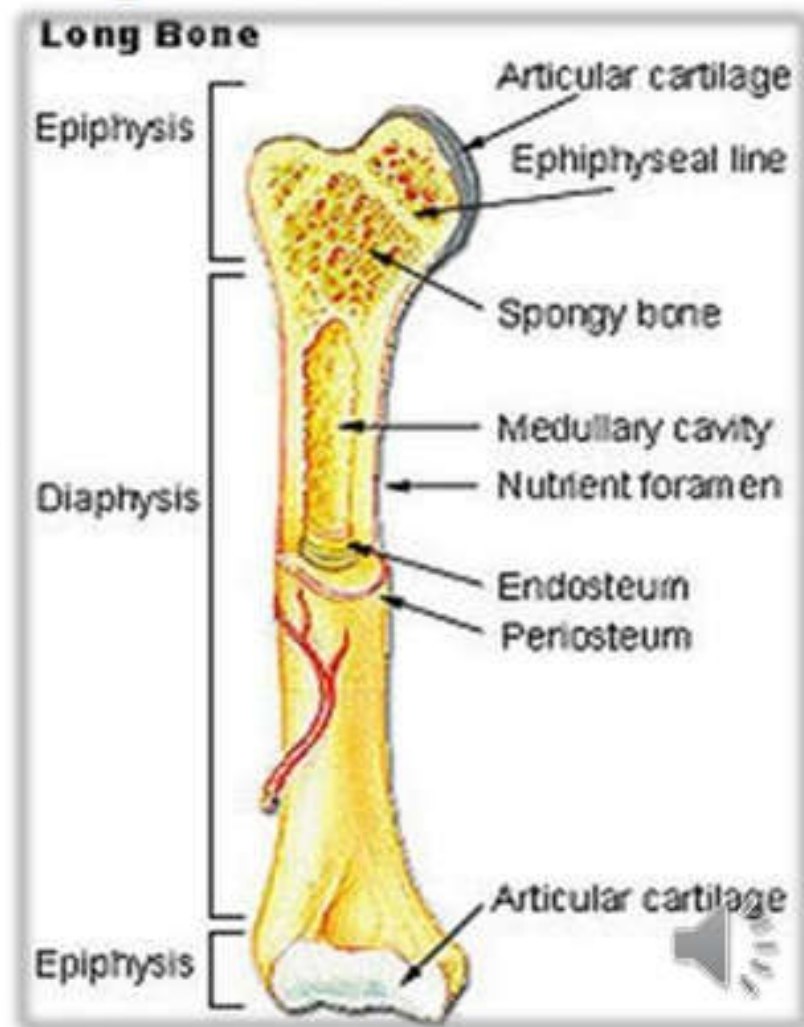


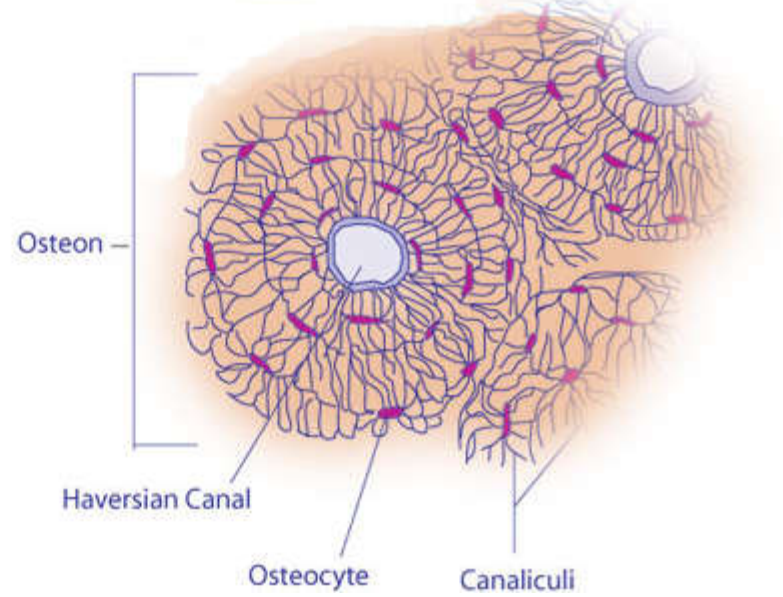
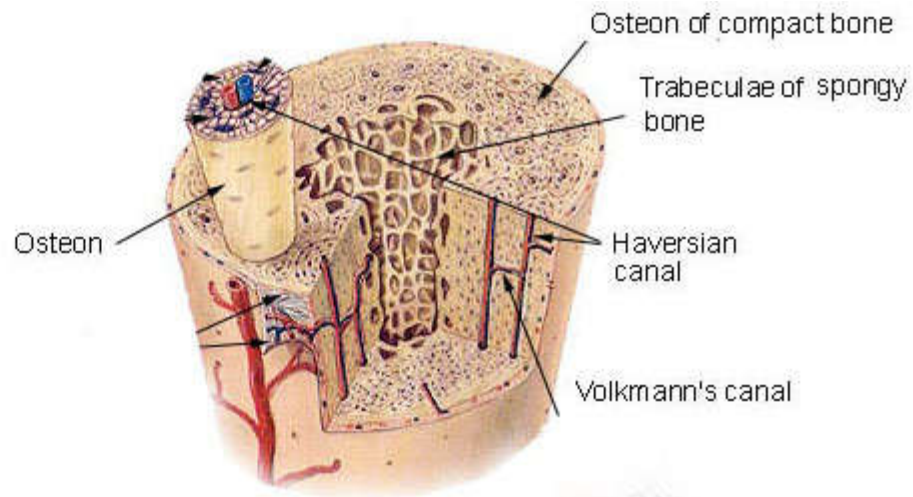
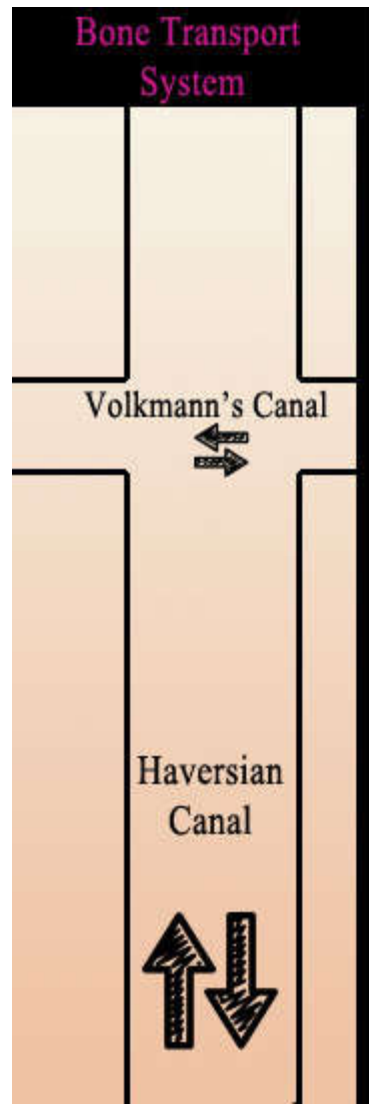
# **Bone pathology**

## **Lab 1**

# Structure of long bones

- Diaphysis
- Epiphysis
- Metaphysis
- Articular cartilage
- Periosteum
- Medullary canal (marrow cavity)
- Endosteum





# Osteomyelitis

- **Osteomyelitis** (*osteo-* derived from the Greek word *osteon*, meaning bone, *myelo-* meaning marrow, and *-itis* meaning inflammation) simply means an infection of the bone or bone marrow.
- Infection mainly involves
  - Marrow spaces
  - Haversian canals
  - Subperiosteal Spaces



46 year old cirrhotic with chronic osteomyelitis secondary to an open tibial fracture. Pt subsequently developed a complicated skin and soft tissue infection with a draining sinus tract. Cultures were positive for *E. coli* and MRSA.

## Clinical Features

- Pain
- Pyrexia
- Redness
- Tenderness
- Discharging sinus  
(seropurulent  
discharge)



