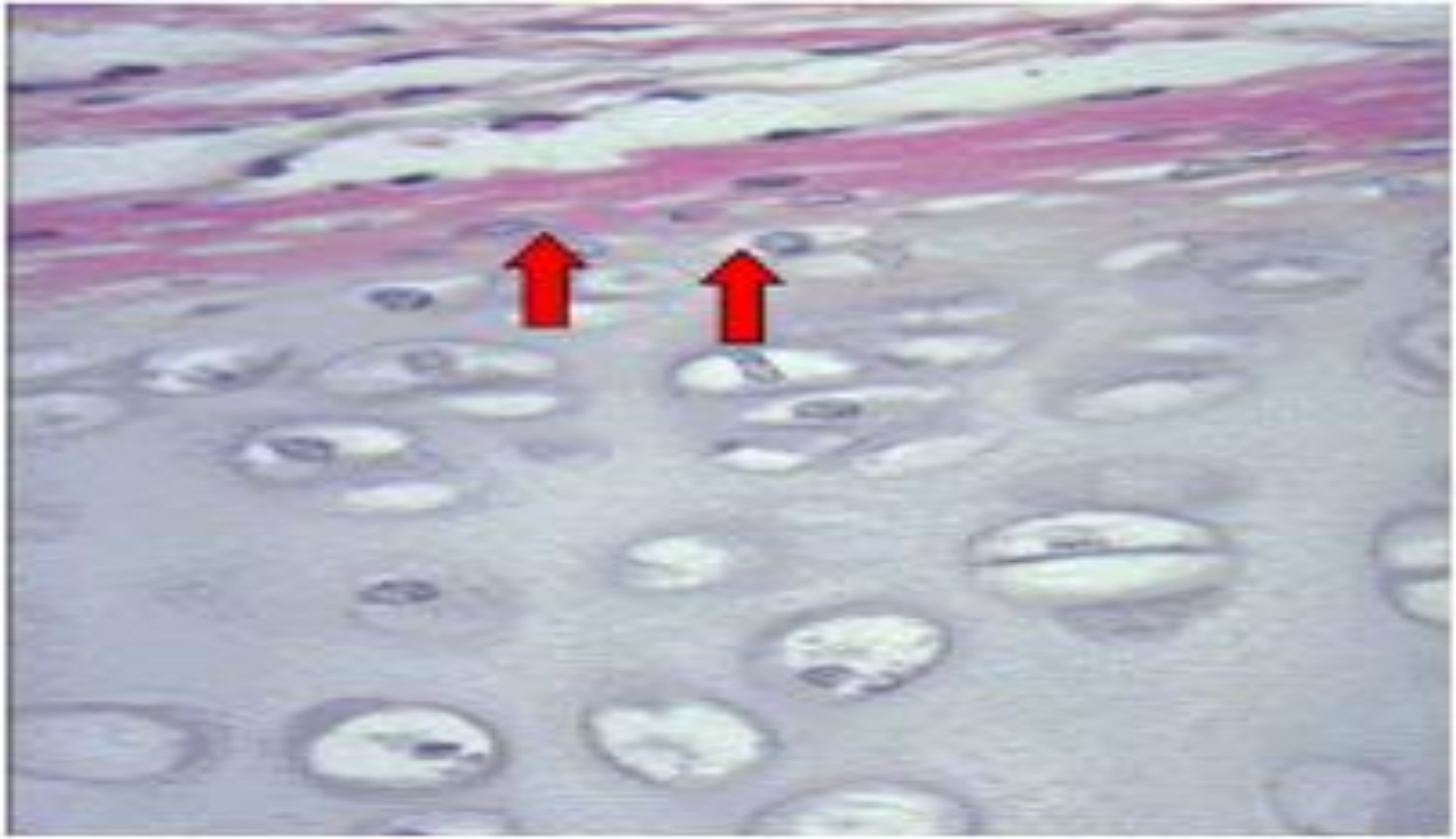
Tubular gland + goblet cell

Sebaceous gland

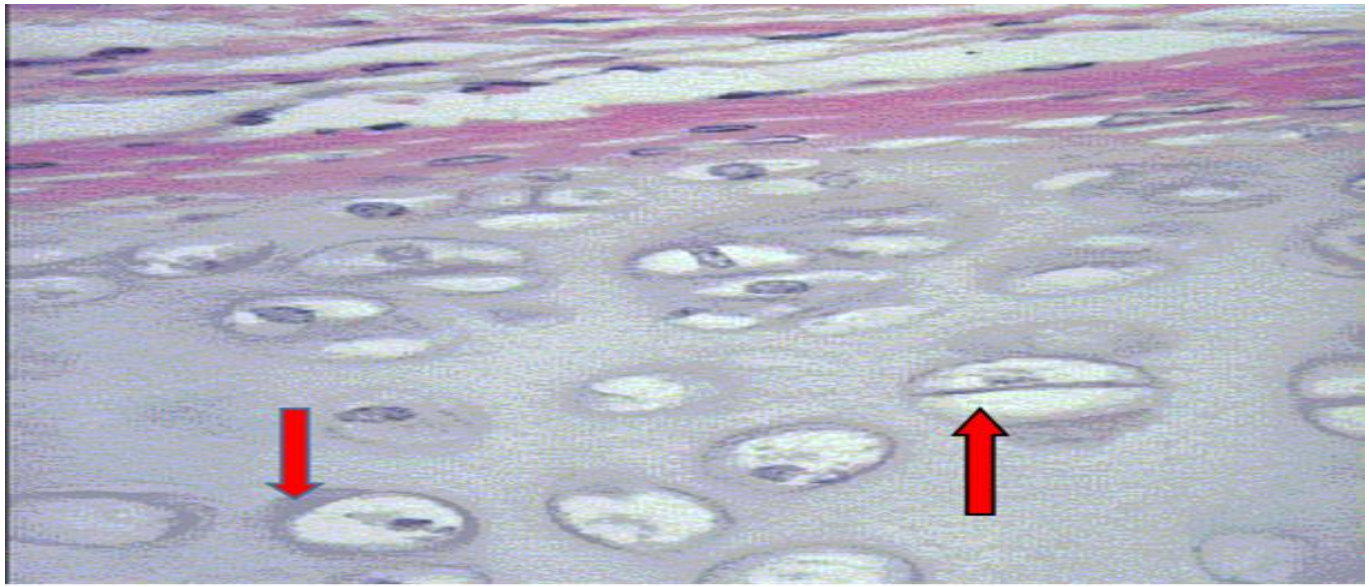
PERICHONDRIUM

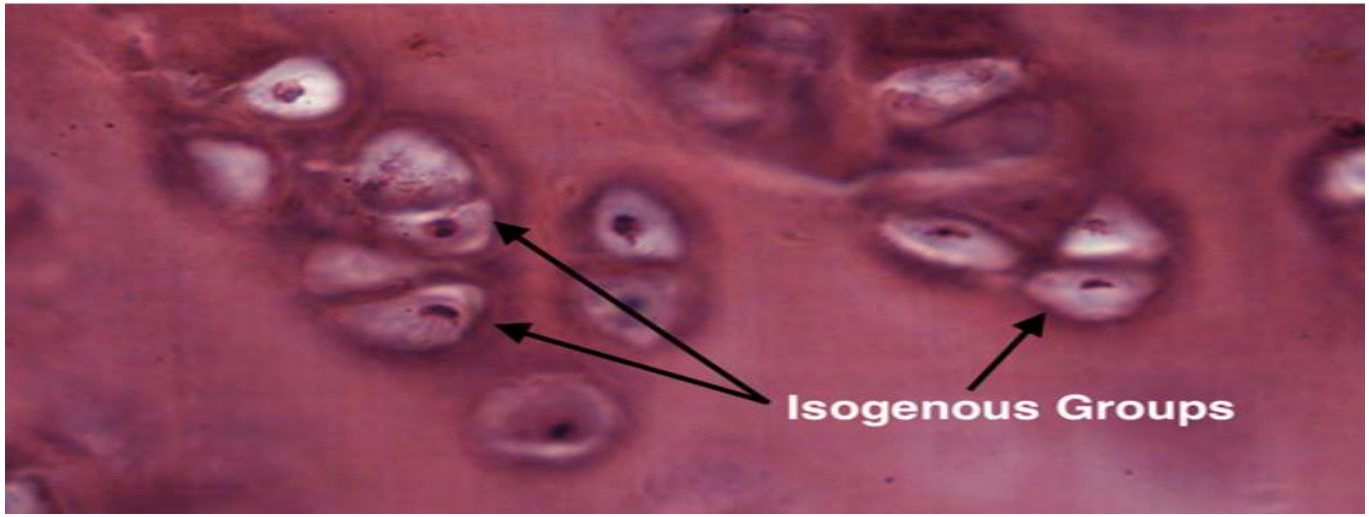


Chondroblast

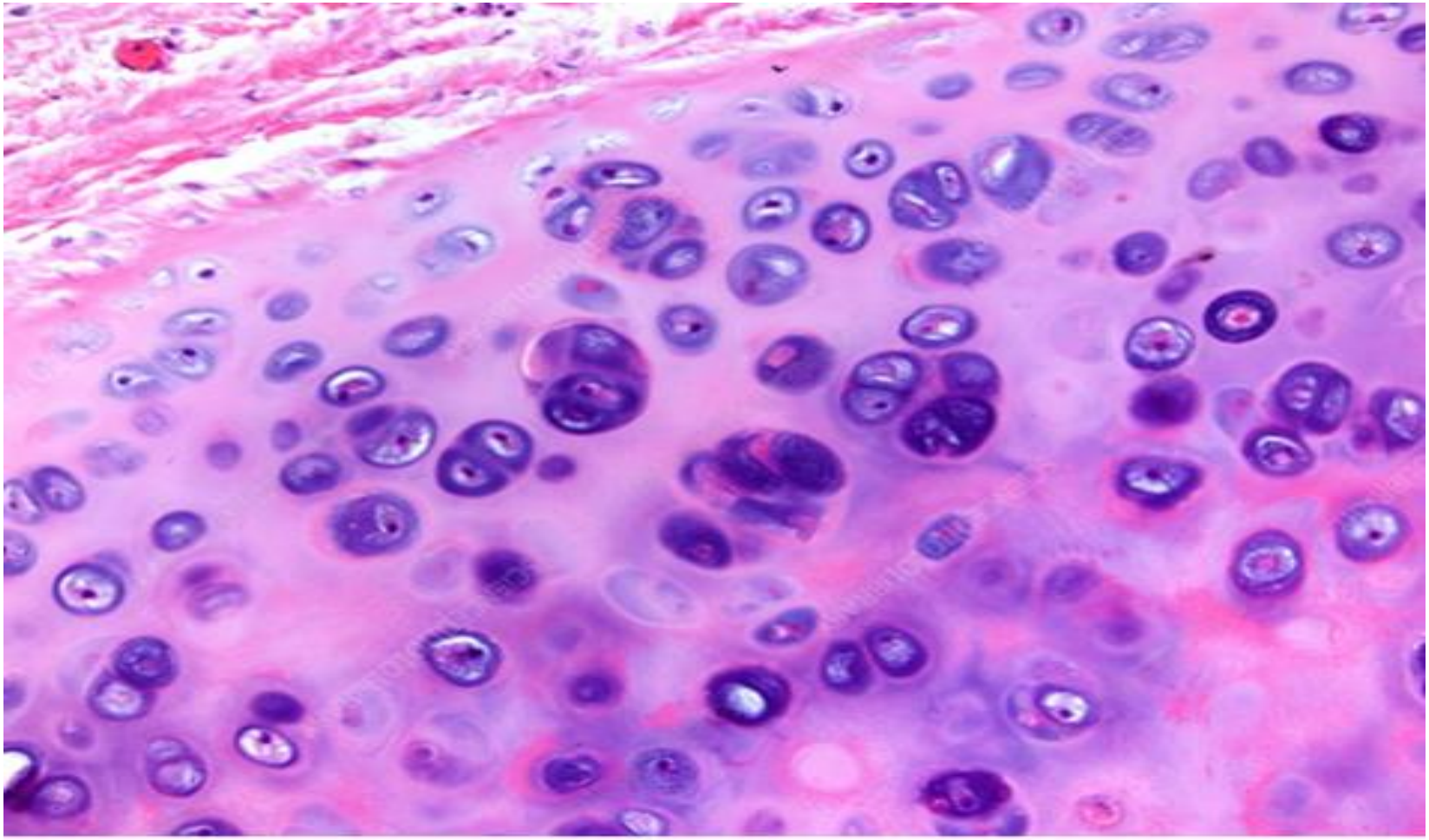


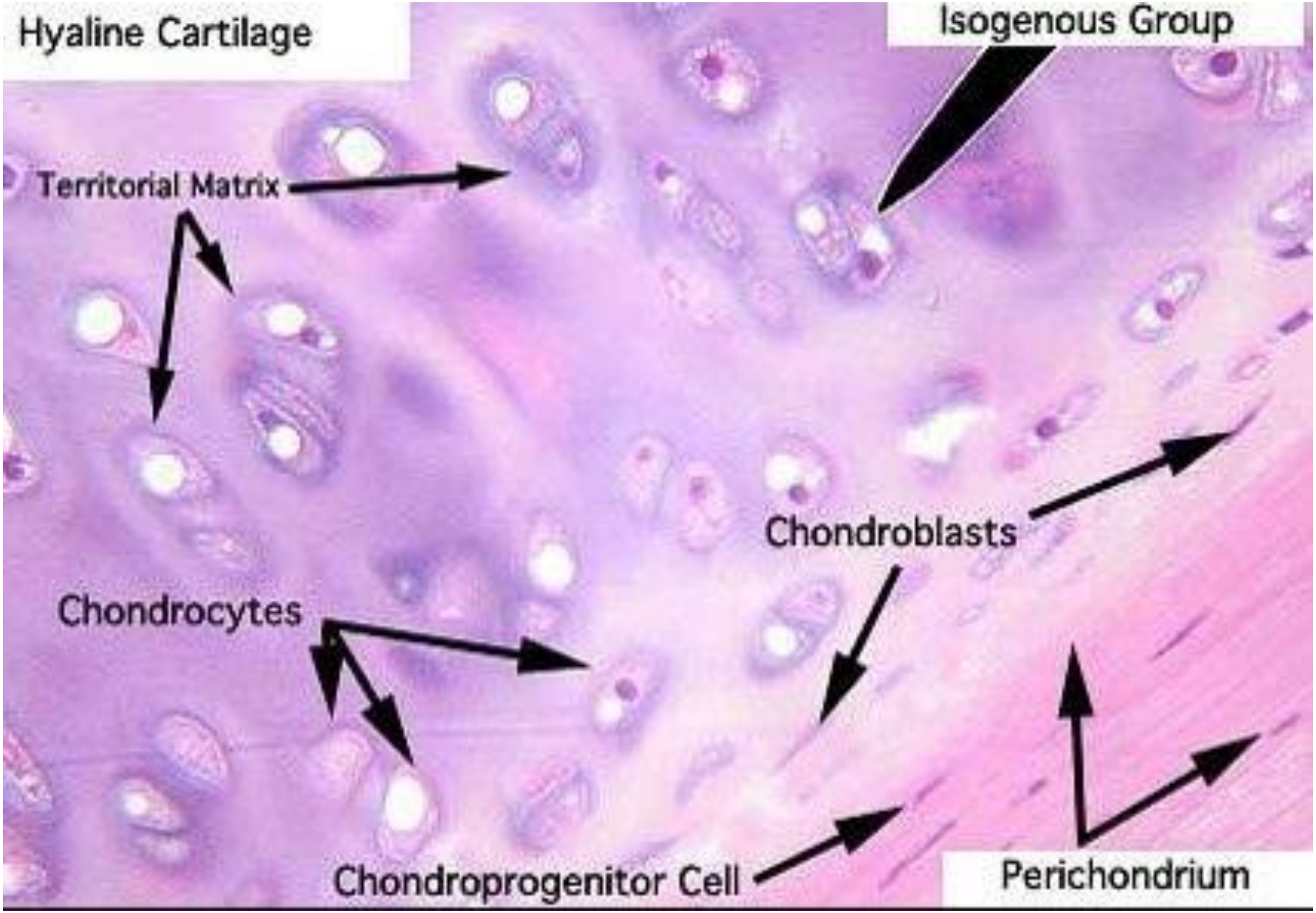
Chondrocytes



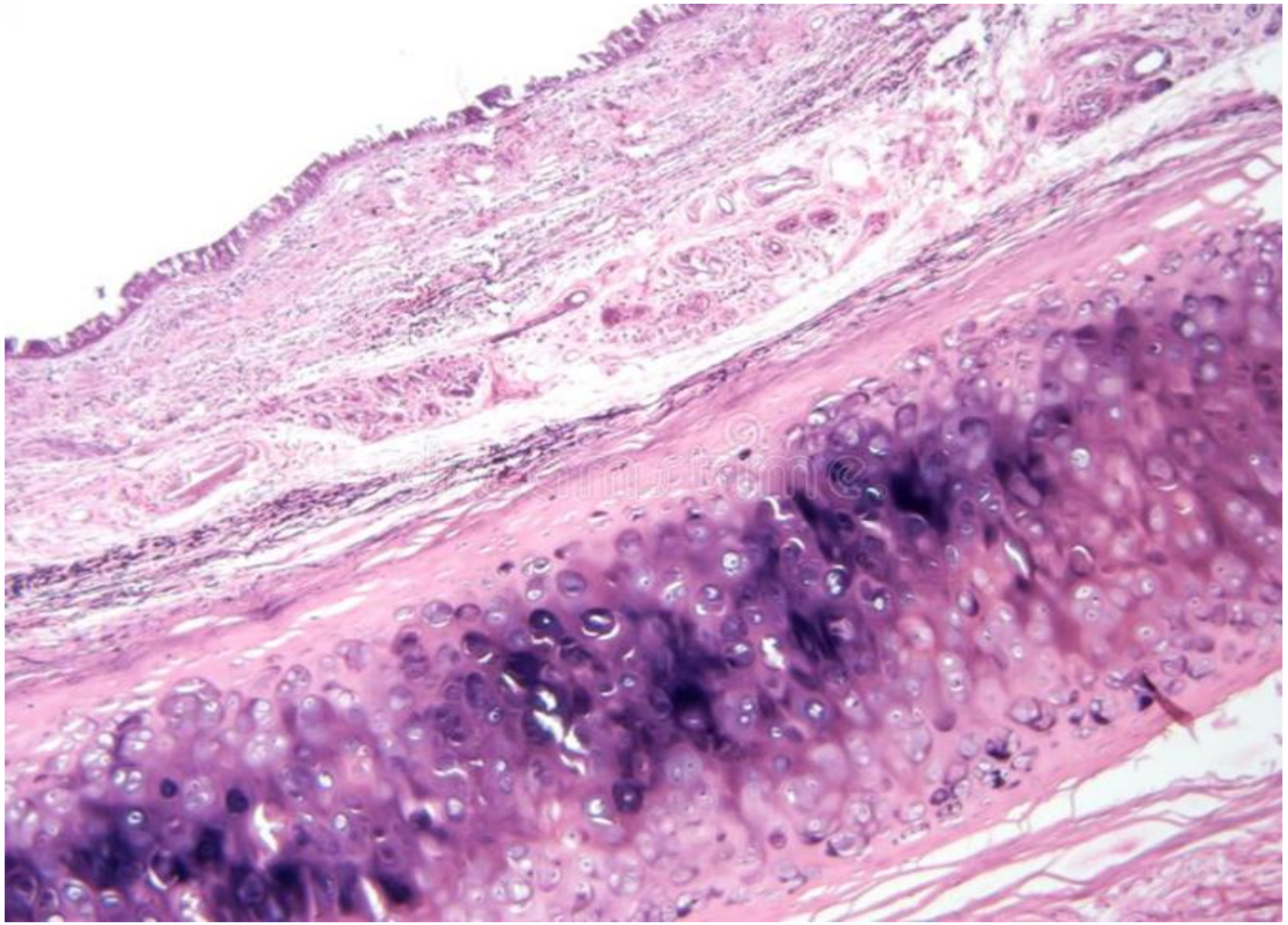


HYALINE CARTILAGE

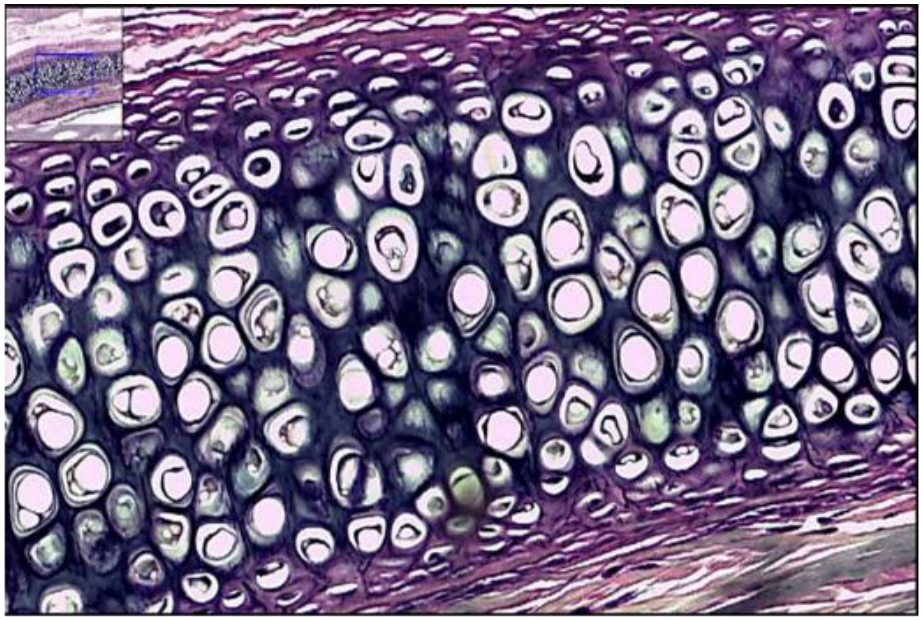


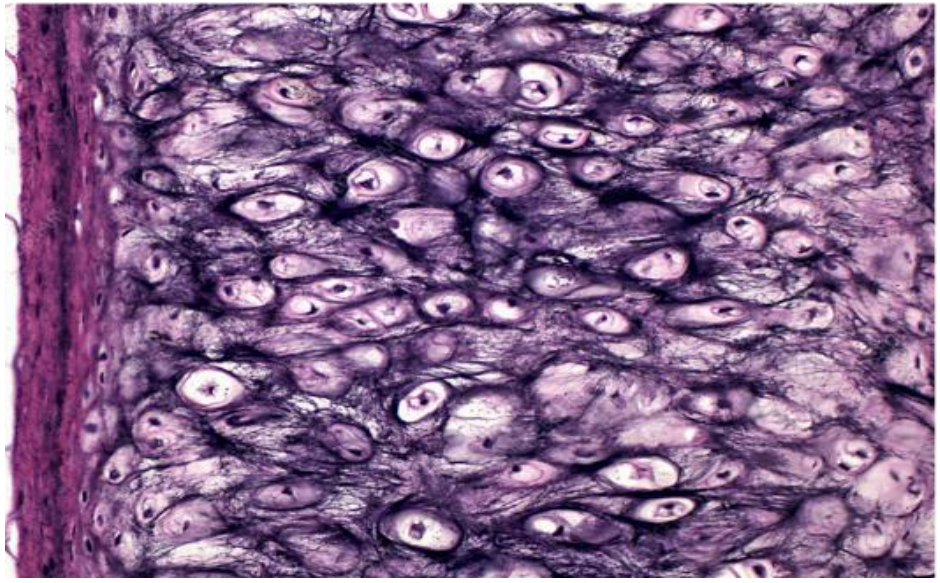

Hyaline Cartilage
Isogenous Group
Territorial Matrix
Chondroblasts
Chondrocytes
Chondroprogenitor Cell
Perichondrium

