BONE PATHOLOGY I & II

Lecturer: Theresa Kristopaitis, M.D.

Reading Assignment: Robbins Basic Pathology 9th Ed.
Chapter 20, pp.765-782
Chapter 7, pp.298-300 (Rickets, Osteomalacia)

EDUCATIONAL OBJECTIVES:
- Define the following terms:
  - Fracture
  - Pathologic fracture
  - Callus
- Describe the roles of RANK, RANKL, and OPG in the regulation of osteoclast formation and function and in the pathogenesis of disease.
- Describe the etiology, pathogenesis, pathology, and clinical manifestations of the following bone diseases:
  - Osteoporosis
  - Rickets
  - Osteomalacia
- Compare and contrast the pathogenesis and pathology of osteoporosis and osteomalacia.
- Describe skeletal manifestations of hyperparathyroidism.
- Describe the etiology, pathogenesis, pathology, and clinical manifestations of Paget disease of bone.
- Define “high output cardiac failure” and summarize how it might develop in a patient with Paget Disease of bone.
- Discuss achondroplasia in terms of pathogenesis and clinical manifestations.
- Discuss osteogenesis imperfecta in terms of pathogenesis and clinical manifestations.
- Discuss avascular necrosis in terms of pathogenesis, clinical manifestations and complications.
- Summarize the classic changes in serum calcium, phosphorous, alkaline phosphatase and PTH levels in patients with osteoporosis, osteomalacia, hyperparathyroidism and Paget disease of bone (particularly important for USMLE)
Describe the pathology, clinical manifestations, clinical behavior and prognosis of the following primary bone neoplasms:
Osteoid osteoma
Osteosarcoma
Osteochondroma
Chondrosarcoma
Ewing Sarcoma (self-study)

Describe the pathogenesis of lytic vs blastic bone metastases.

List the most common neoplasms which cause lytic vs blastic bone metastases.