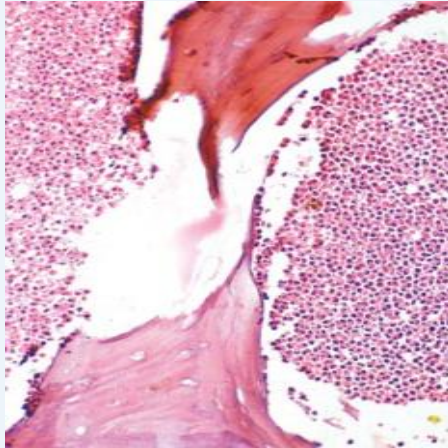


LECTURE 2

In exam

Osteomyelitis *No SAQ*

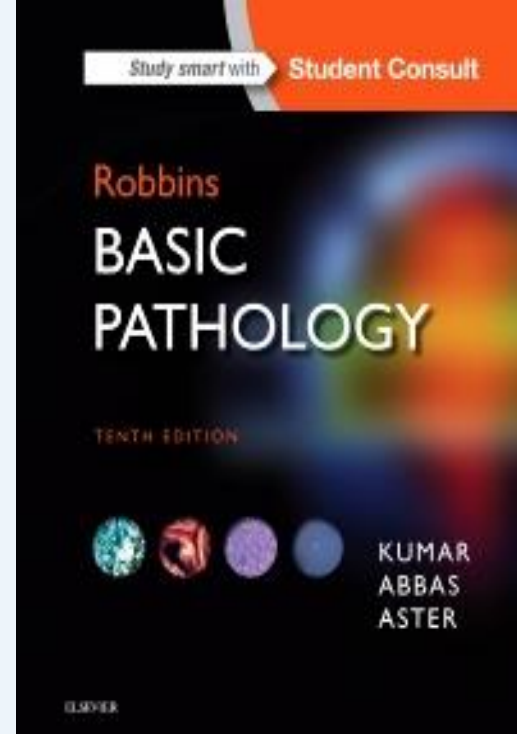
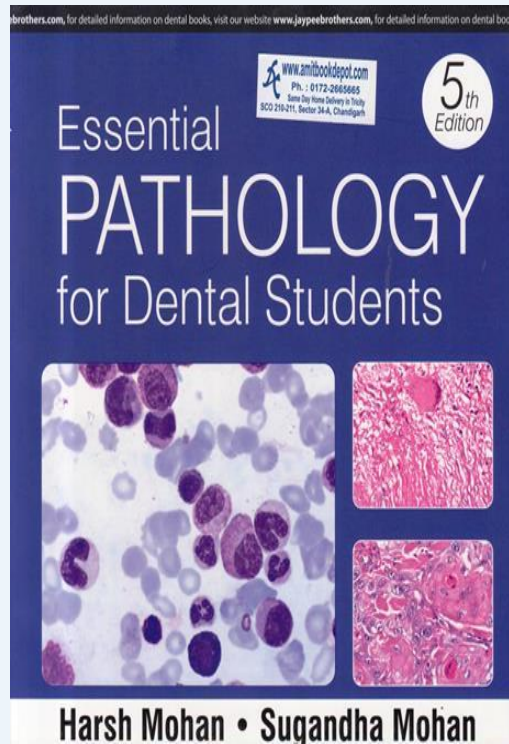
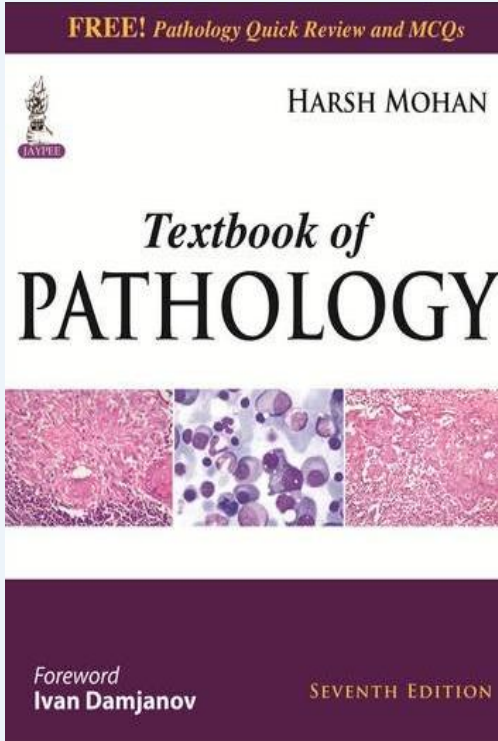