ELASTIC CARTILAGE

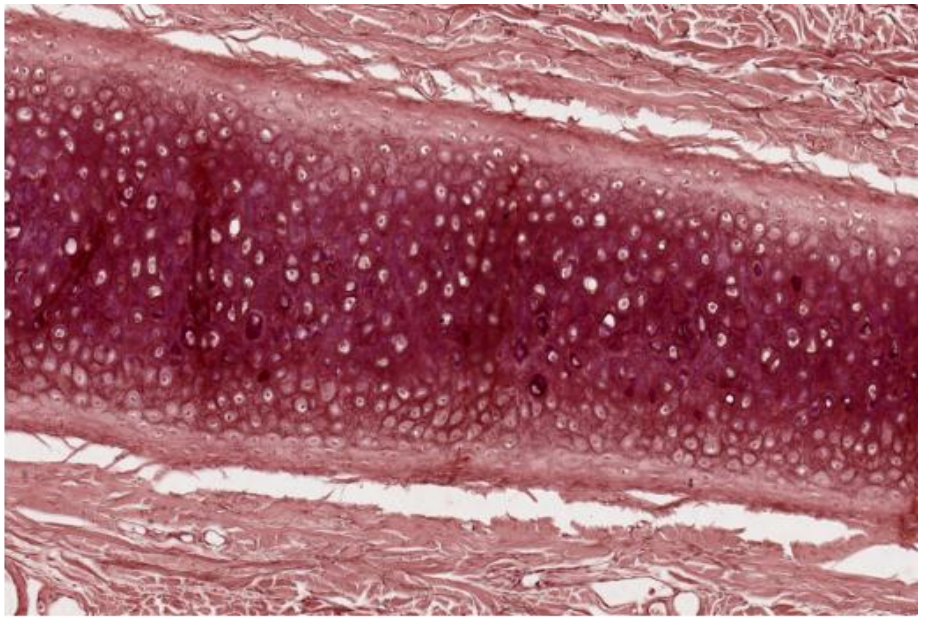


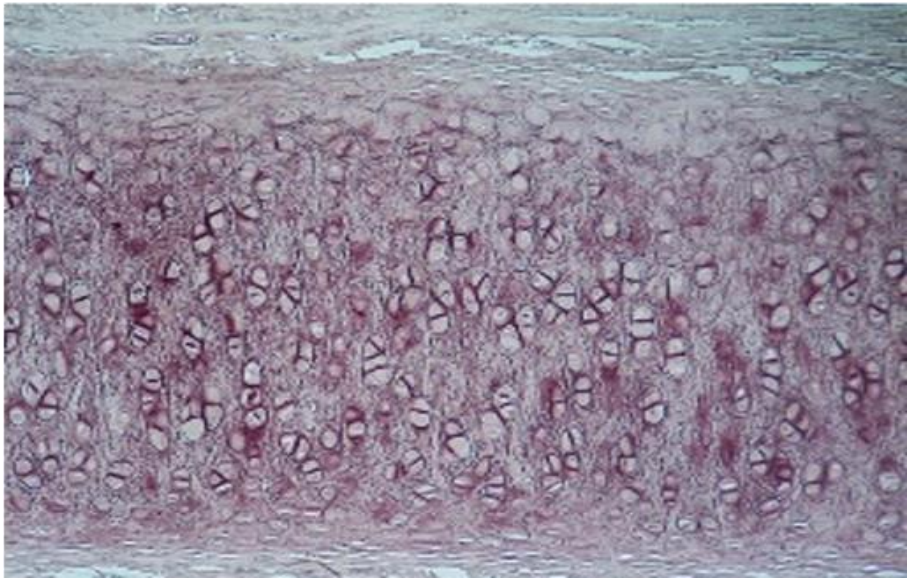
VVG stain



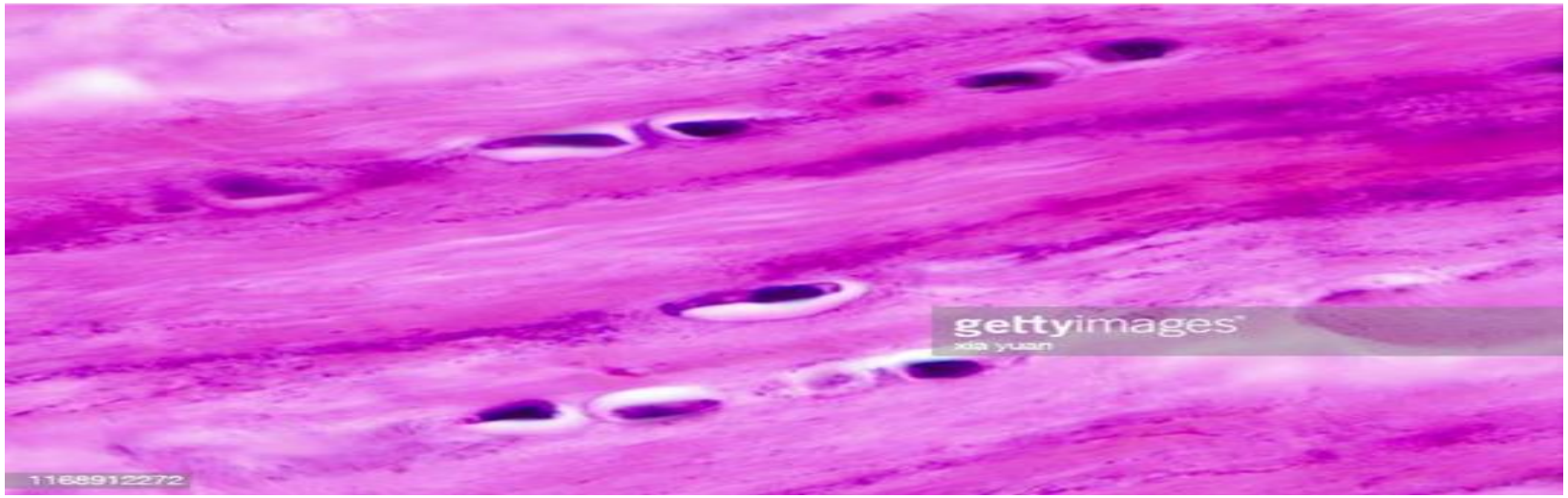


Orcein stain

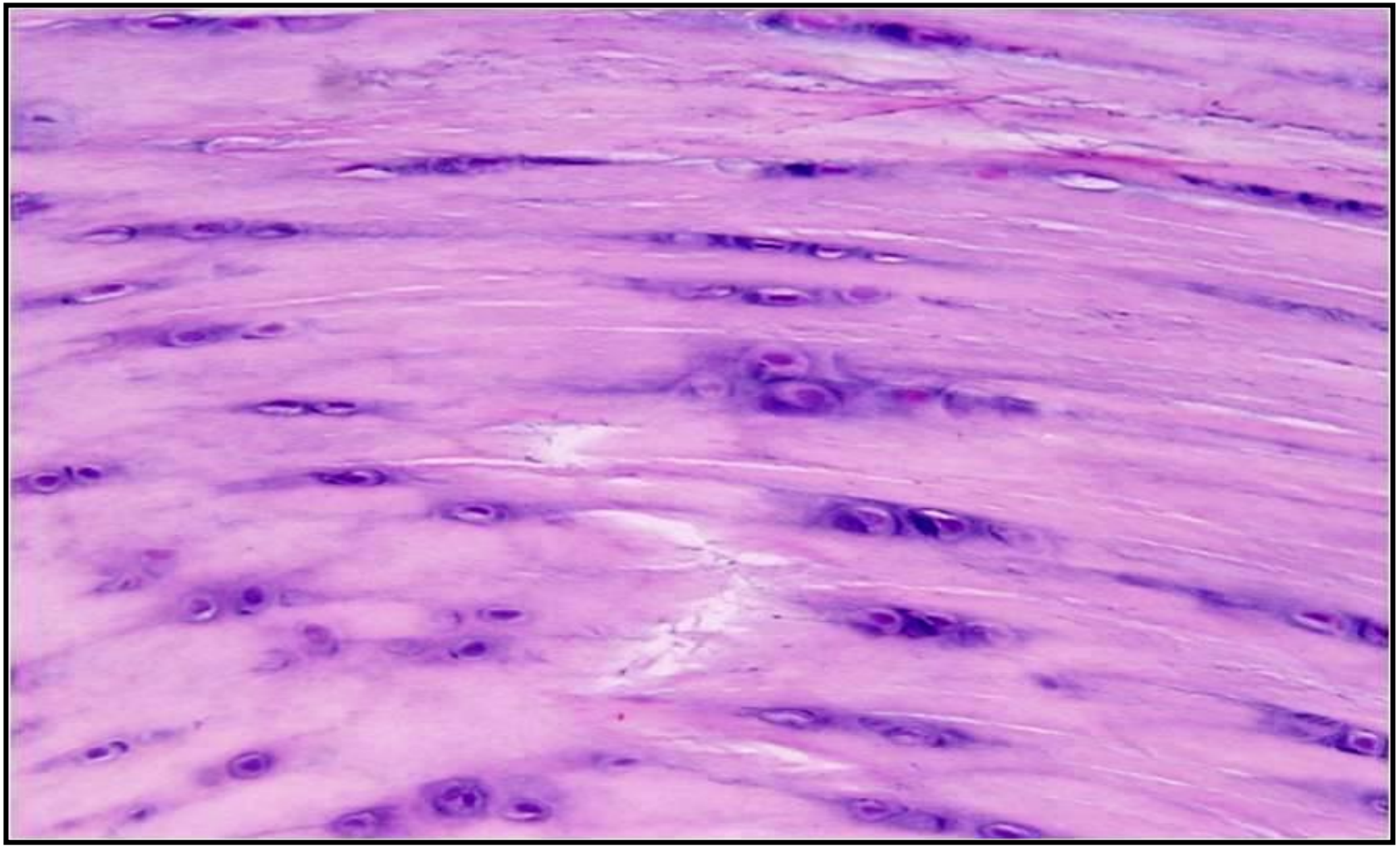


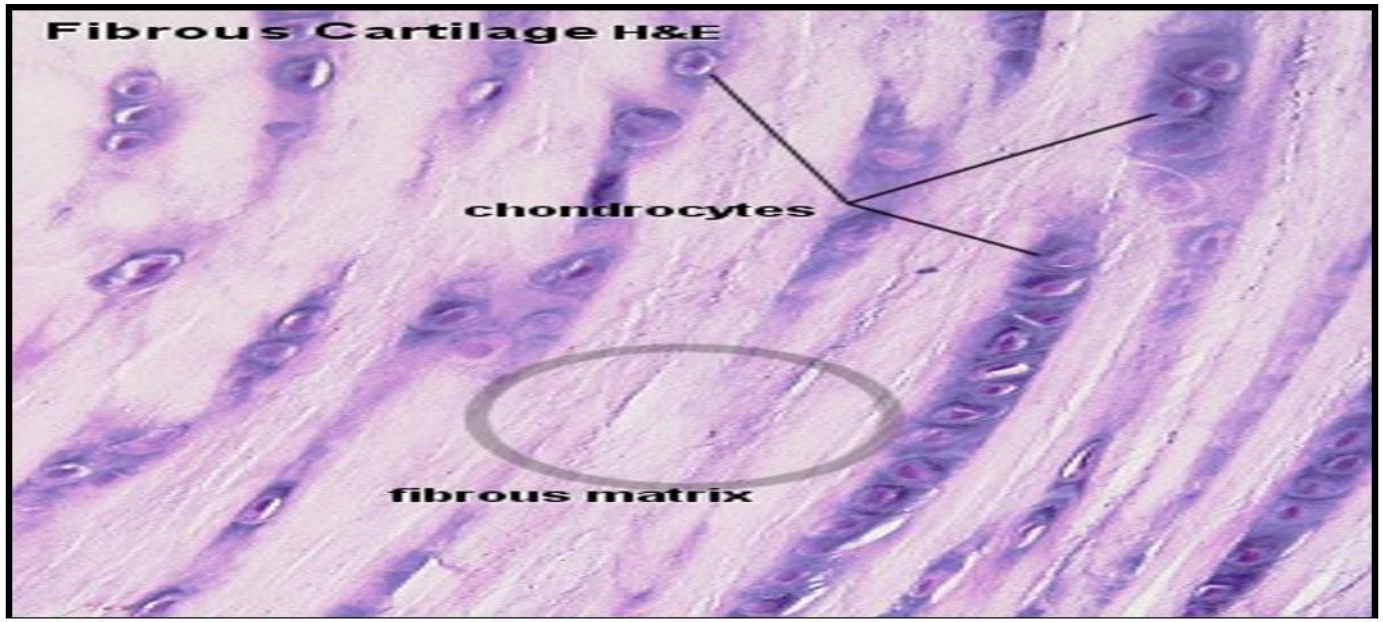


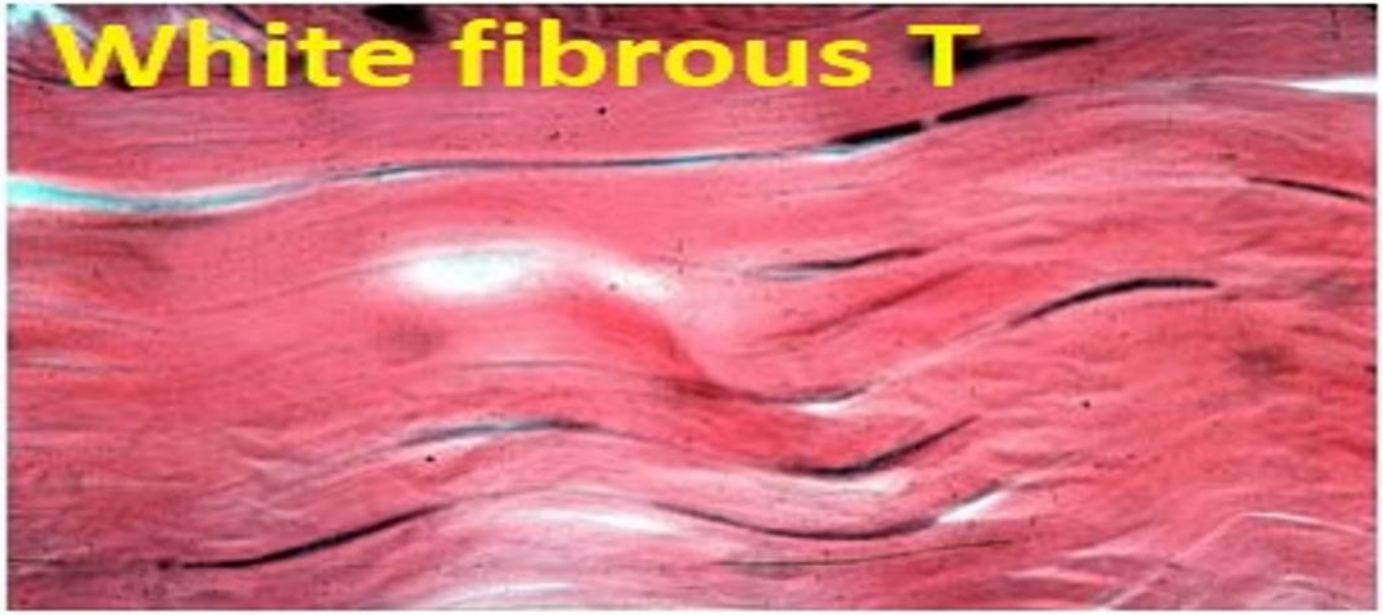
White FIBROCARTILAGE

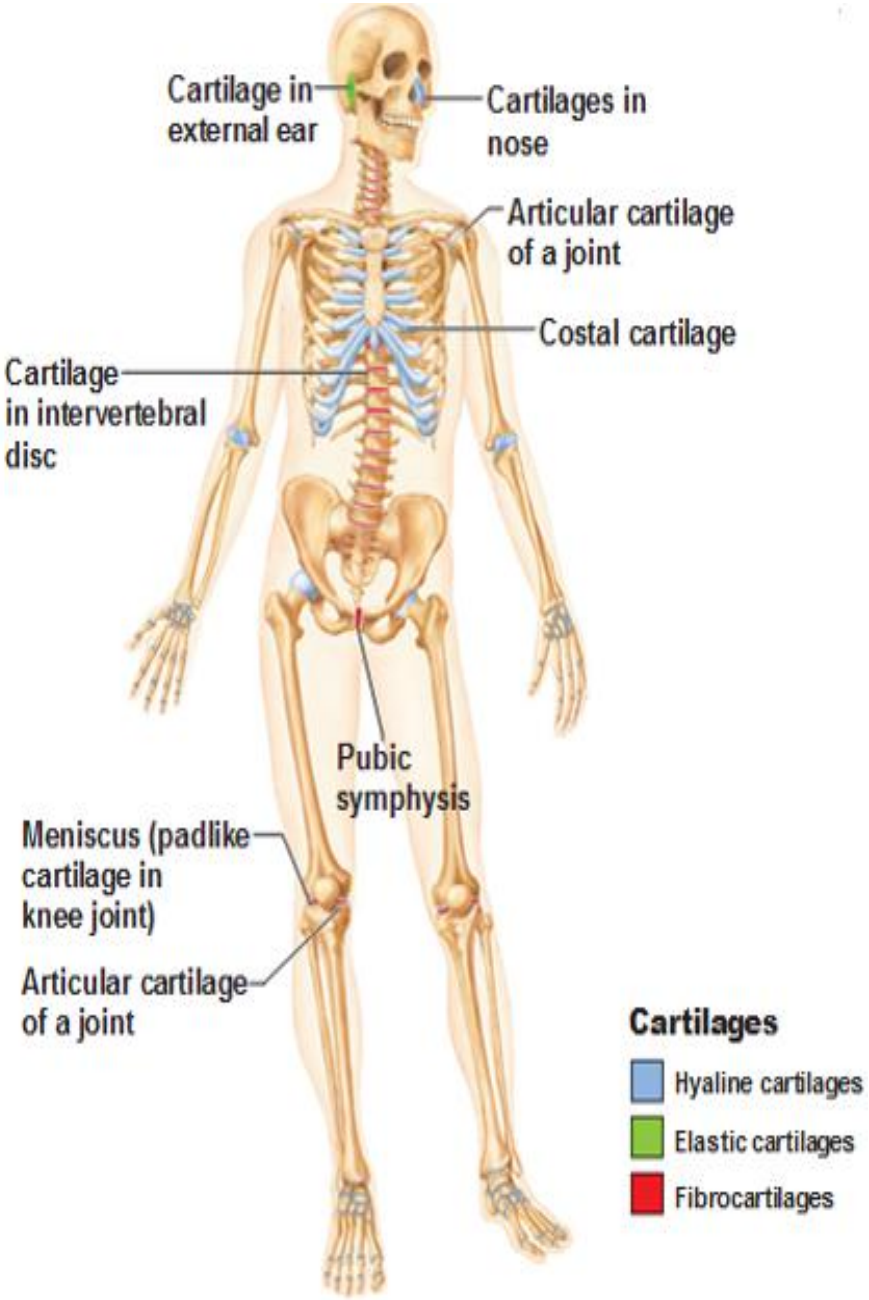


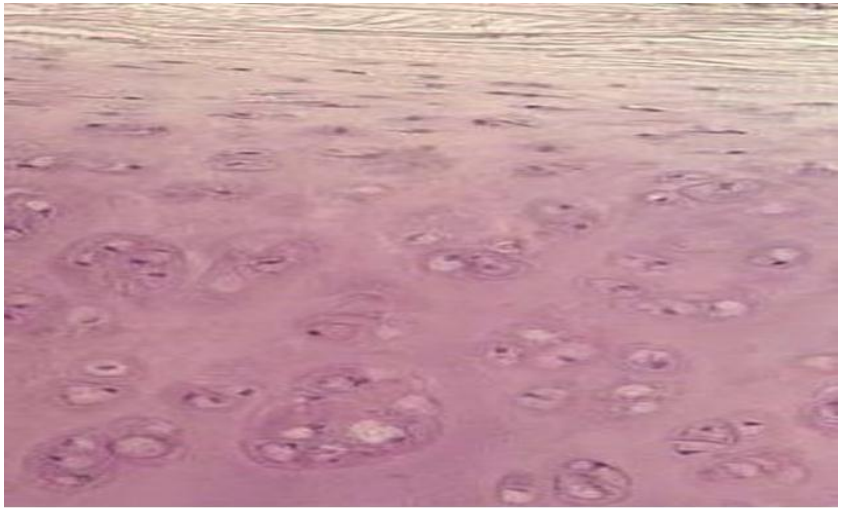
White FIBROCARTILAGE

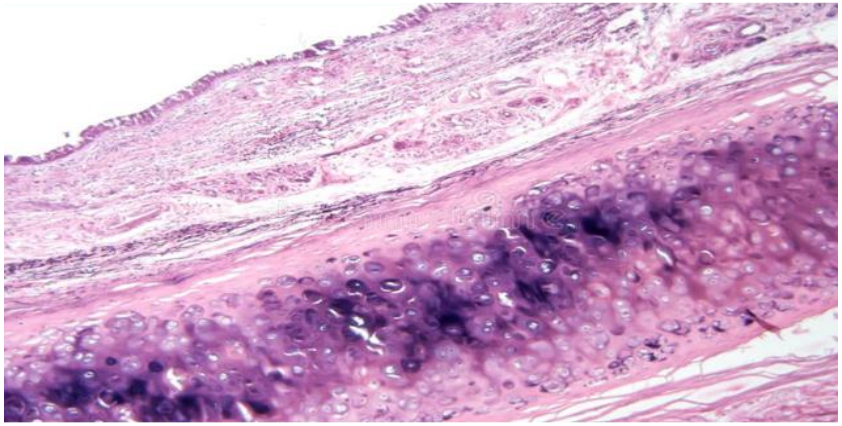