## Osteomyelitis clinical picture:



# PATHOLOGY

These are end-artery branches of the nutrient artery



acute inflammatory response due to infection



tissue necrosis, breakdown of bone



Obstruction



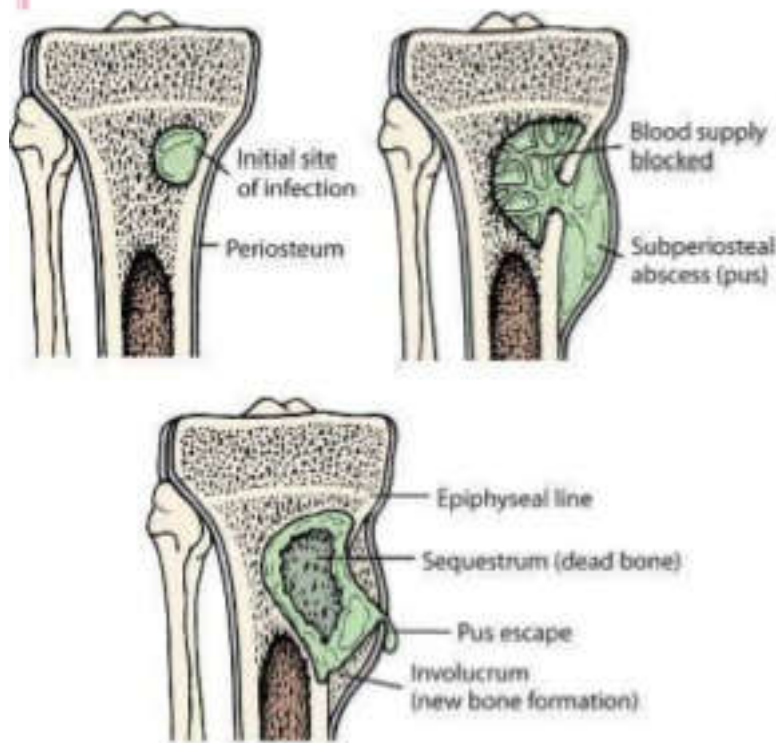
Avascular necrosis of bone



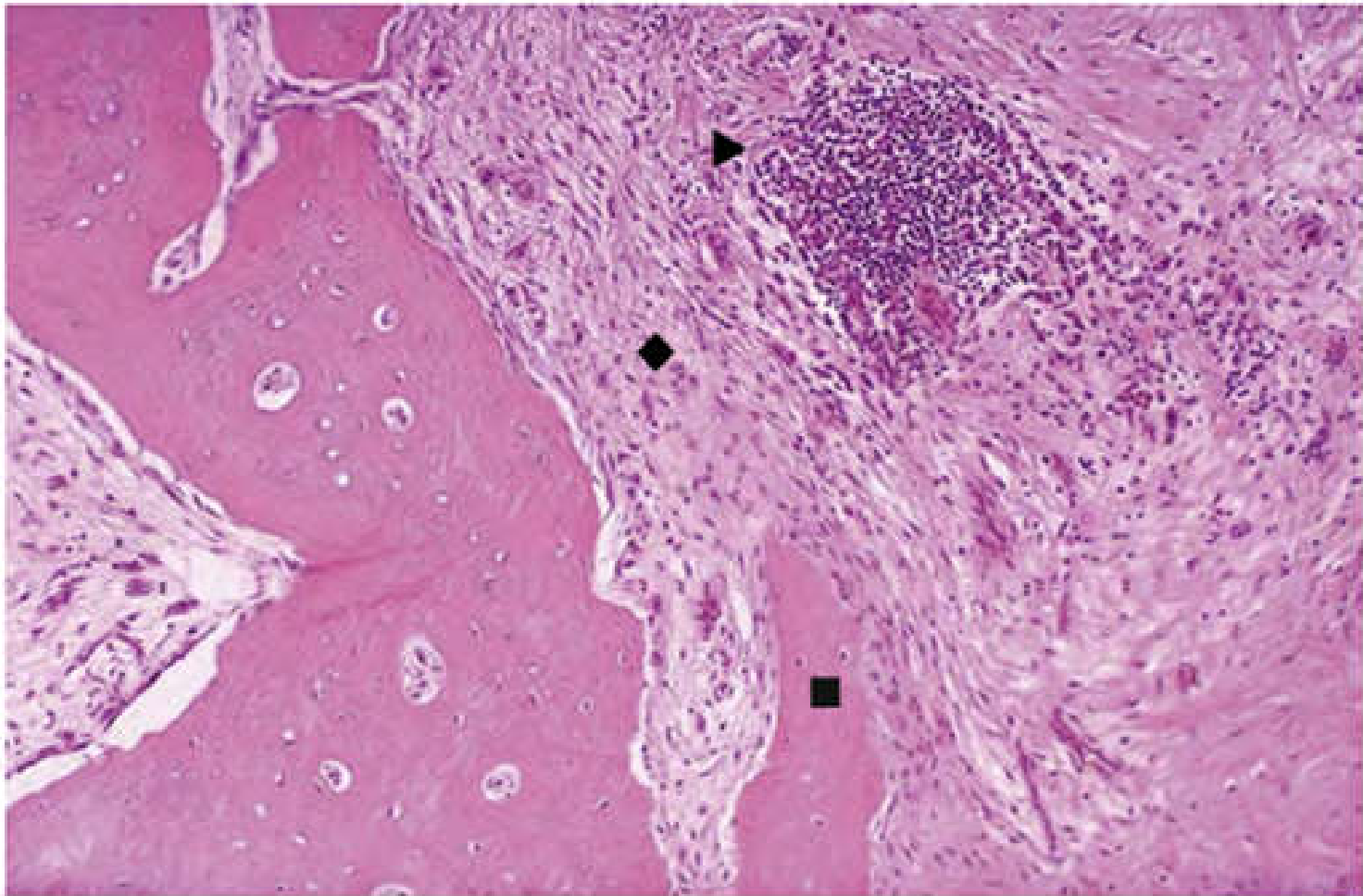
Squestra formation



**Chronic osteomyelitis**



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**Pyogenic osteomyelitis**

## Pathophysiology of Pyogenic osteomyelitis

- The primary site of infection is usually in the metaphysial region
- The infection may spread to involve the cortex and form a subperiosteal abscess; may spread into the medullary cavity
- Rarely, may spread into the adjacent joint space.

### Transient bacteremia

- *Staphylococcus aureus*
- Gram-negative bacilli
- *Salmonella* (rare), especially in sickle cell disease