Intended Learning Outcomes:

By the end of this lesson, students will be able to:

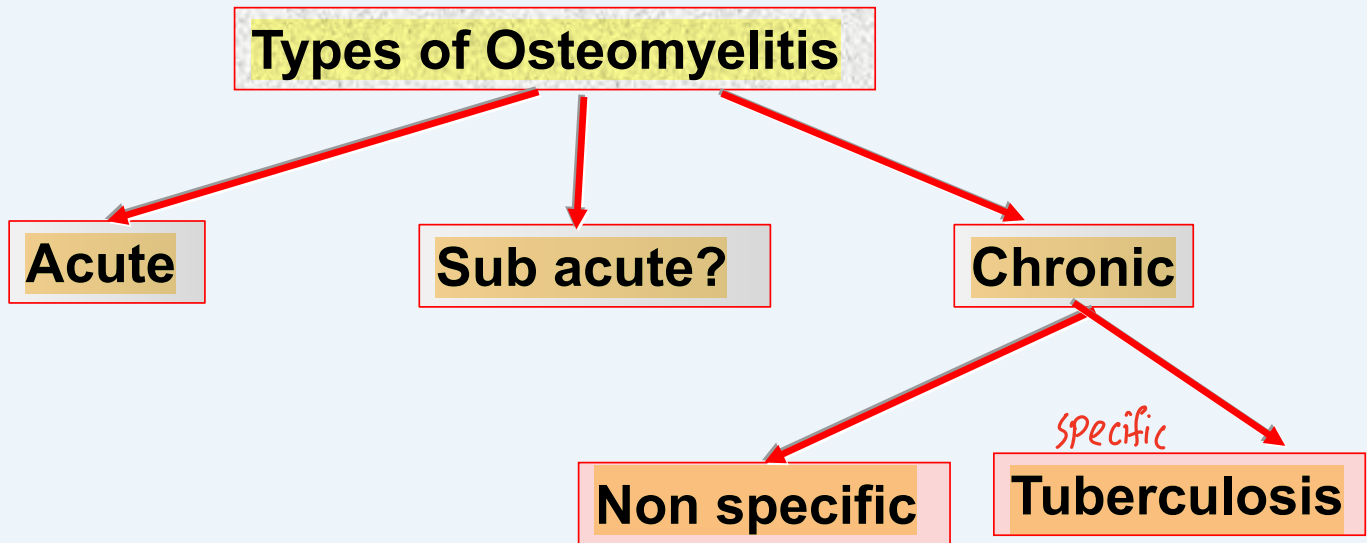
- 1- Define and classify Osteomyelitis
2. Explain the pathogenesis of osteomyelitis
- 3- Describe the morphological features of acute , chronic and tuberculous osteomyelitis.
- 3-Discuss clinical features and lab investigations of osteomyelitis

References



Osteomyelitis

Osteomyelitis denotes inflammation of bone and marrow,
Almost always secondary to infections



Acute (^{Pus forming}Pyogenic) Osteomyelitis

Acute inflammation of bone and bone marrow cavity

Causes of Acute OM

| Bacteria | Clinical setting |
|--|--|
| Staph Aureus ^{important} | The most common (80%) |
| Coliforms : | <i>In patients with UTI and IV drugs</i> |
| Hemophilus influenzae | <i>In neonate</i> |
| Group B streptococci | <i>In neonate</i> |
| Salmonella | <i>In sickle cell anemia</i> |
| Mixed | <i>Post traumatic</i> |