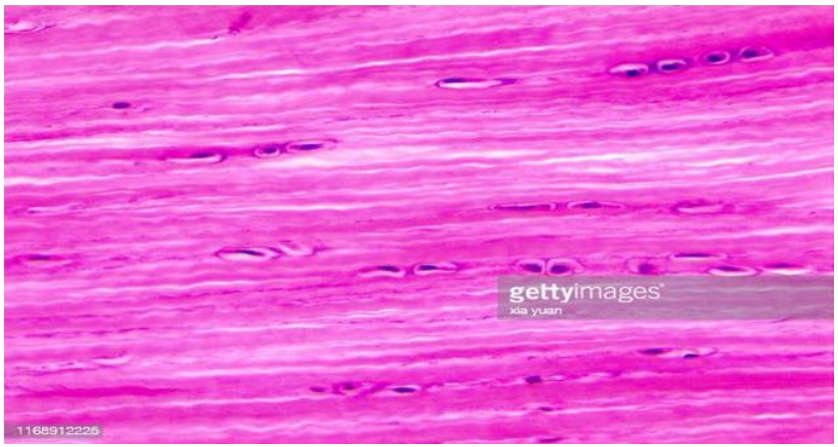

Fibrous Cartilage H&E
chondrocytes
fibrous matrix


White fibrous T

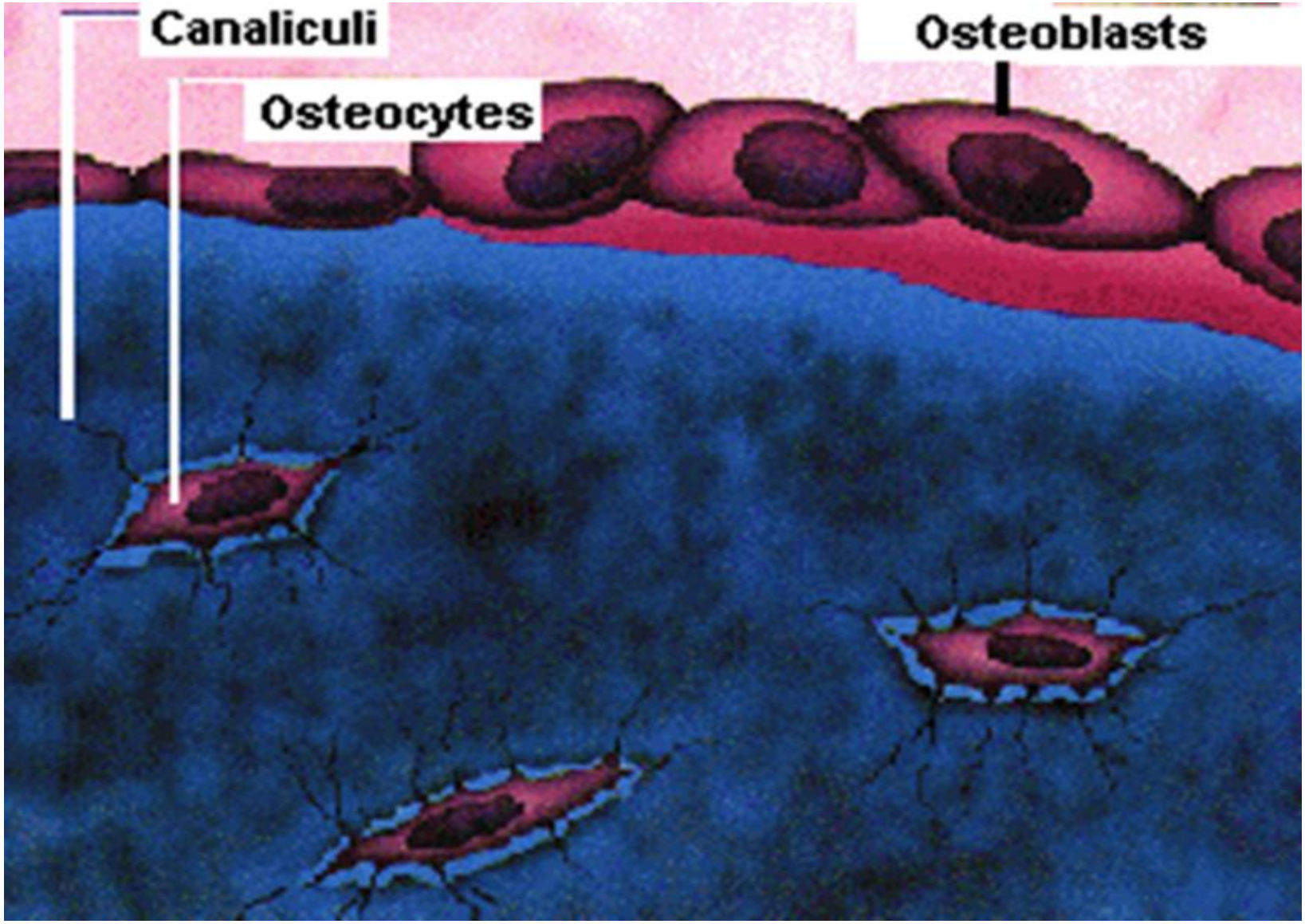

Cartilage in external ear
Cartilages in nose
Articular cartilage of a joint
Costal cartilage
Cartilage in intervertebral disc
Pubic symphysis
Meniscus (padlike cartilage in knee joint)
Articular cartilage of a joint
Cartilages
Hyaline cartilages
Elastic cartilages
Fibrocartilages



