



BONES AND JOINTS

- It is made up of two components:
 - ✚ Organic matrix (osteoid)
 - ✚ Calcium hydroxyapatite

- Cells of bones:
 - i. Osteoprogenitor cells: pluripotent stem cells that gives rise to other cells.
 - ii. Osteocytes:
 - Maintains calcium and phosphate levels.
 - Homeostasis in bones.
 - iii. Osteoblasts : initiate process of mineralisation, synthesise, transport and arrange many matrix process.
 - iv. Osteoclasts: cells responsible for bone resorption.

- Infections:
 - i. Osteomyelitis :
 - Inflammation of bone/secondary to infection.
 - Secondary to systemic diseases or solitary to focus diseases.
 - Mainly caused by pyogenic bacteria and mycobacteria.

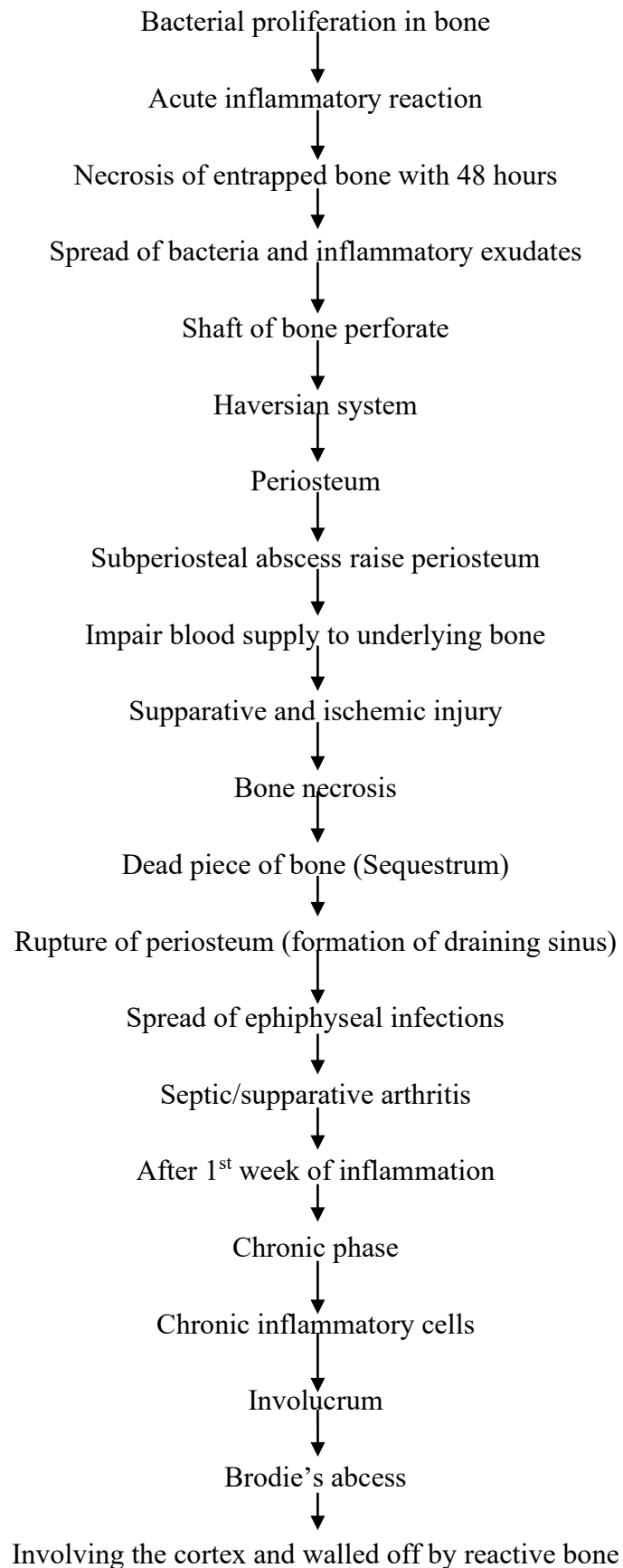
 - i. Pyogenic osteomyelitis:
 - Caused by bacteria.
 - Haematogenous spread.
 - Initial bacteremia.
 - In adults, open fractures, surgical procedures, diabetic infection of feet.

 - Causative agent:
 - ✓ Mainly staphylococcus aureus.
 - ✓ Location: within the bone is based on osseous vascular circulation.

 - Clinical cause:
 - ✓ If the spread is haematogenous, symptoms are systemic.
 - ✓ Intense throbbing pain in the affected area.
 - ✓ Cystic focus of bone destruction with zone of bone sclerosis (radiographic).
 - ✓ Chronic osteomyelitis complications:
 1. Pathologic fractures
 2. Amyloidosis
 3. Sepsis
 4. Endocarditis
 5. Squamous cell carcinoma



- Morphology :





ii. Tuberculous osteomyelitis

- Osseous involvement – 1-3% individual with TB or extrapulmonary TB
- Blood borne organism causes it.
- Other routes – draining lymphatics
- Site of involvement:
 1. Spine(T&L) - 40% of cases
 2. Knee
 3. Hip
- Involvement of spine – **Pott's disease**
- Breakthrough of the infection along intervertebral disc
- Extension of soft tissues to form abscess – **Cold Abscess**
- Clinical cause:
 1. Pain on motion
 2. localised tenderness
 3. low grade fever
 4. chills
 5. Weight loss
 6. Permanent compression fracture due to severe destruction of vertebrae
 7. Kyphotic or scoliotic deformation.