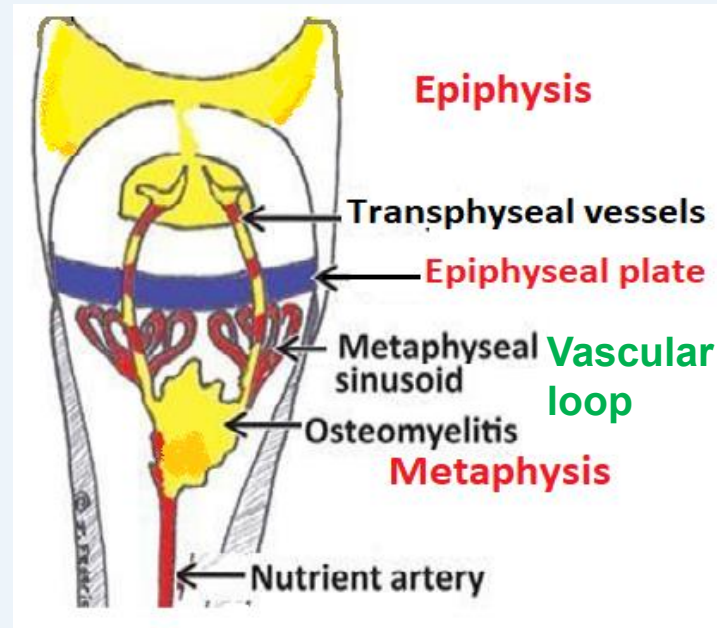
Pyogenic Bacteria

Pathogenesis of Pyogenic Osteomyelitis

Why metaphysis is a common site of osteomyelitis in children?

due to high B.S

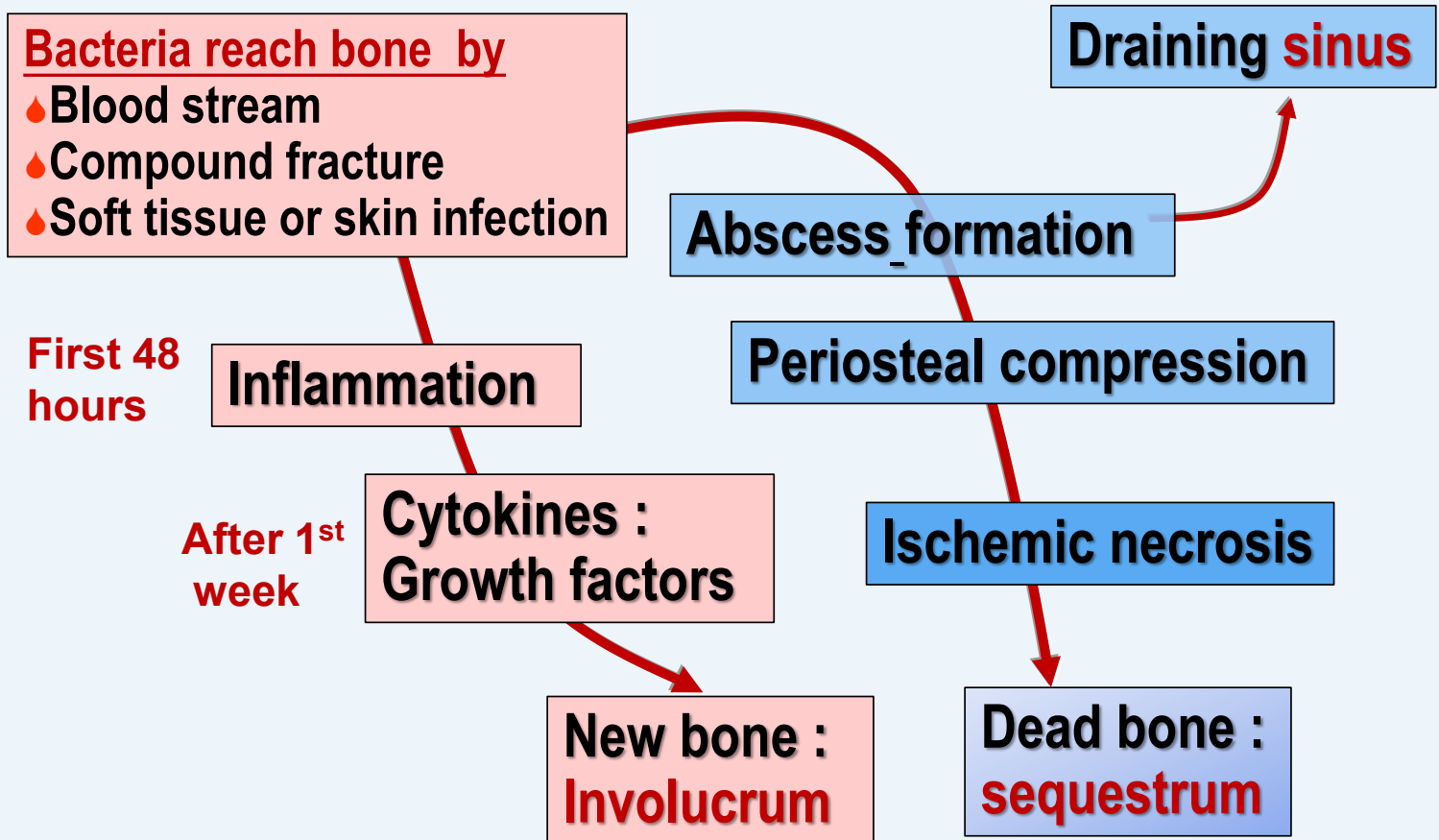
Why osteomyelitis in young infants is especially dangerous?