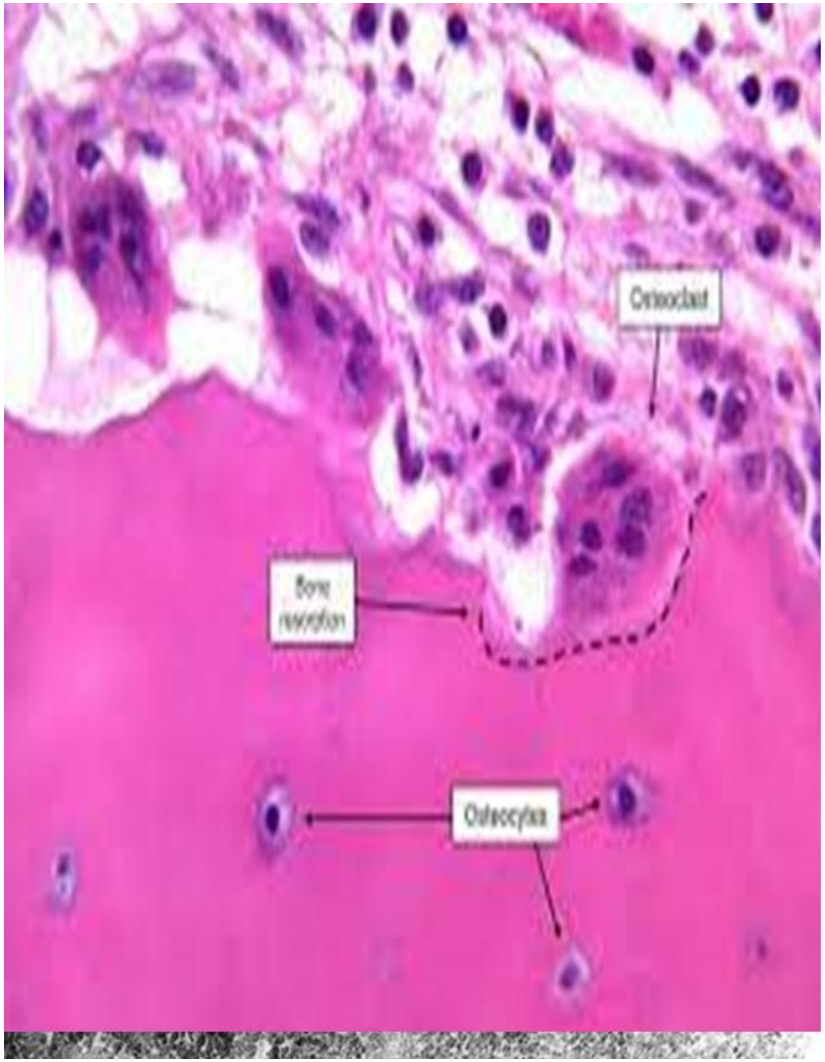


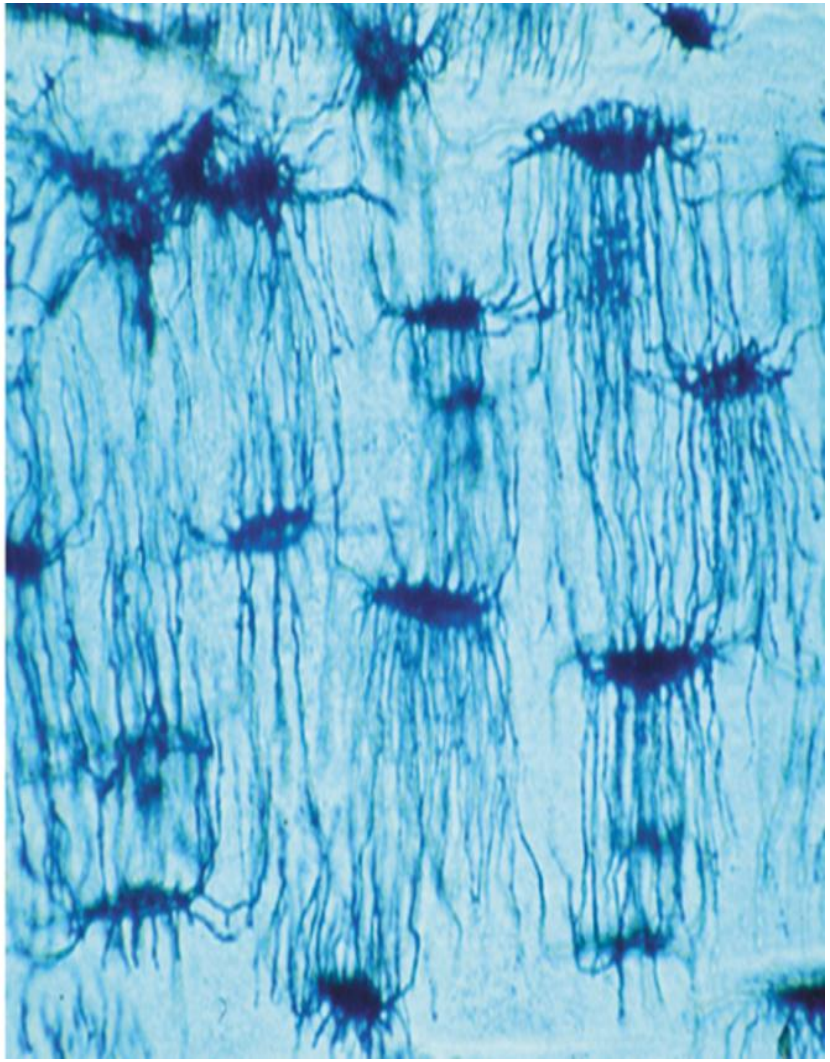

gettyimages
xia yuan
1168912225

2.Osteoblasts are bone-forming cells

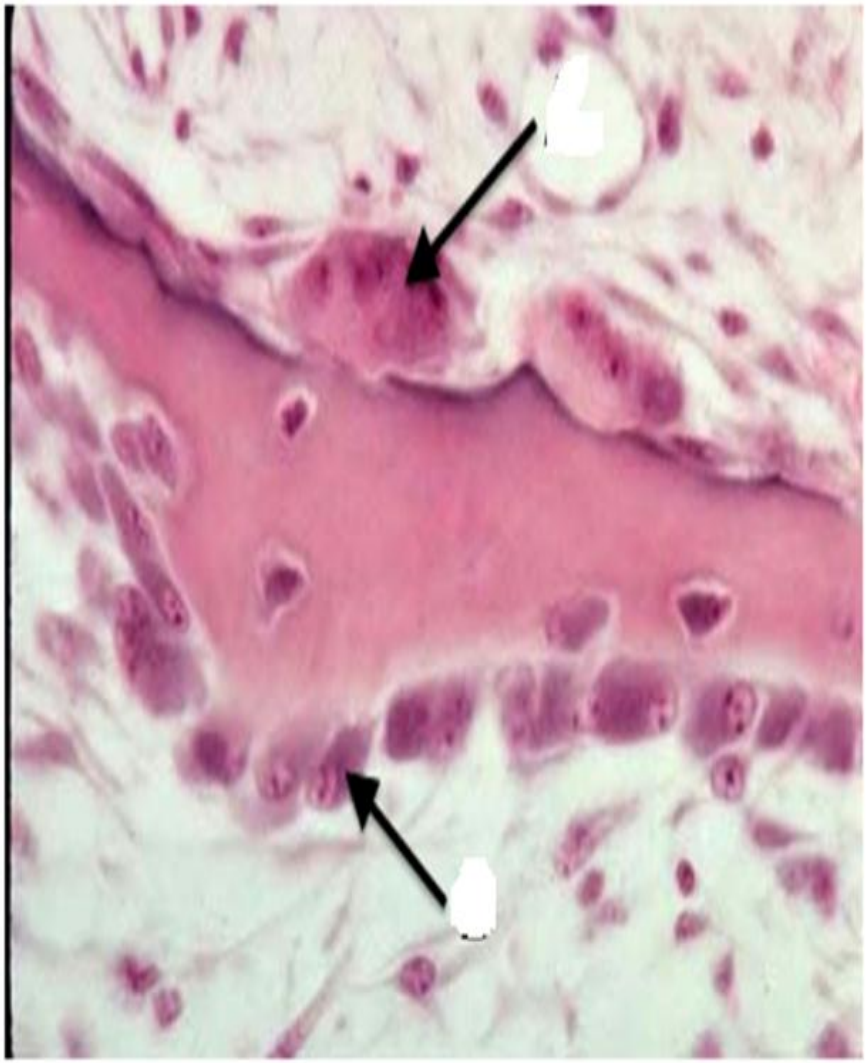


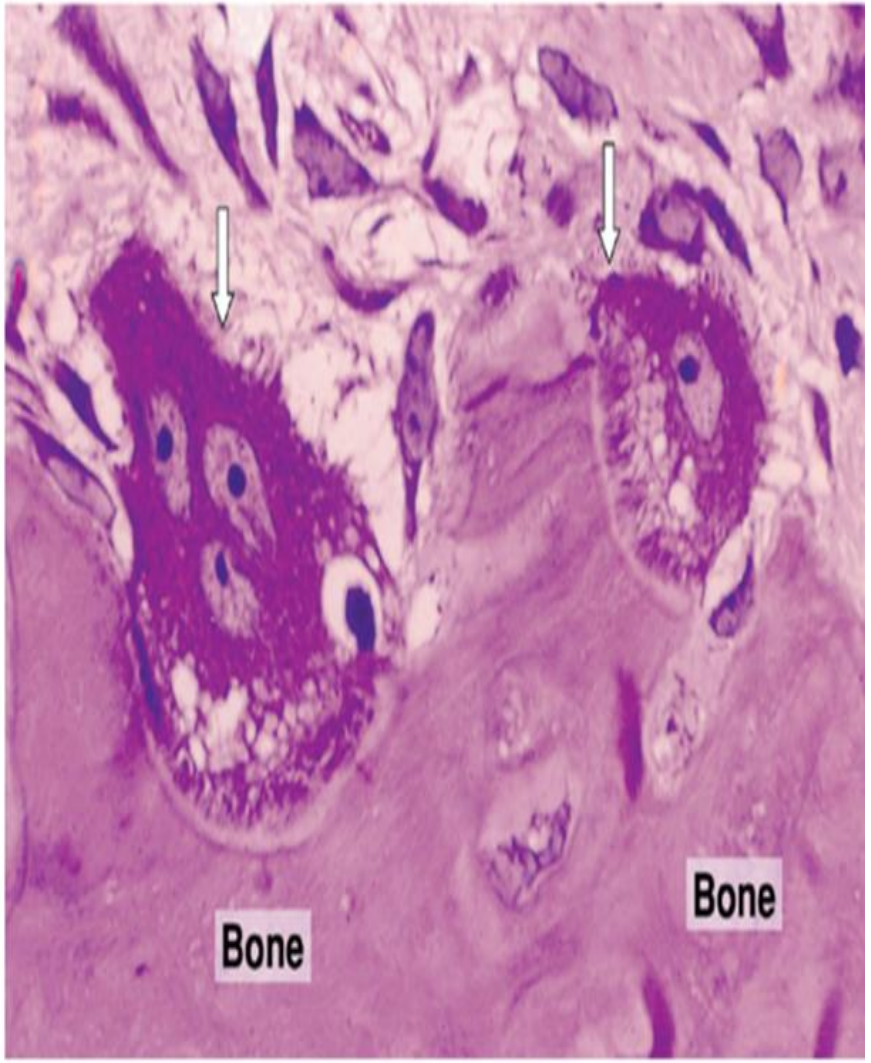
3.Osteocytes = called unit bone cells



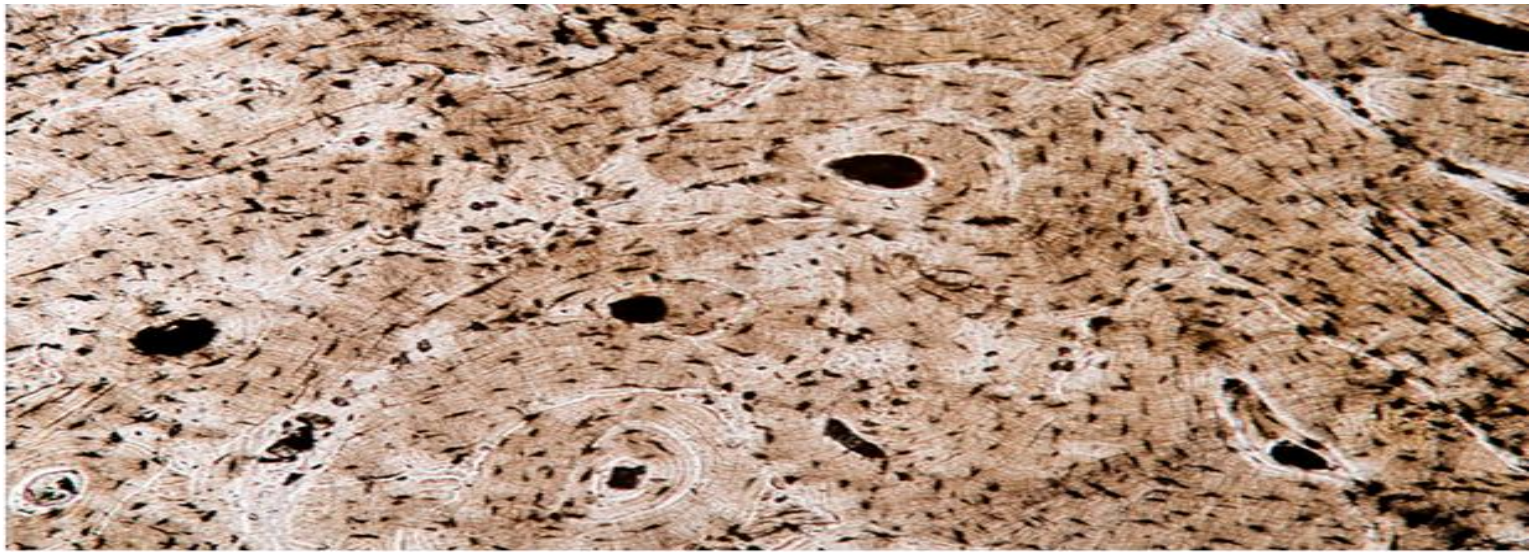


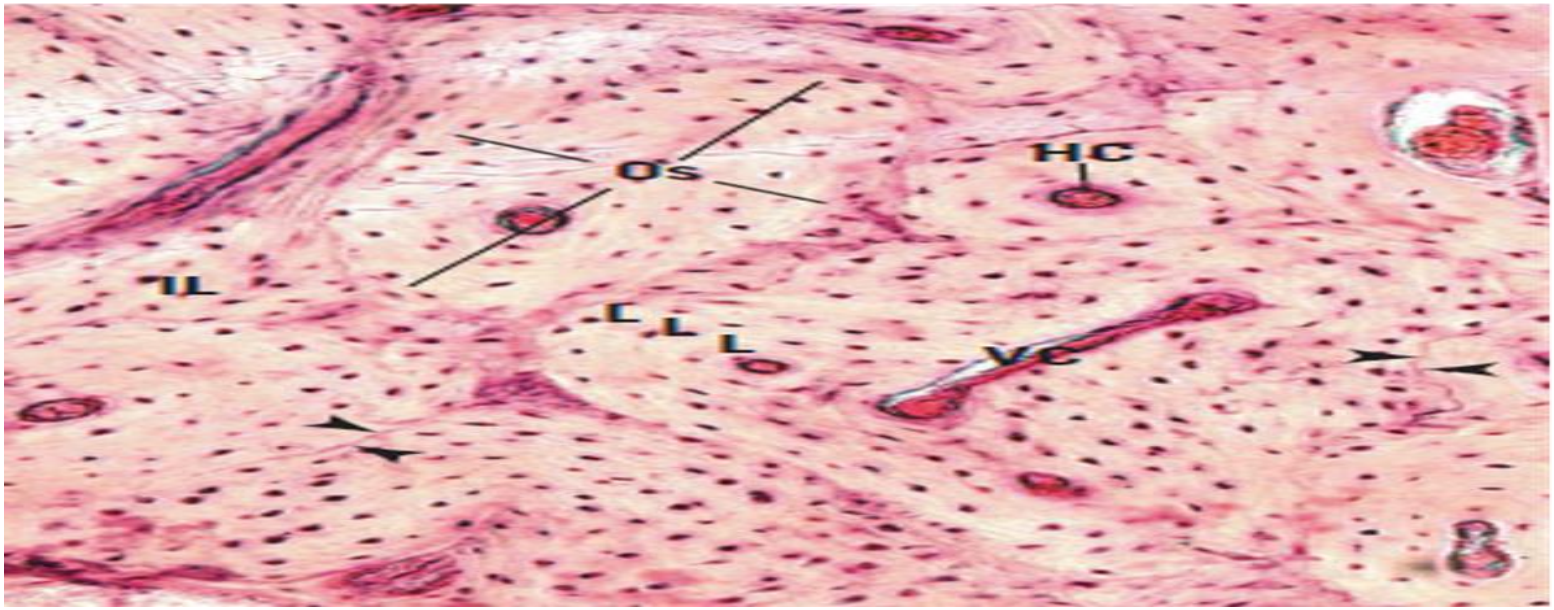
4.Osteoclasts = bone macrophages are bone-eating cells



