

Osteoporosis, osteomyelitis, osteoarthritis (pathology)

Presented By

Mrs. Divya K M

Associate Professor

MES College of Nursing

Osteoporosis

- Osteoporosis is a multifactorial disease characterized by an absolute reduction of the total bone mass

Classification

- **Primary osteoporosis** – this is seen in elderly people . This is more common in women than in men.The etiological factors are not clear.
- **Secondary osteoporosis**- This occur at any age and got a identifyable etiologic factors like hormonal disturbance, malabsorption, immobilization, drugs and tumors.

Pathology

- Osteoporotic bone are thin and brittle so prone to pathologic fractures
- Loss of both cortical and spongy bone
- Crush fractures of vertebral bodies are common in primary osteoporosis.

Clinical features

- Back pain
- Kyphosis is seen in fractures of vertebral bodies
- Calcium, phosphate and alkaline phosphatase levels are normal. This disease is diagnosed by radiologic studies and measuring bone density.

Osteomyelitis



- Osteomyelitis is the bacterial infection of the bone. It may be acute infection or chronic
- Staphylococcus aureus is the common bacteria causing osteomyelitis
- Mycobacterium tuberculosis is the common bacteria causing chronic osteomyelitis.

Pathology and pathogenesis

- Metaphysis is the most vascularised area of the bone. During bacteremia the bacteria get a direct access to metaphysis through nutrient arteries of the bone
- Bacteria multiply rapidly forming nidus of infection
- This is followed by infiltration of neutrophils forming pus and spreading on to the adjacent bone.

- **Sequestrum** is the devitalized bone fragment seen in the cavities filled with pus
- Subsequently there is formation of reactive bone at the site of inflammation and this new bone is called **involucrum**. This predispose to fracture formation and poor healing.

Arthritis



- The common joint diseases involve osteoarthritis and rheumatoid arthritis.

Osteoarthritis

- This is most common joint disease
- It is also called degenerative joint disease
- This is seen in person older than 65yrs of age
- It is classified into primary osteoarthritis and secondary osteoarthritis
- The cause of primary osteoarthritis is unknown
- Secondary osteoarthritis is due to repeated trauma, congenitally abnormal joints.

Pathology

- Initially articular cartilage softens, shows surface defects with irregular thinning
- There is formation of vertical clefts in the articular cartilage
- Later the cartilage fragments and shed into the joint cavity
- There is formation of fluid filled cysts and bone defect communicates with joint cavity
- At the joint margins osteophytes (new bone) form projecting into adjacent soft tissue

Clinical feature

- Symptoms are nonspecific. Majority of the changes are observed in X ray
- The common symptoms are pain, crepitus, swollen and warm joints
- Pain is relieved by rest and stiffness lasts for 15-20min
- X ray findings include irregular joint space with fragmented cartilage, sclerotic bone, and cystic change

A photograph of a white card with the words "Thank you" written in purple cursive. The card is placed on a light-colored, marbled surface. To the left of the card is a bouquet of purple flowers with green leaves. To the right of the card is a black pen with a white grip. In the bottom right corner, there is a gift box wrapped in white paper with a red and white plaid ribbon.

Thank
you