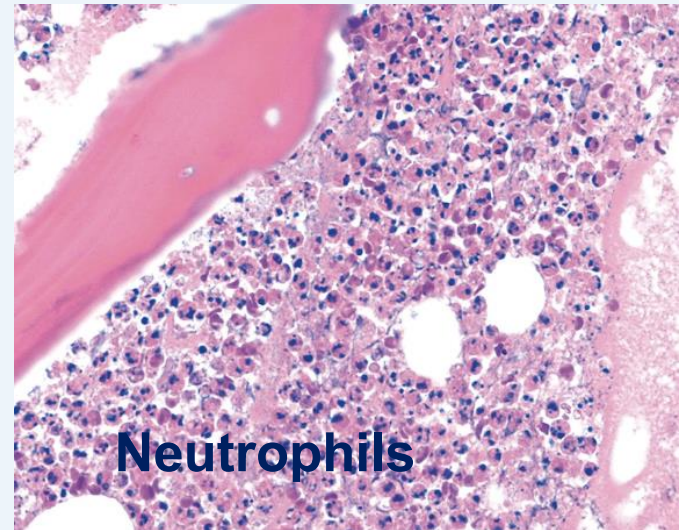
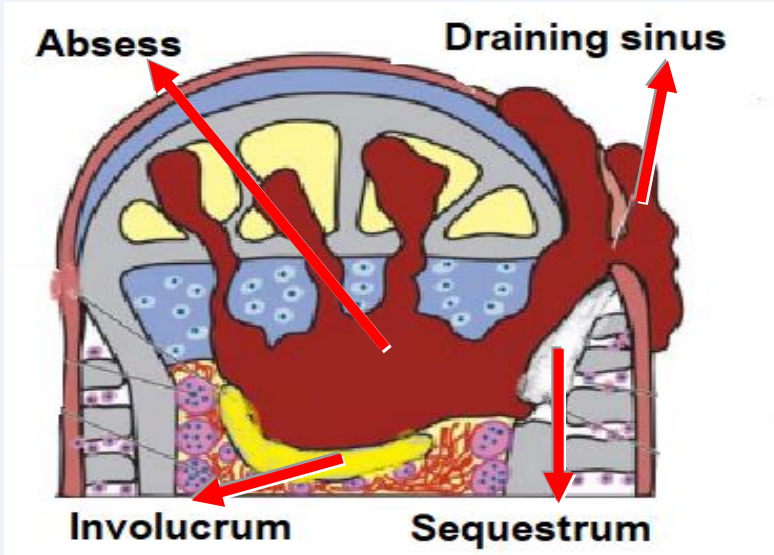
Location of is determined by osseous vascular circulation

- In **infants** (>2 years) trans-epiphyseal vessels open → bacteria reach the epiphysis
- In older **children and adults** → Plate closed → infection only in metaphysis

Pathogenesis of Pyogenic OM



Pathology of Acute osteomyelitis



Site : Metaphysis of long bone/ vertebrae

- Suppuration → Abscess formation → elevated periosteum
- Ischemic necrosis (sequestrum)
- Reactive new bone formation (involucrum)
- External sinus draining (Cloaca)

Brodie's abscess

- Subacute or chronic bone abscess
- With fibrous wall and bone scleroses
- In children – metaphysis of tibia
- 1-4 cm abscess with pus or mucous fluid