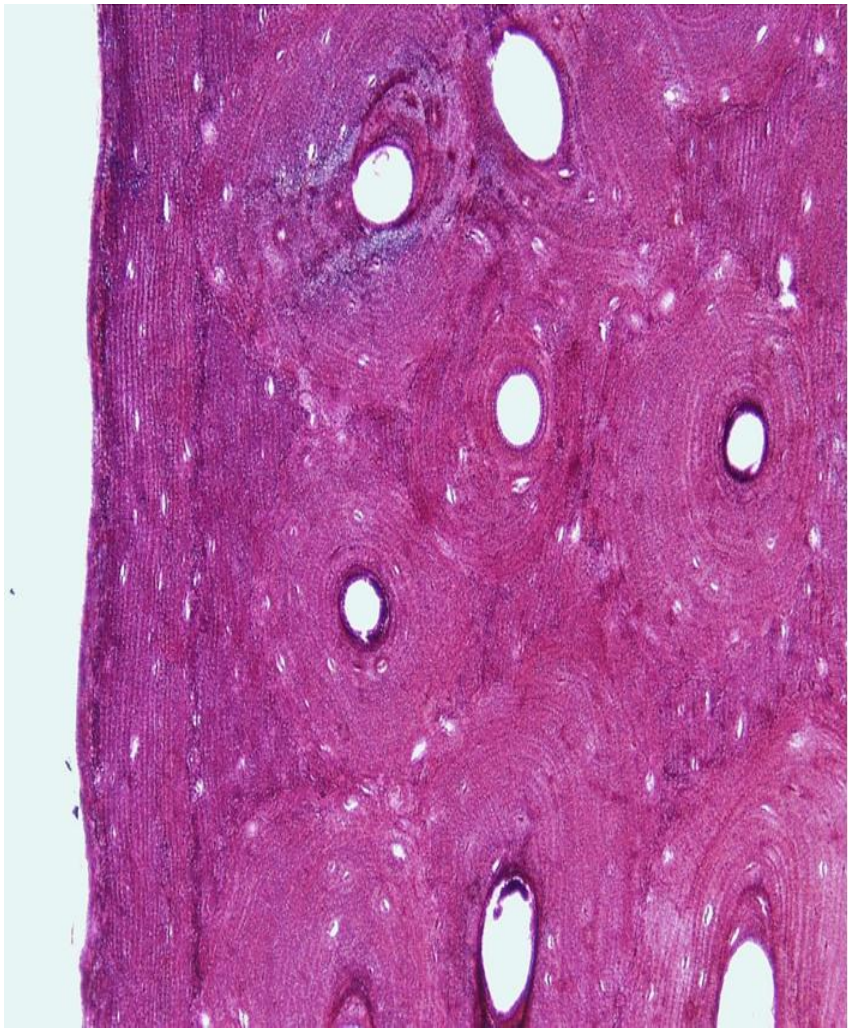


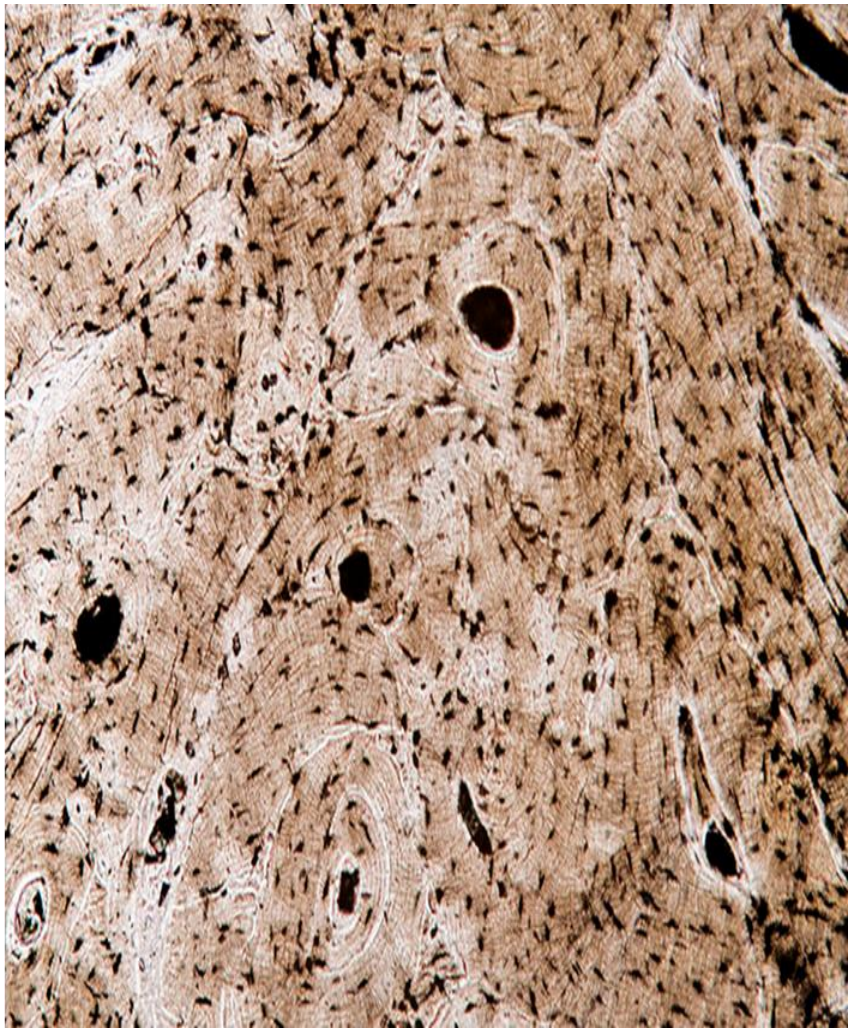
Methods of histological study of bone



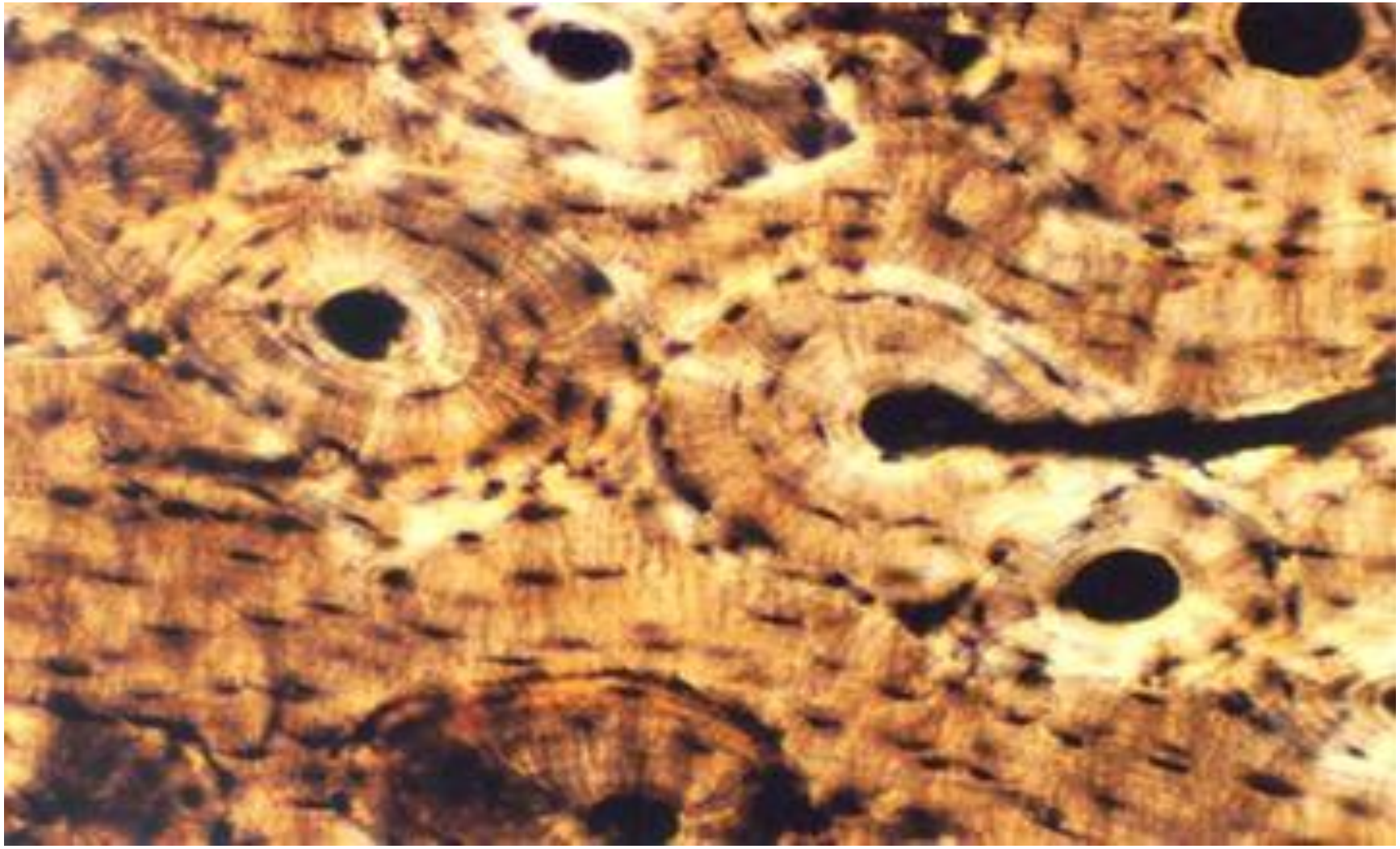


Compact bone

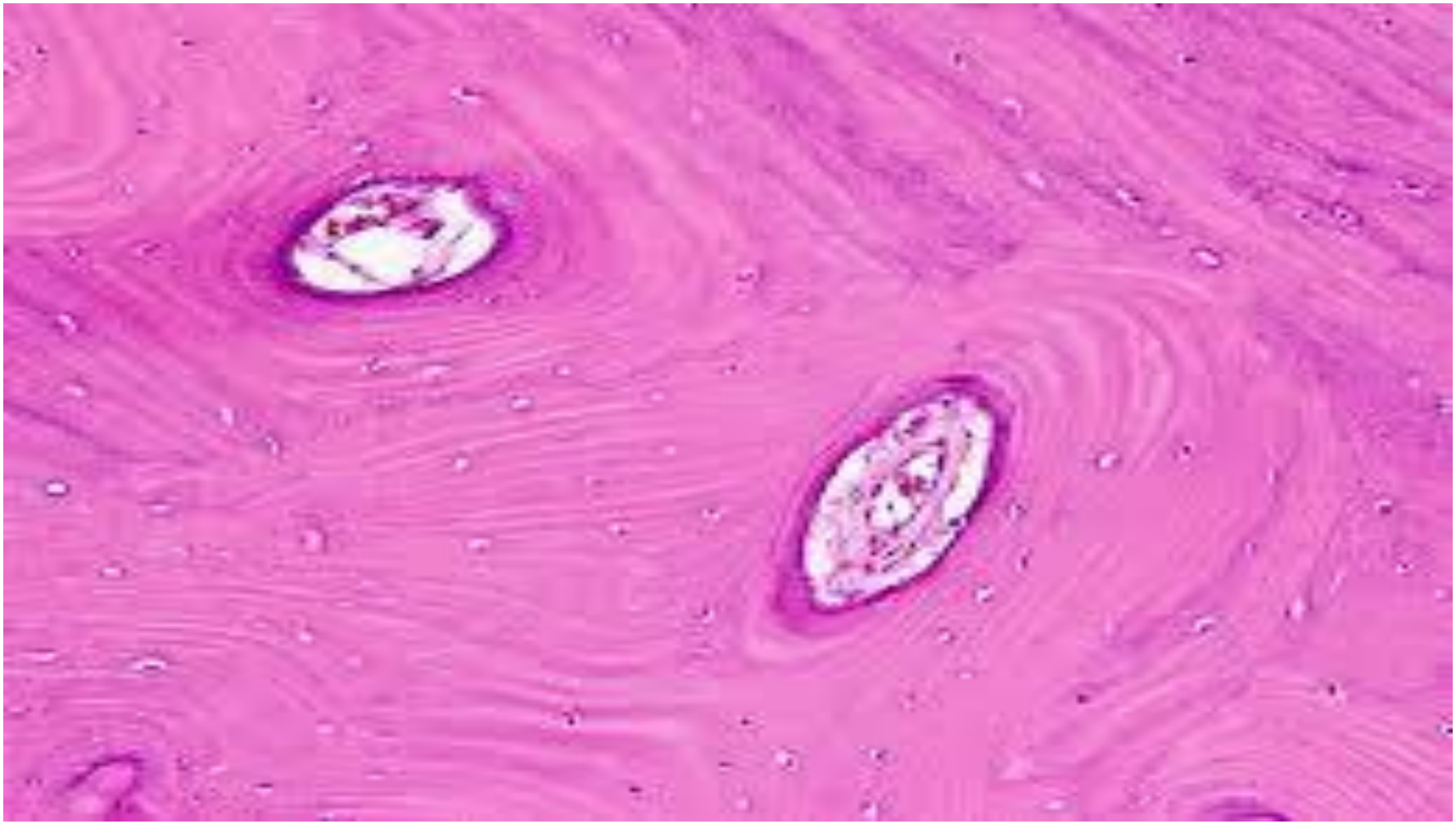




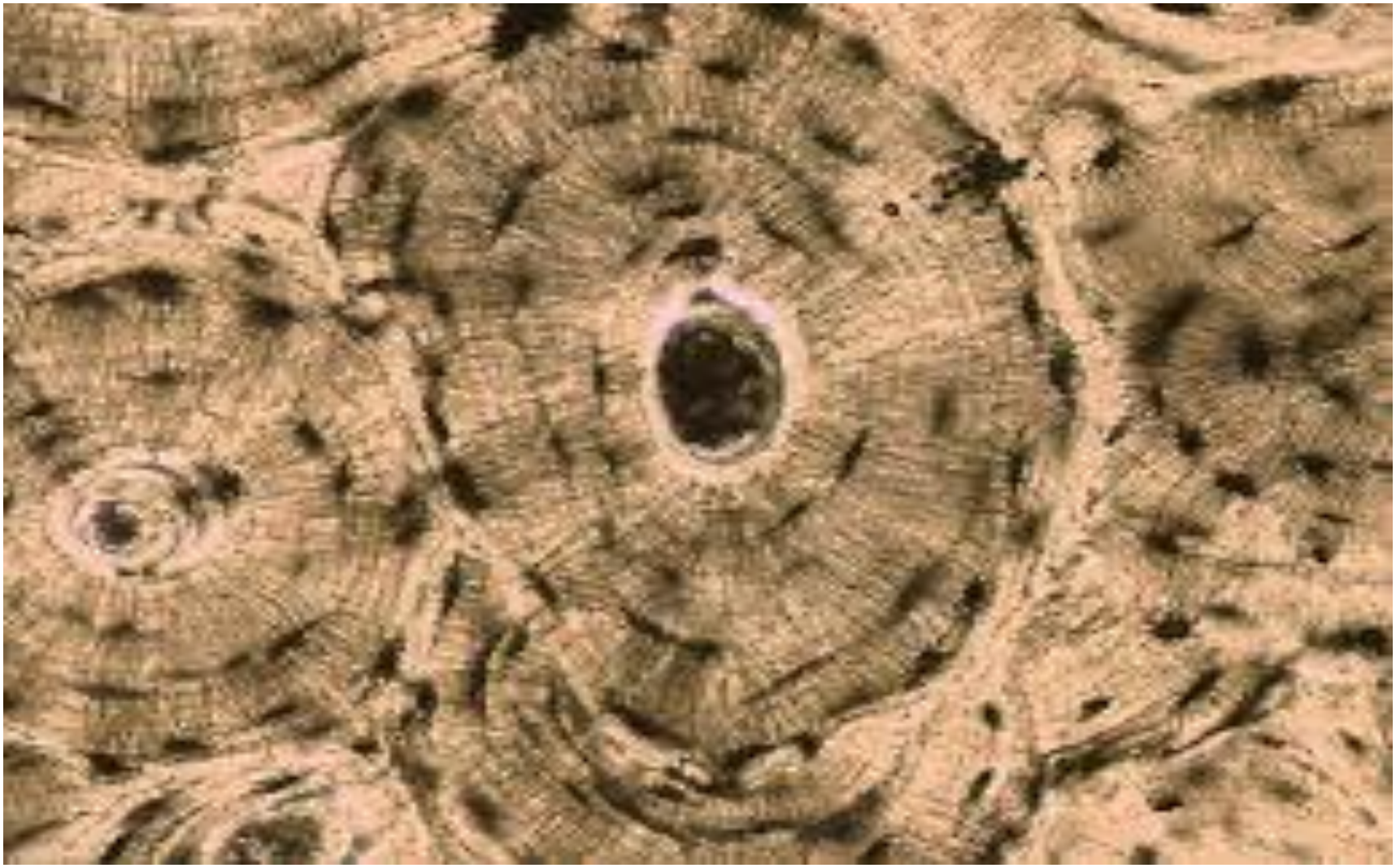
Compact bone



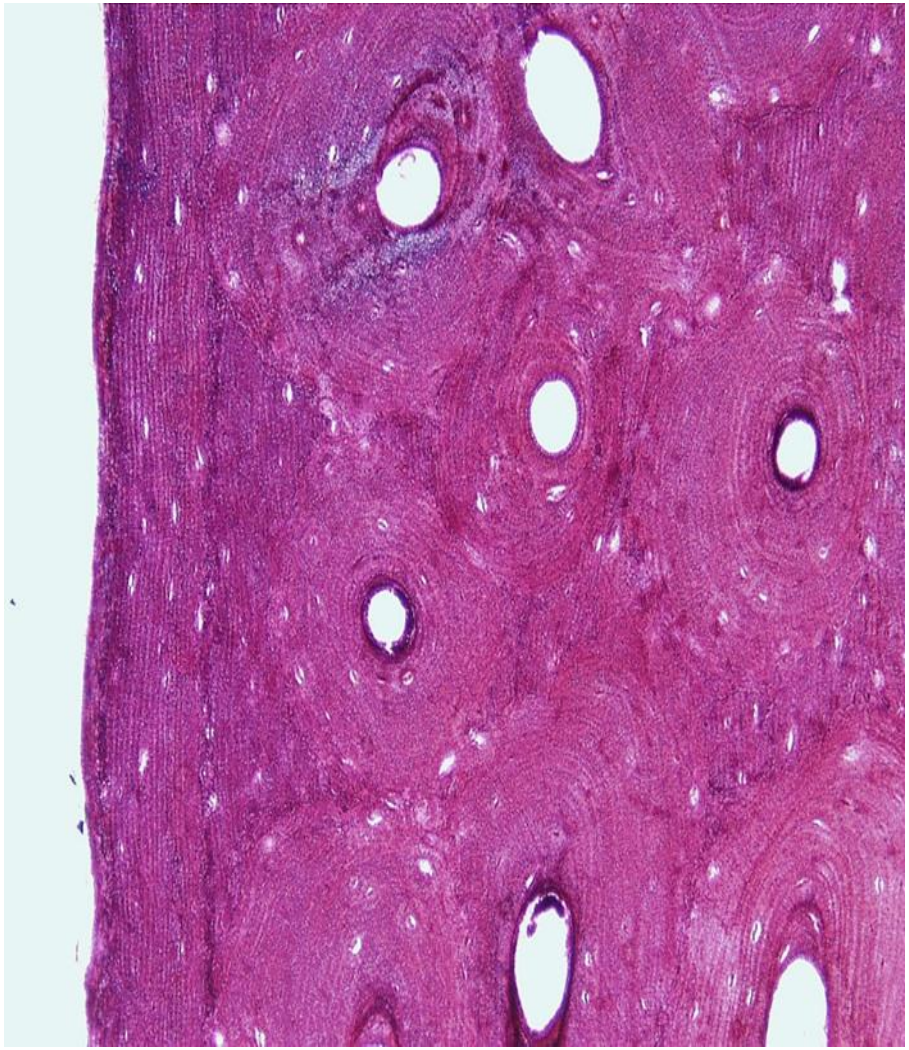
Compact bone



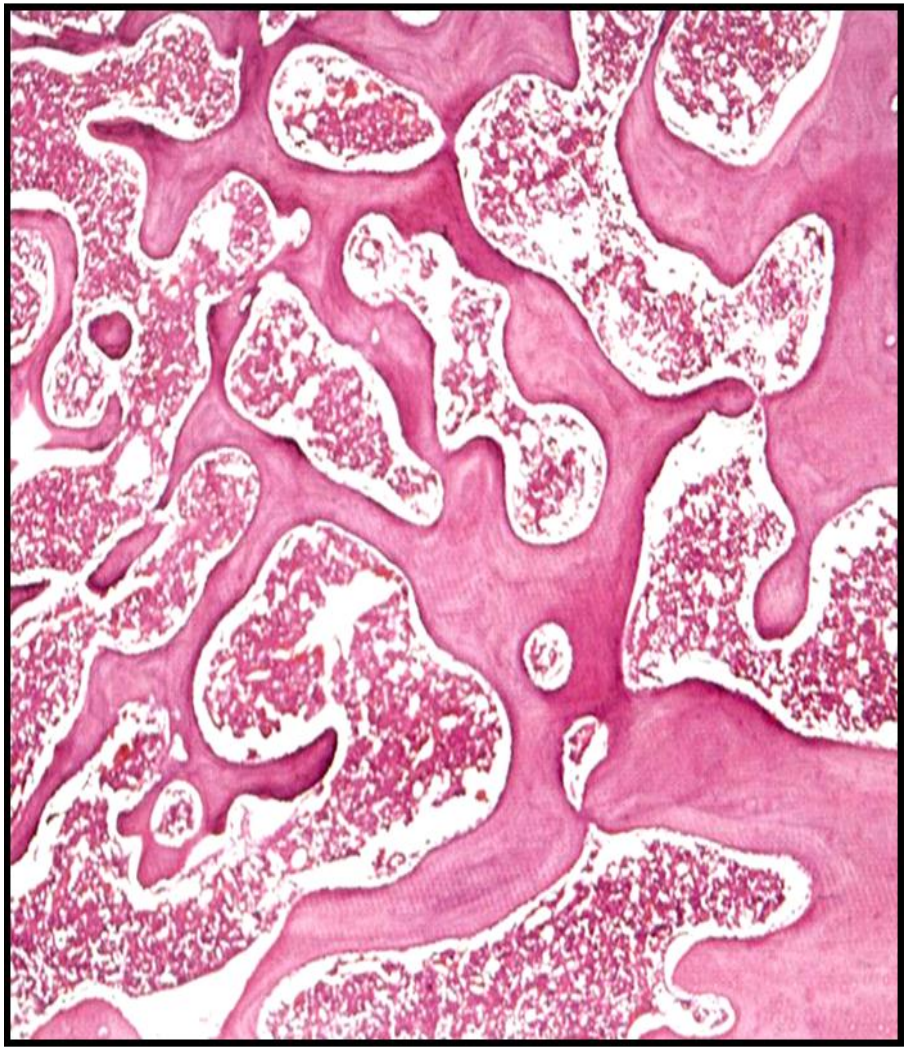
OSTEONS



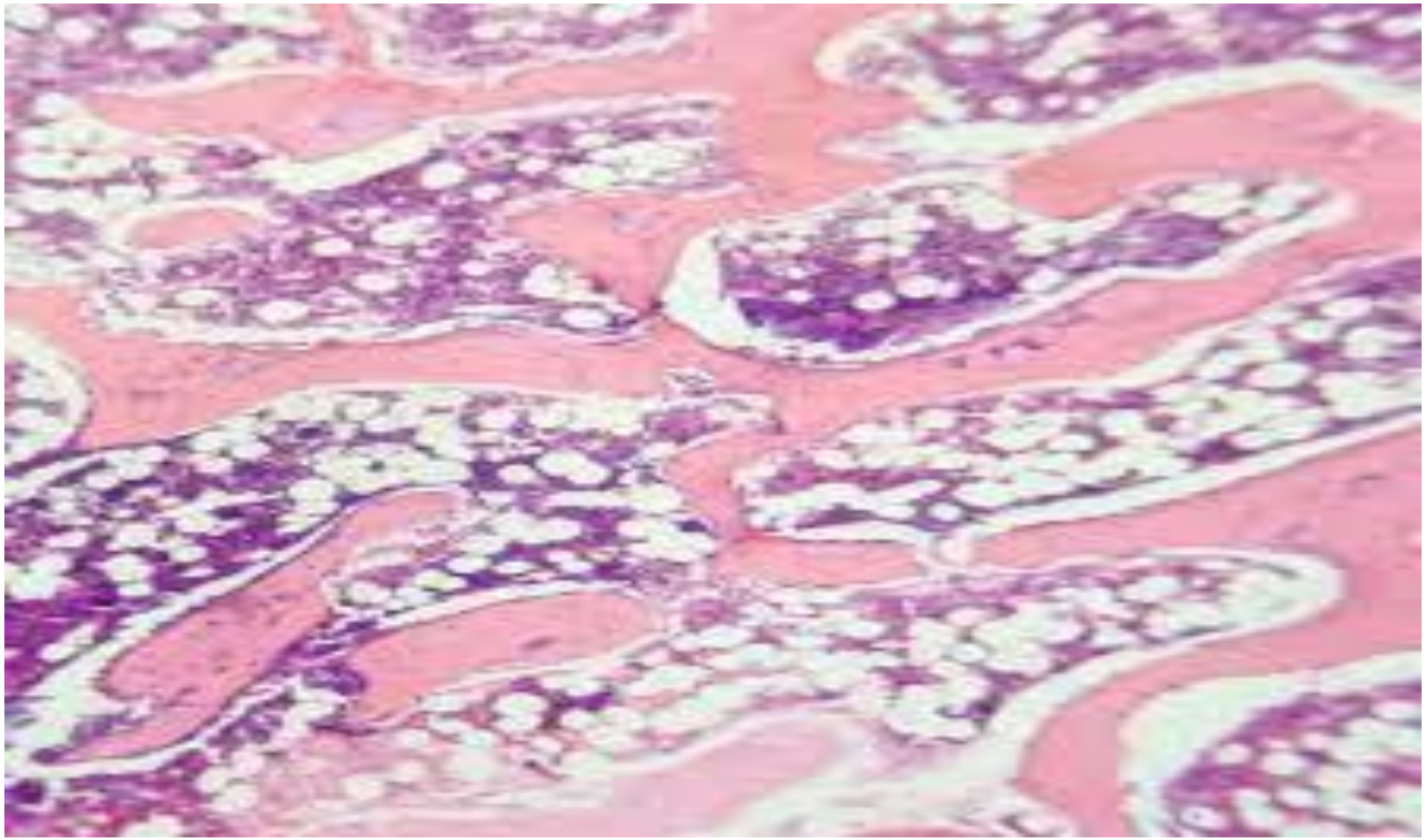
Compact bone



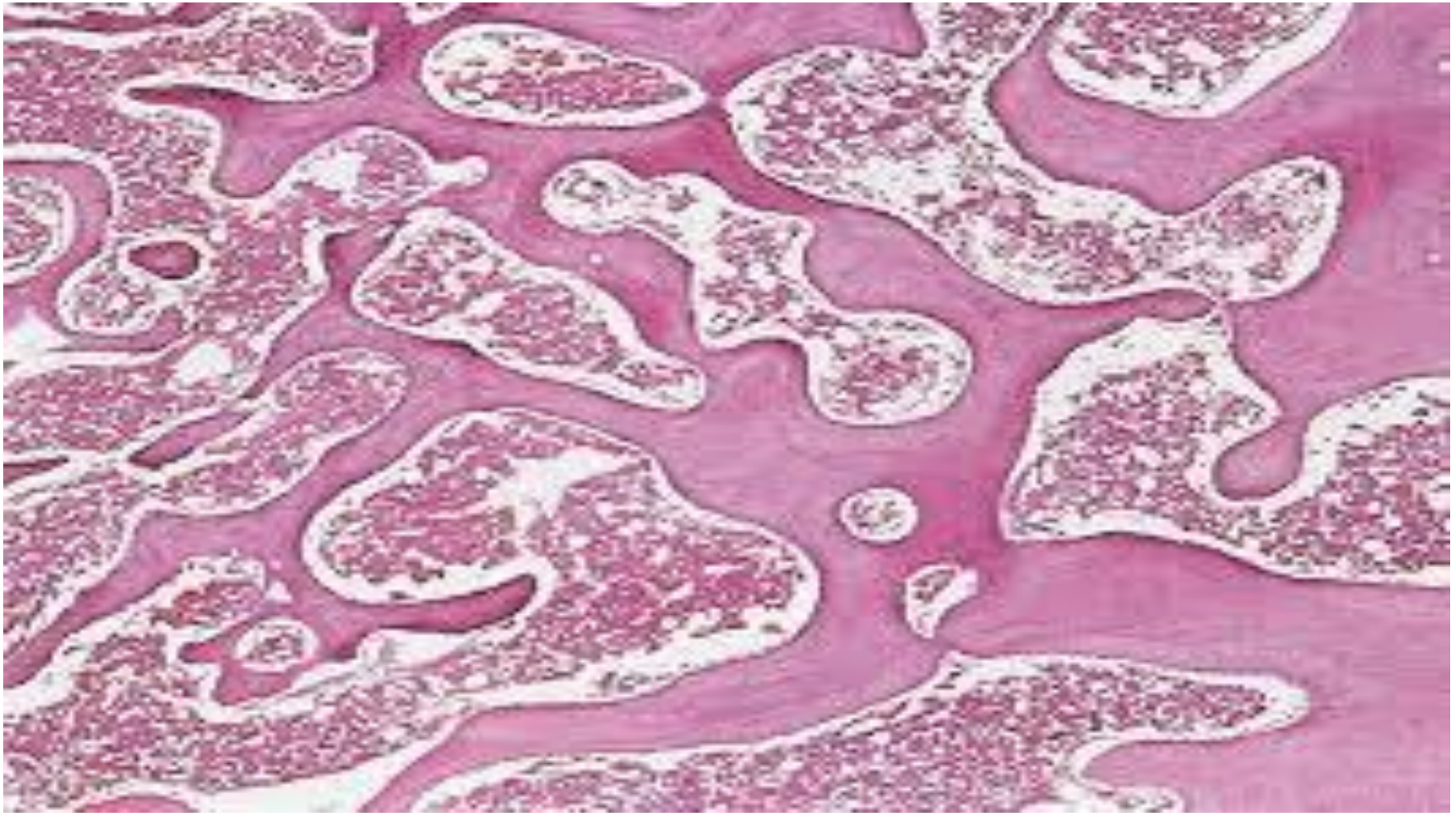
Cancellous bone



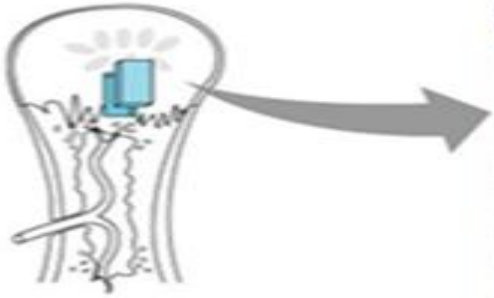
Cancellous bone

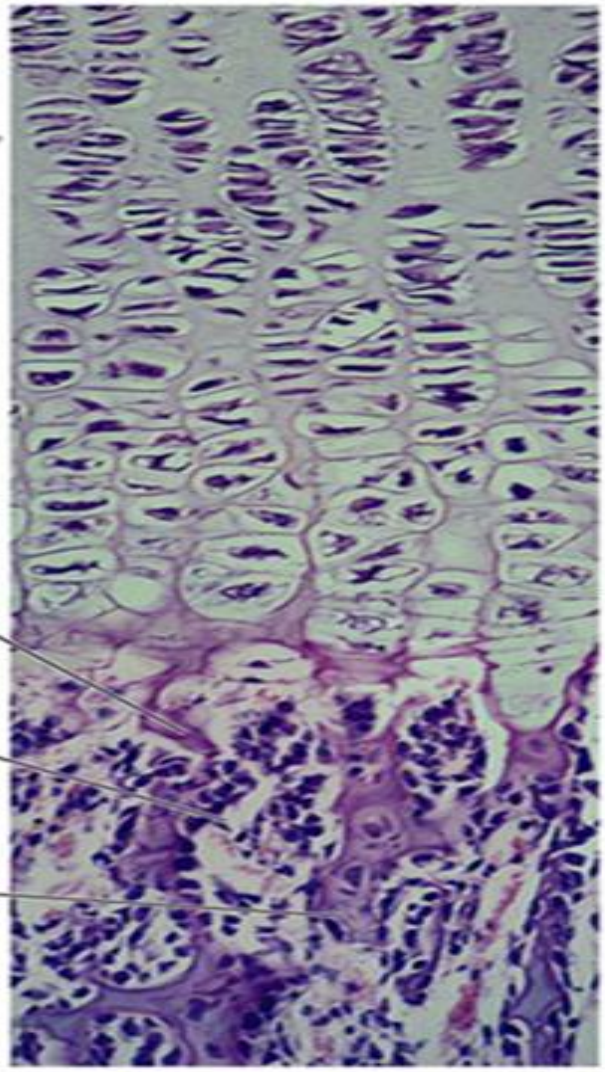


Cancellous bone



GROWTH IN LENGTH
GROWTH OF CARTILAGE ON THE EPIPHYSEAL PLATE





Resting (quiescent) zone

Growth (proliferation) zone
Cartilage cells undergo mitosis

Hypertrophic zone
Older cartilage cells enlarge

Calcification zone
Matrix becomes calcified; cartilage cells die; matrix begins deteriorating

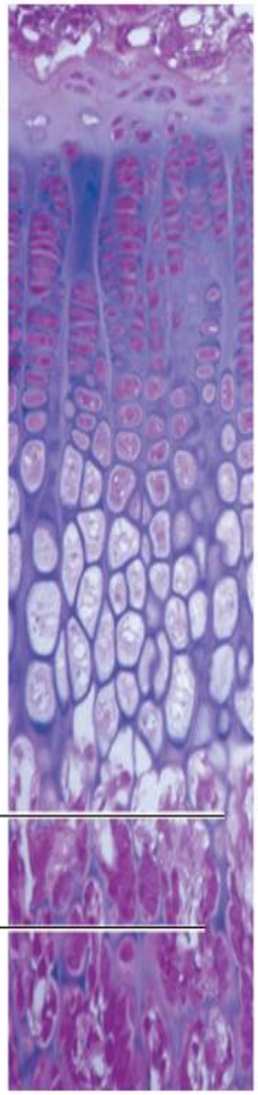
Ossification (osteogenic) zone
New bone formation is occurring

Calcified cartilage spicule

Osteoblast depositing bone matrix

Osseous tissue (bone) covering cartilage spicules

Organization of Cartilage within Epiphyseal Plate of Growing Long Bone



Resting zone – small, inactive cartilage cells

① Proliferation zone
Chondroblasts quickly divide and push the epiphysis away from the diaphysis, lengthening the bone.