Chronic sclerosing nonsuppurative OM of Garré

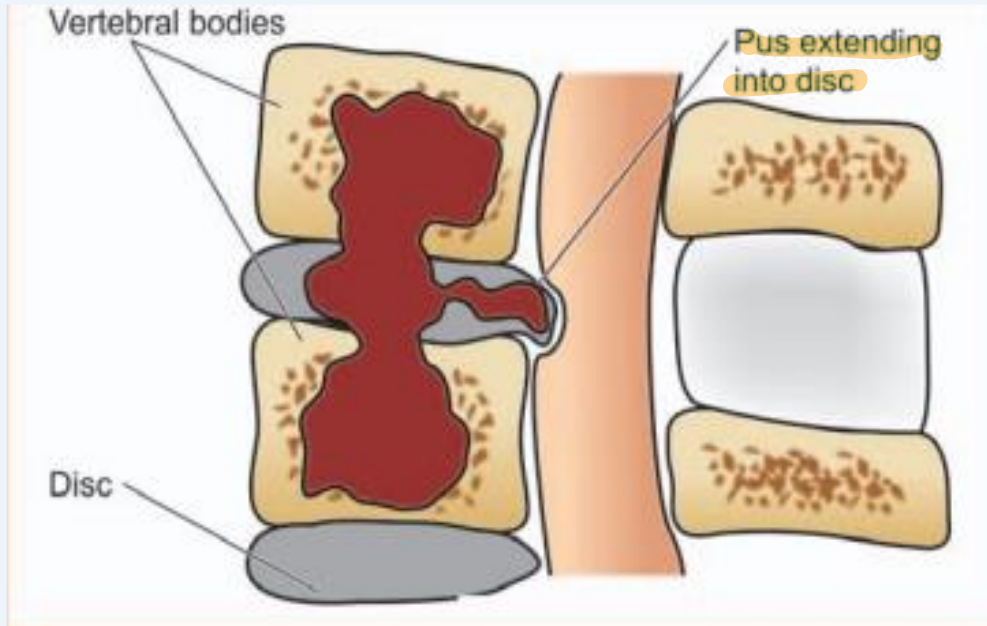
- In children and young adults
- Bone sclerosis with no suppuration

Radiology :

- bone thickening with onion skin lesion

no pus





Vertebral Acute osteomyelitis

- starts as disc infection (discitis)
- Pus extends to the near vertebral bodies
- No vertebral collapse
- No disc prolapse

Clinical Effects of acute osteomyelitis

- More in children . Why?
- Fever , pain , swelling , redness, hotness, sinus formation
- General signs and symptoms : malaise , weight loss, anorexia

Lab findings:

important

Leukocytosis (mainly neutrophils)

low HB% (anemia)

↑ ESR (Erythrocytes sedimentation rate)

↑ CRP (C -relative protein)



Complications of acute osteomyelitis

☒ **Osteonecrosis**: ischemic death of bone

- **Septicemia**
- **metastatic abscesses**
- **Septic arthritis**
- **chronic osteomyelitis**



Chronic Nonspecific Osteomyelitis

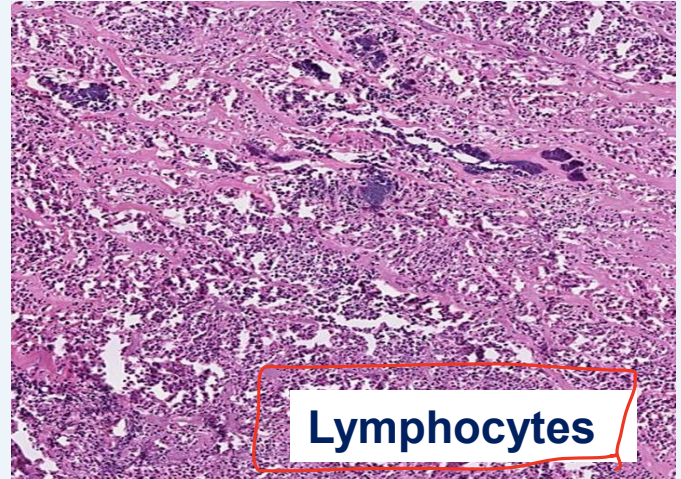
- Arise from acute osteomyelitis (6weeks)
- Clinically : sinus draining and deformity

Complications

- Bacterial spread- septicemia
- Fractures
- Squamous cell carcinoma to skin
- Amyloidosis