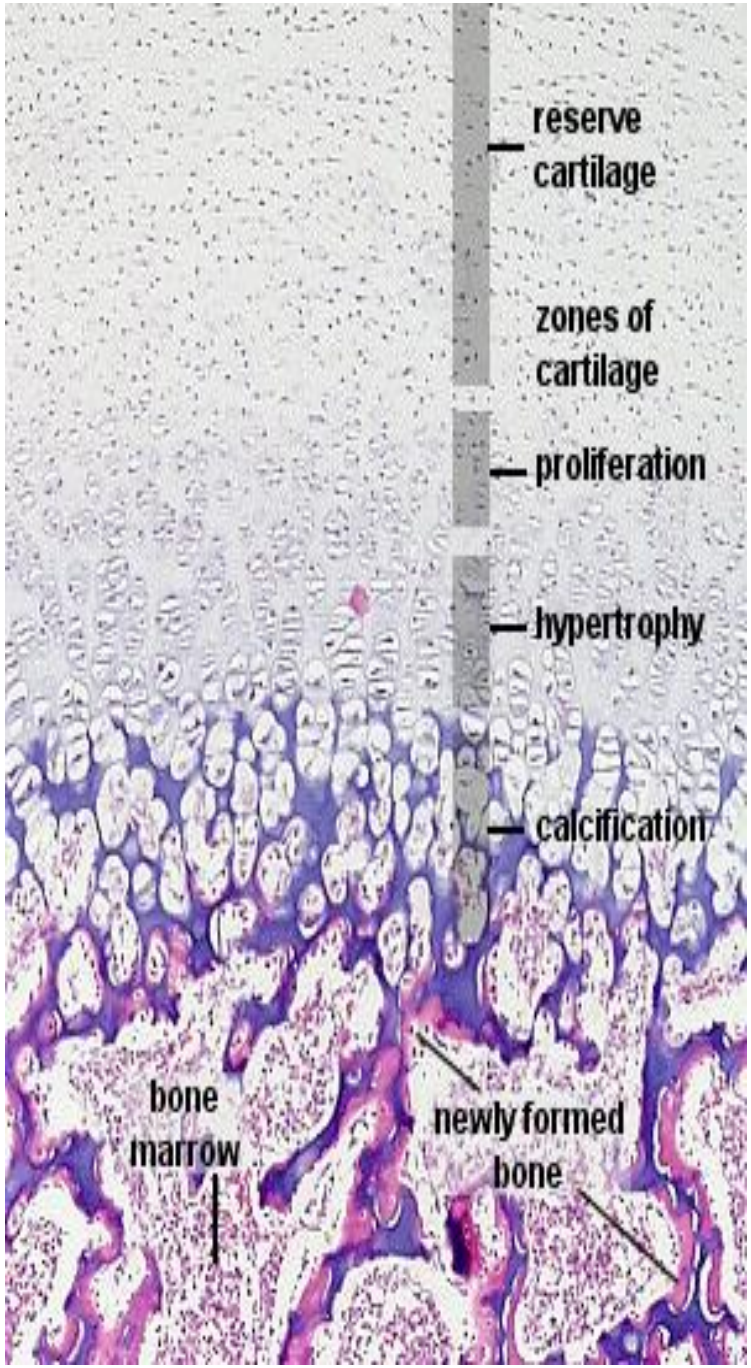
② Hypertrophic zone
Older chondrocytes enlarge and signal the surrounding matrix to calcify.

③ Calcification zone
Matrix becomes calcified; chondrocytes die, leaving behind trabeculae-shaped calcified cartilage. THIS IS NOT YET BONE!
.

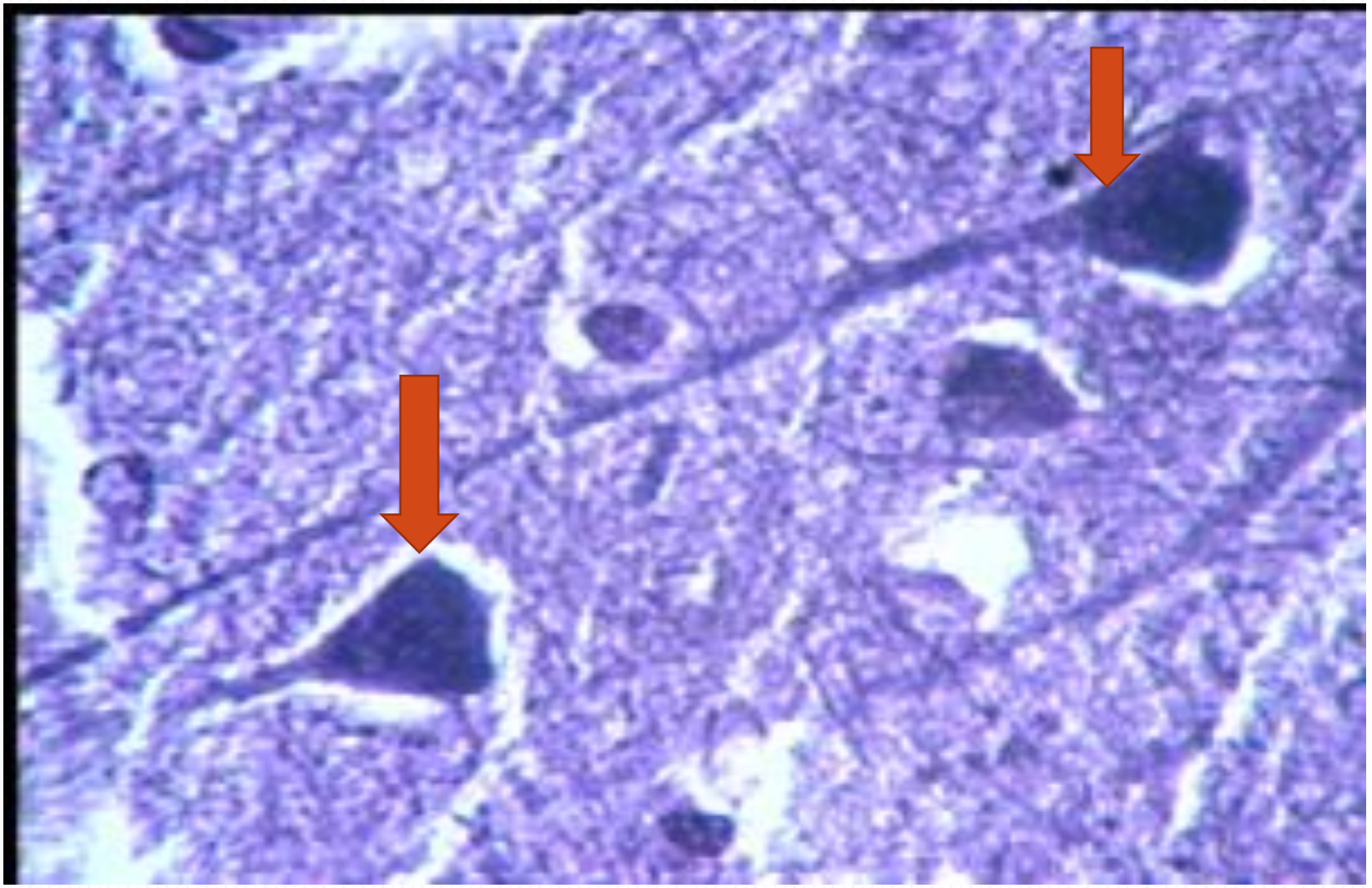
Calcified cartilage spicule

Osseous tissue

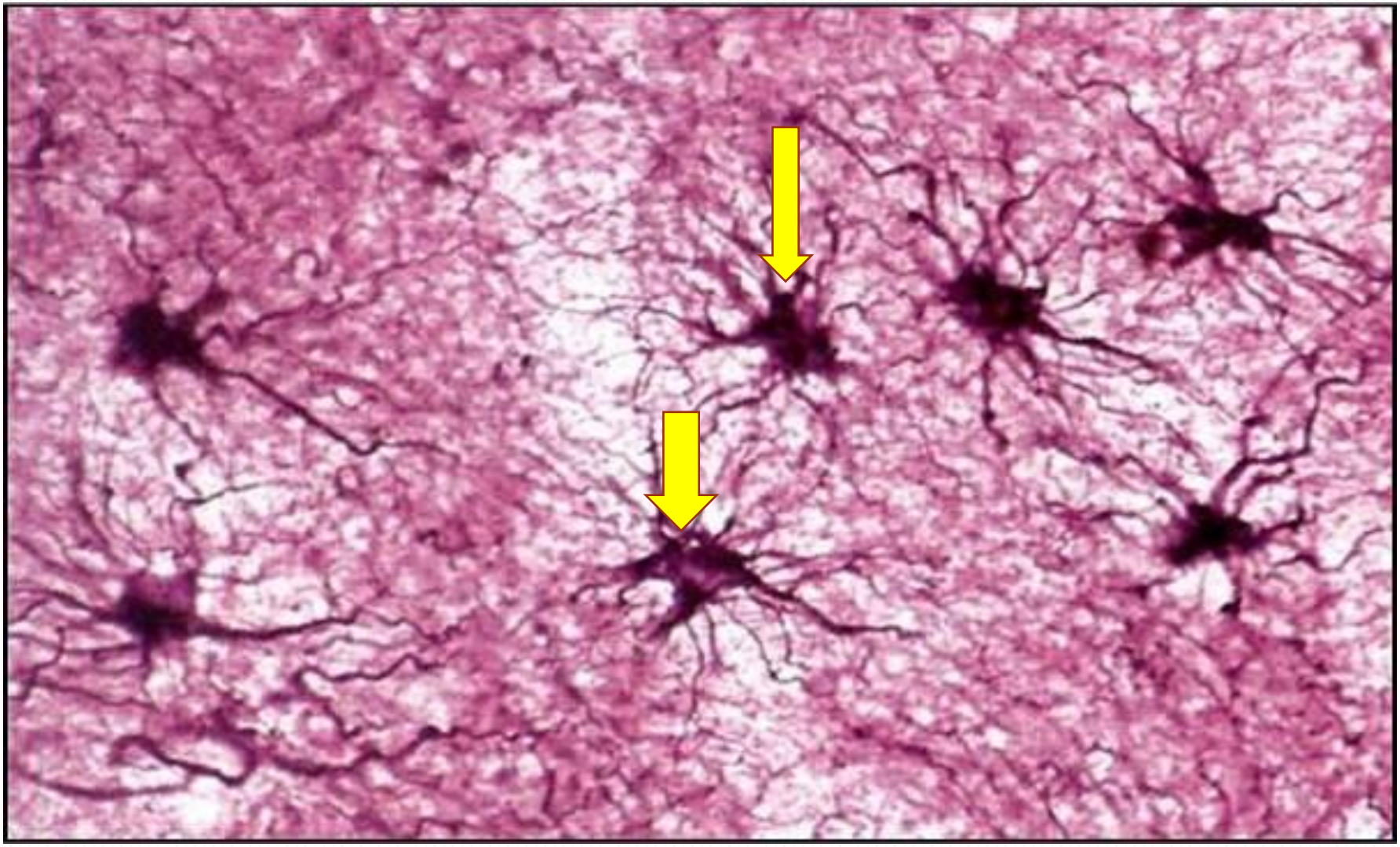
④ Ossification zone
Osteoclasts digest the calcified cartilage, and *osteoblasts* replace it with actual bone tissue in the shape of the calcified cartilage – resulting in bone trabeculae.