Pathology of chronic Osteomyelitis

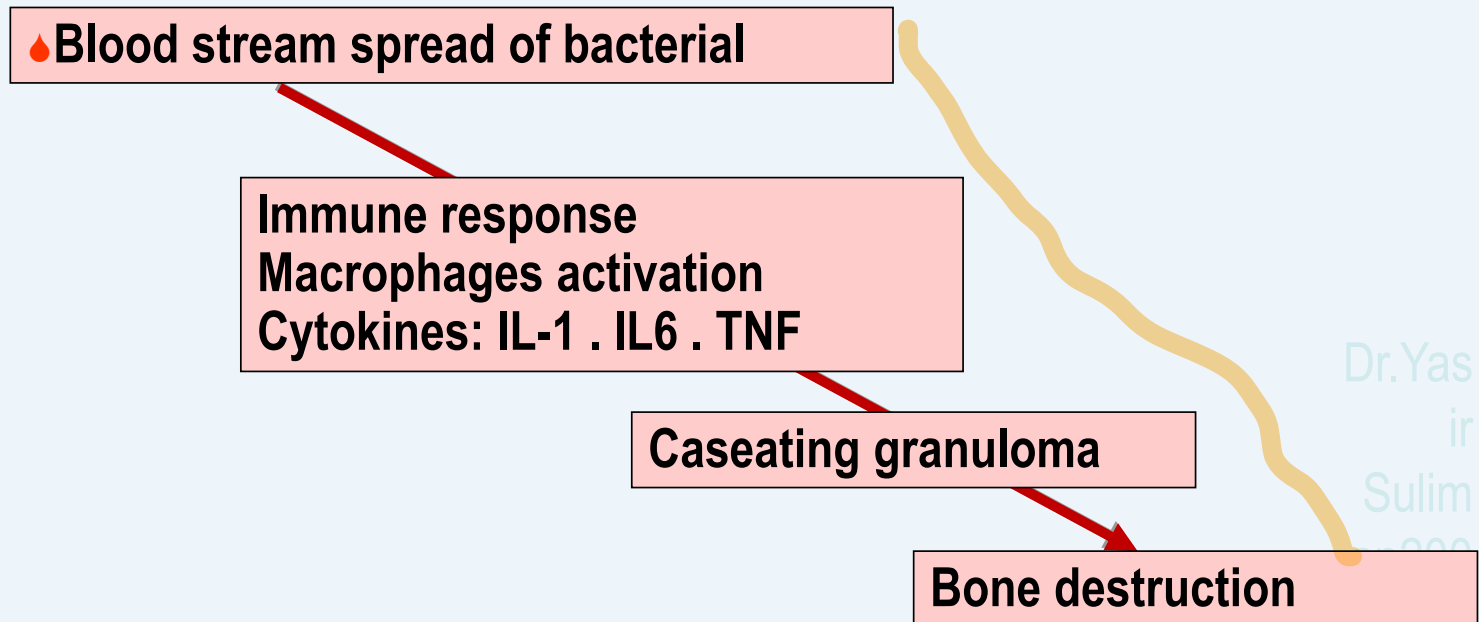


- Sinus formation : if still draining : chronic supportive OM
- Lymphocytes infiltration
- ischemic necrosis) (**sequestrum**)
- Reactive new bone (**involucrum**)
- Bone deformity

Mycobacterial Osteomyelitis

- Bone infection by *Mycobacteria Tuberculosis*
- Usually post primary type

Pathogenesis of bone Tuberculosis



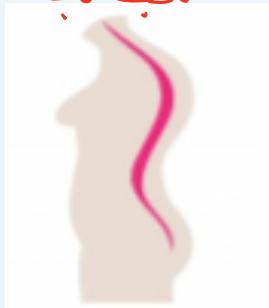
Clinical features of bone Tuberculosis

- Affects Long bones and vertebrae
- Fever, pain, sinus formation , scaring

Pott's disease:

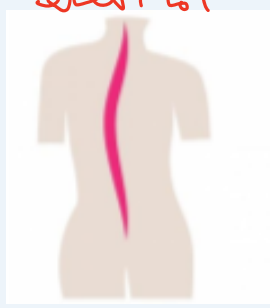
- Vertebral tuberculosis
- Collapse fracture : Kyphosis and scoliosis
- Destructive infection of vertebrae.
- Compression of spinal cord → paraplegia

للجانِب



Kyphosis

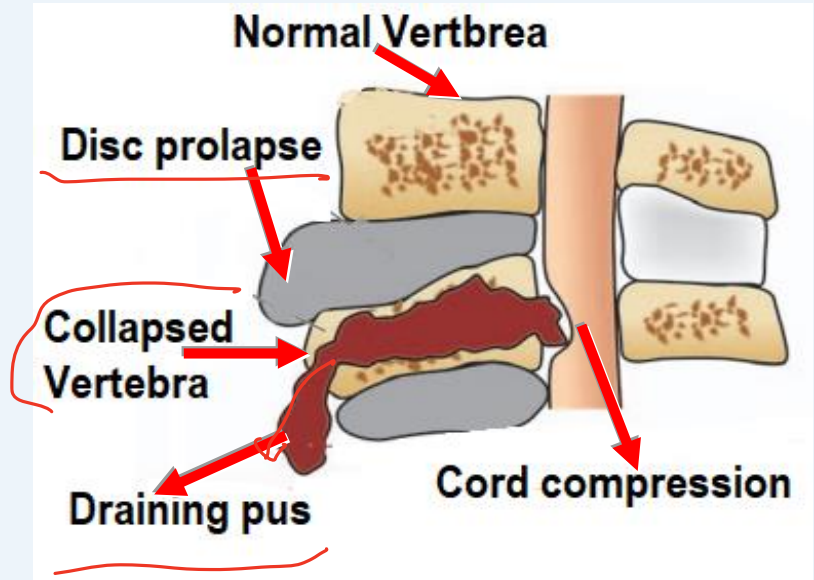
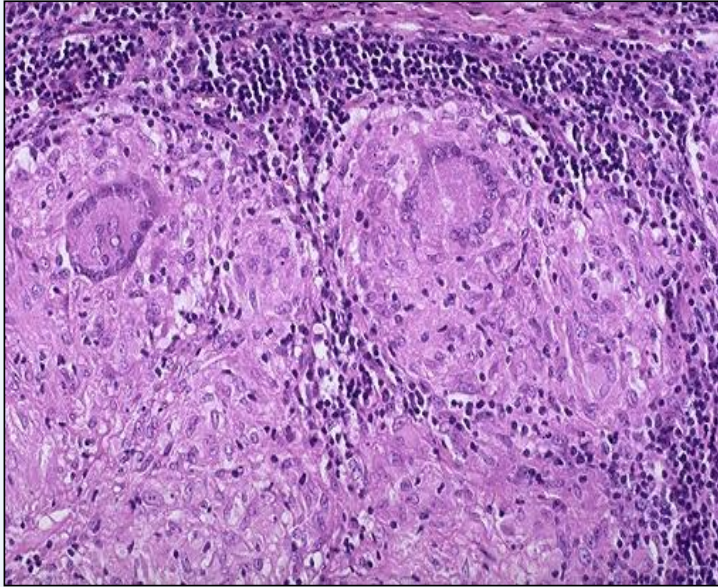
أمام الخلف



Scoliosis



Pathology of Pott's disease:



- ♦ Vertebral collapse
- ♦ Spinal cord compression
- ♦ Disc prolapse
- ♦ Spread of pus downward (Psoas Abscess)
- ♦ Histologically : caseating granuloma with giant cells

Acute or chronic ?



acute: redness
swelling



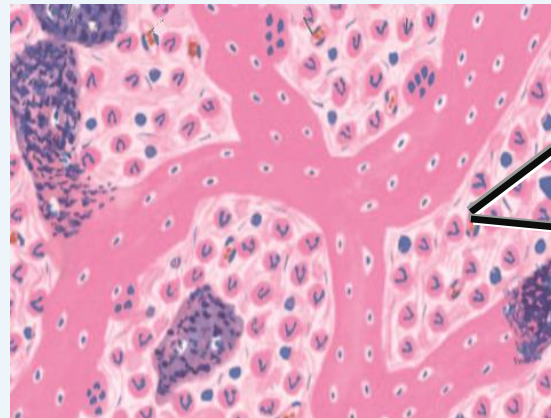
acute: swelling



chronic: pus



chronic



acute: neutrophil



**THANK
YOU**

THANK