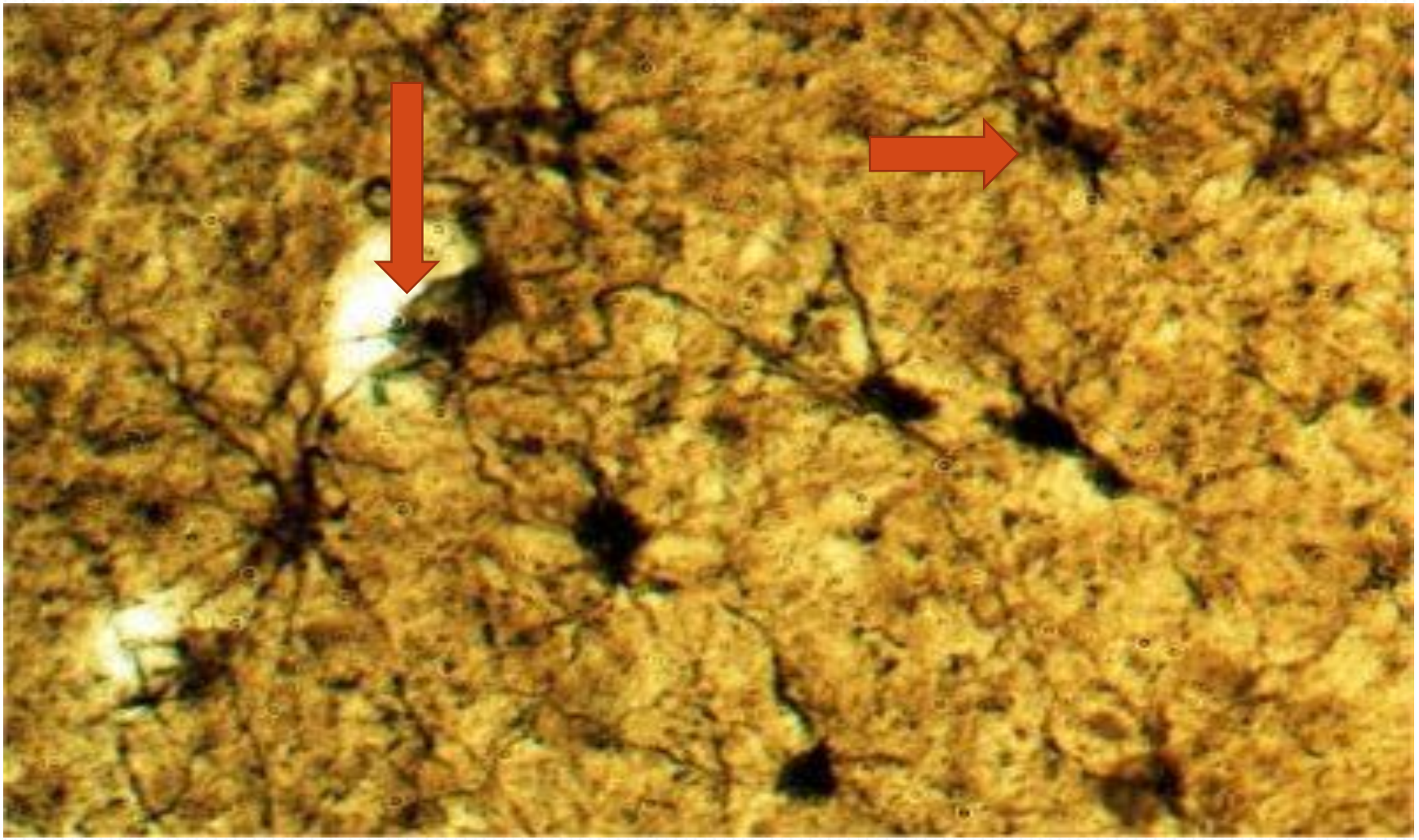
Pyramidal neuron



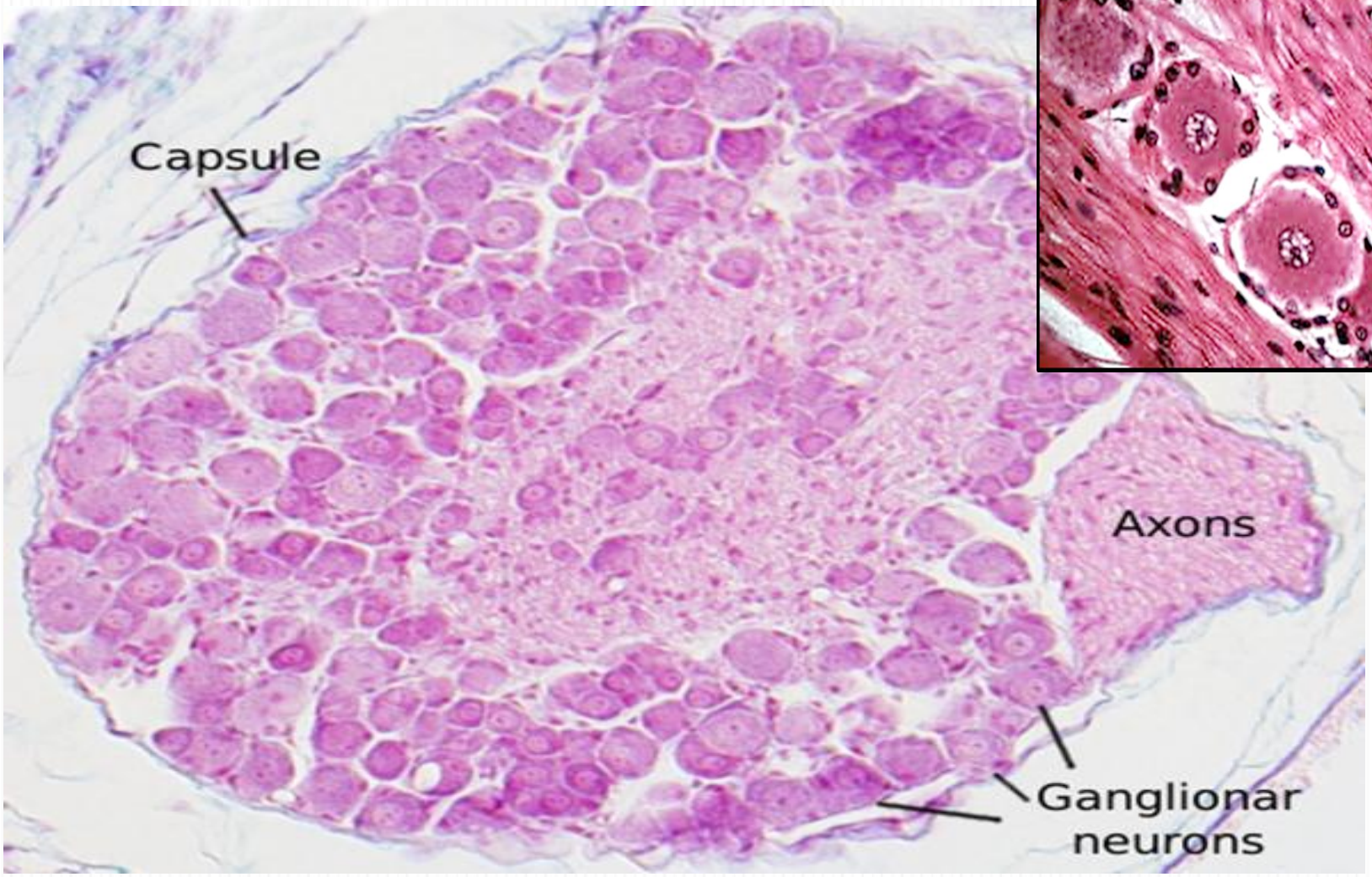
Neuroglia = Astrocytes

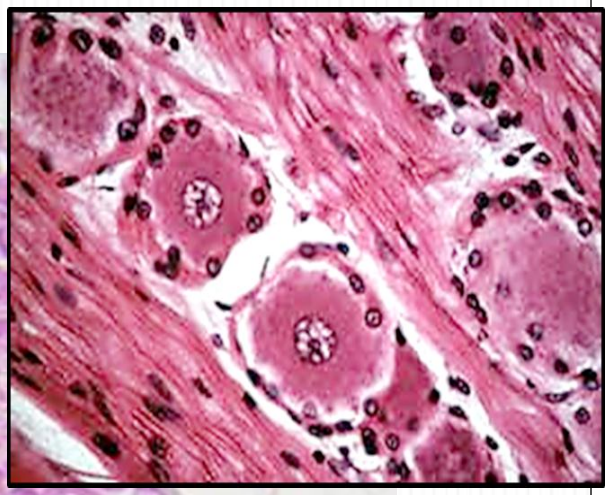


Neuroglia = Astrocytes

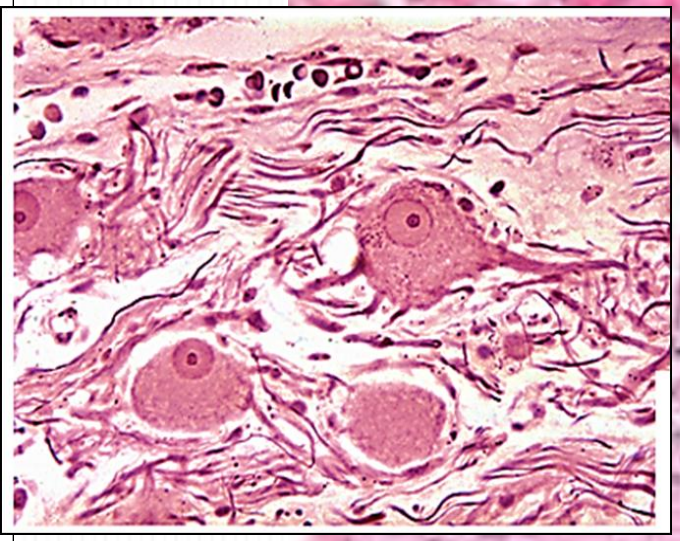


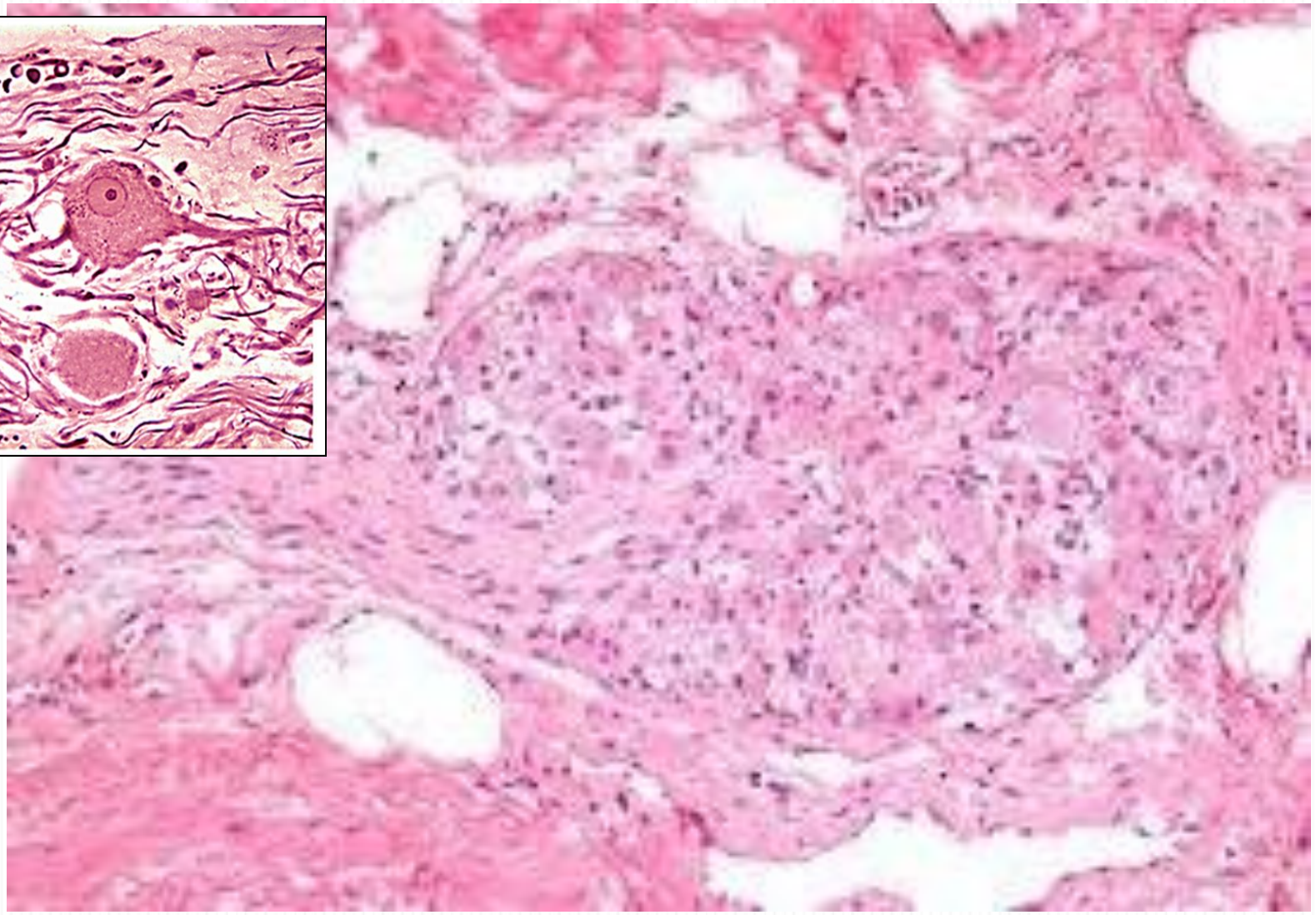
Spinal ganglia



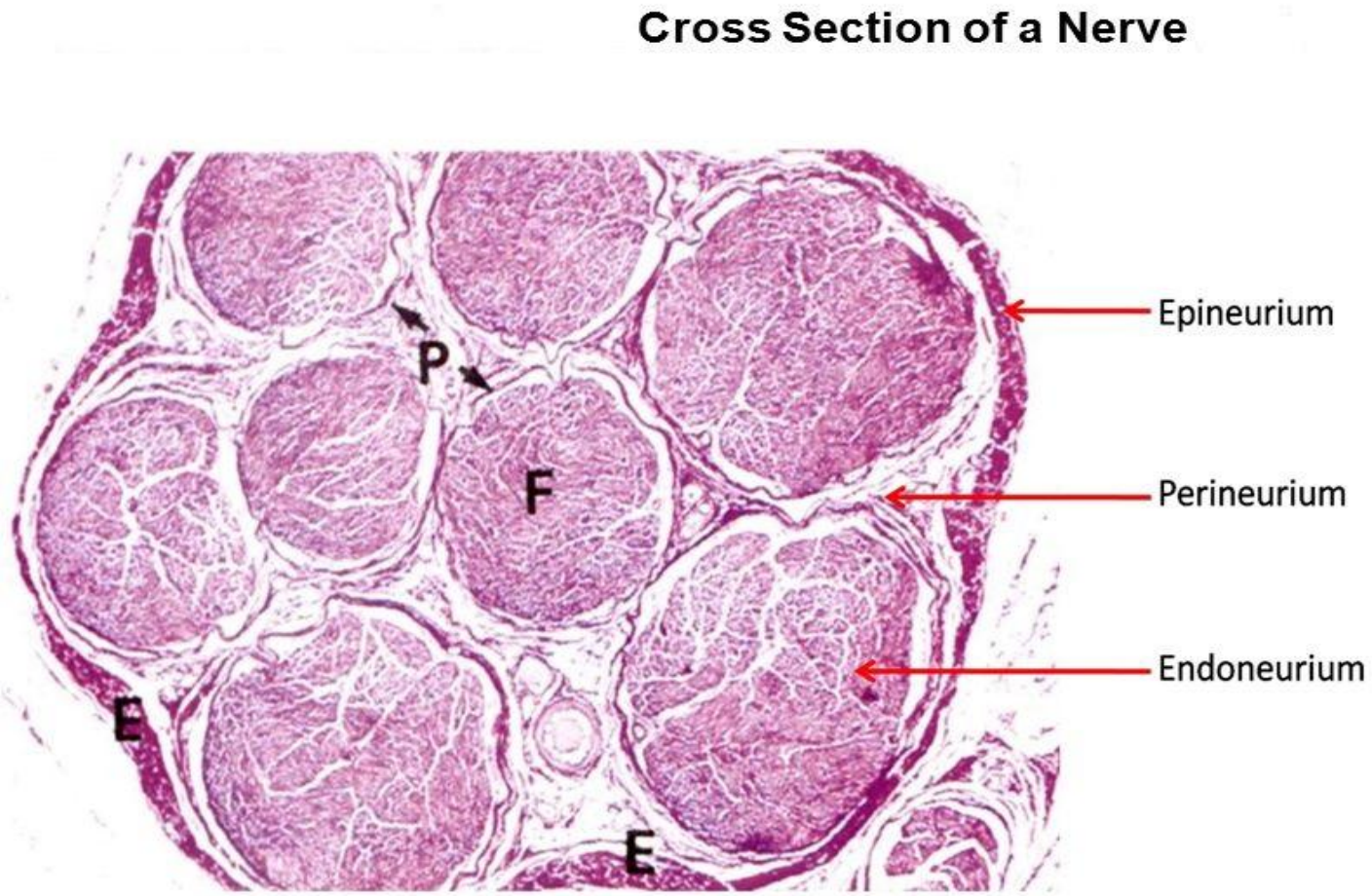


Autonomic ganglia

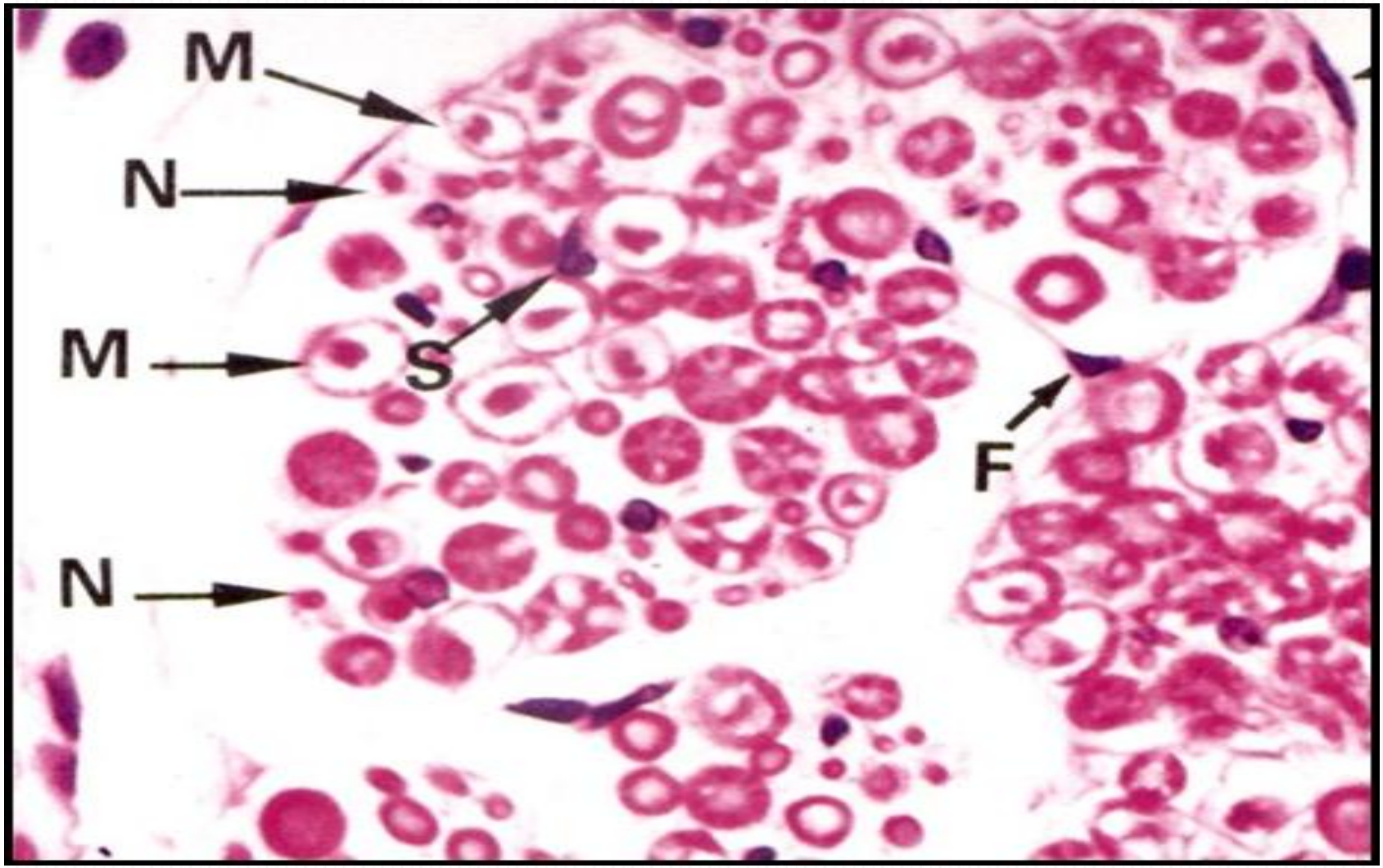




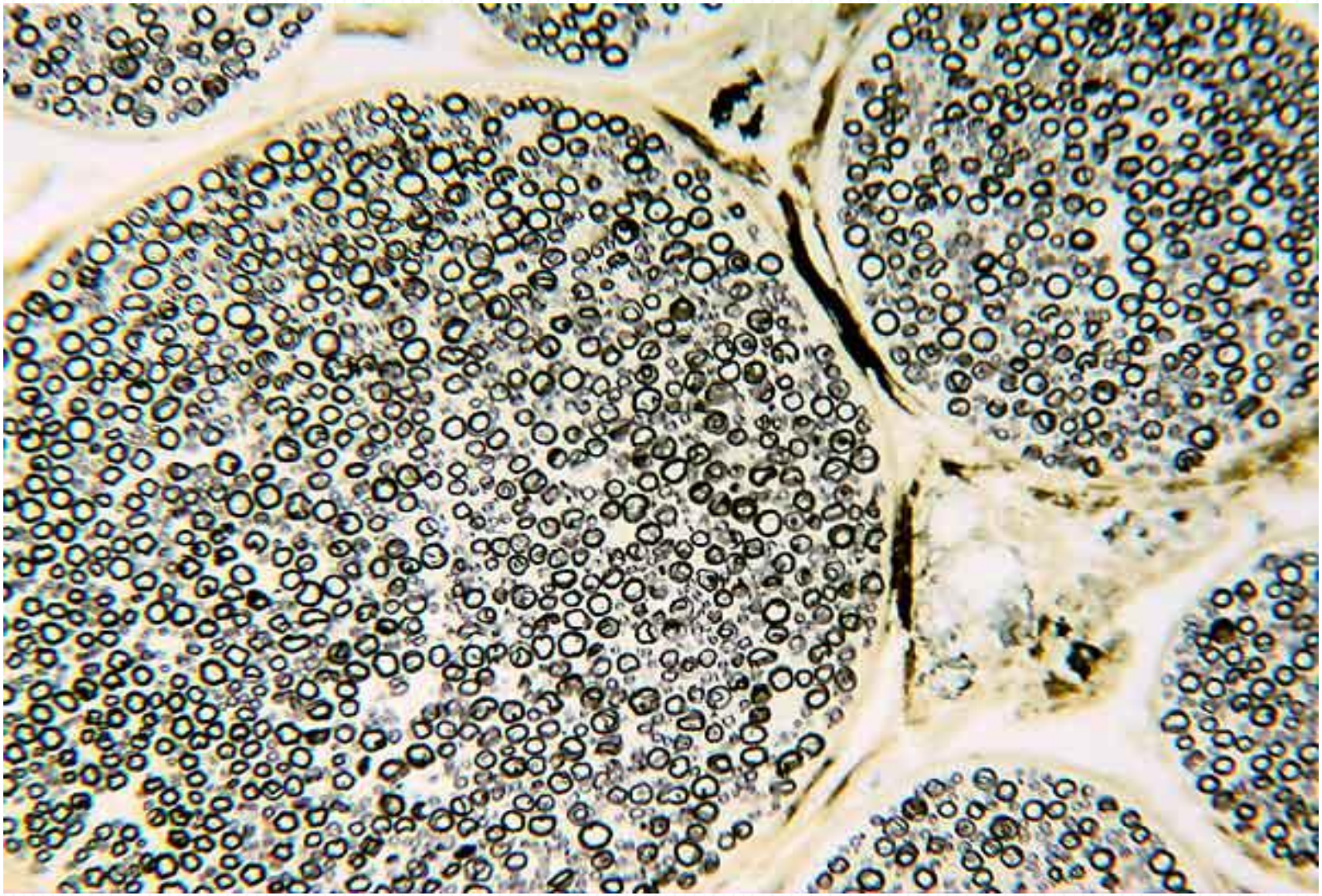
Peripheral nerve = nerve trunk



Peripheral nerve = nerve trunk



Peripheral nerve = nerve trunk
Osmic acid



Peripheral nerve = nerve trunk
Osmic acid