Bone Diseases
DENT 5322

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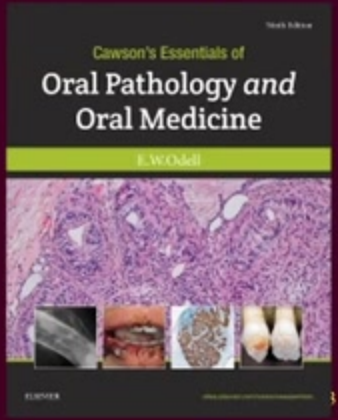
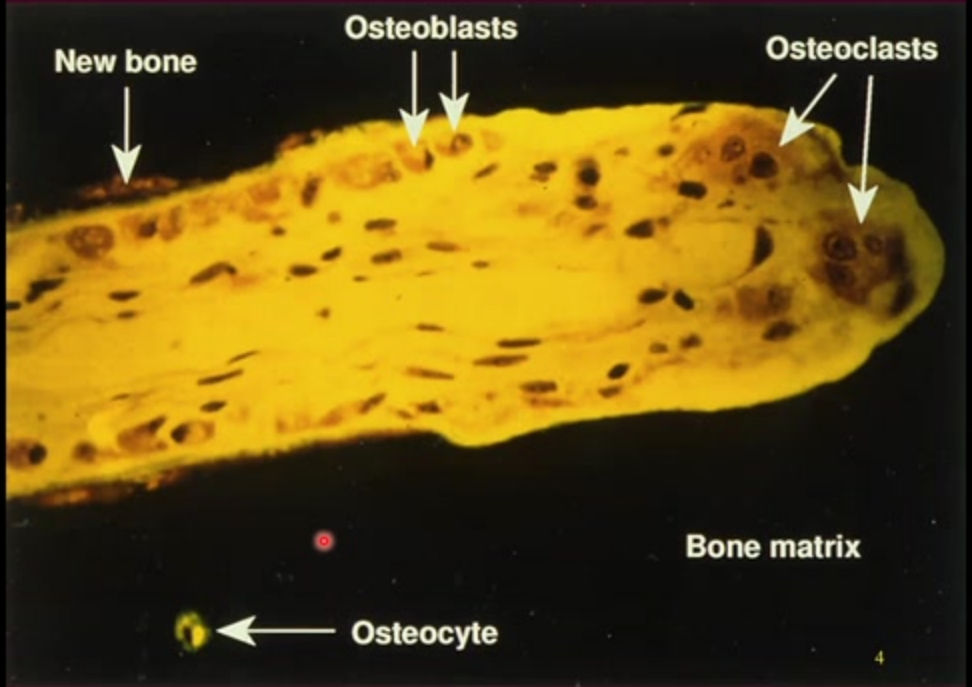
Learning Objectives

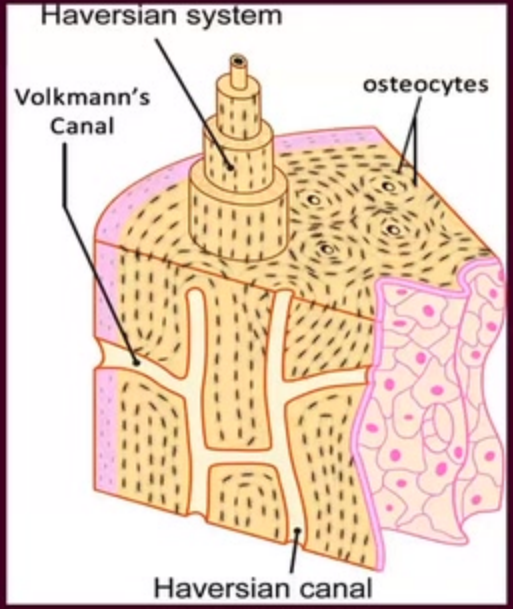
- Explain the aetiology, pathogenesis, the clinical (including radiographic) and histopathological features, diagnosis and treatment of bone diseases
- For more details, please refer to Unit Guide

Reference

- Cawson's Essentials of Oral Pathology and Oral Medicine
- 9th Edition
- **Authors:** Edward Odell




New bone
Osteoblasts
Osteoclasts
Bone matrix
Osteocyte

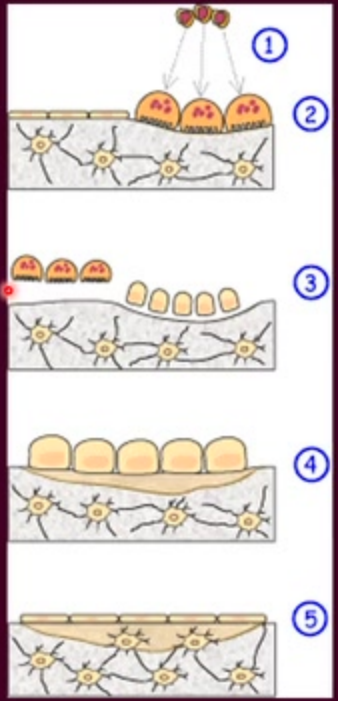

Haversian system
Volkmann's Canal
osteocytes
Haversian canal

Remodeling

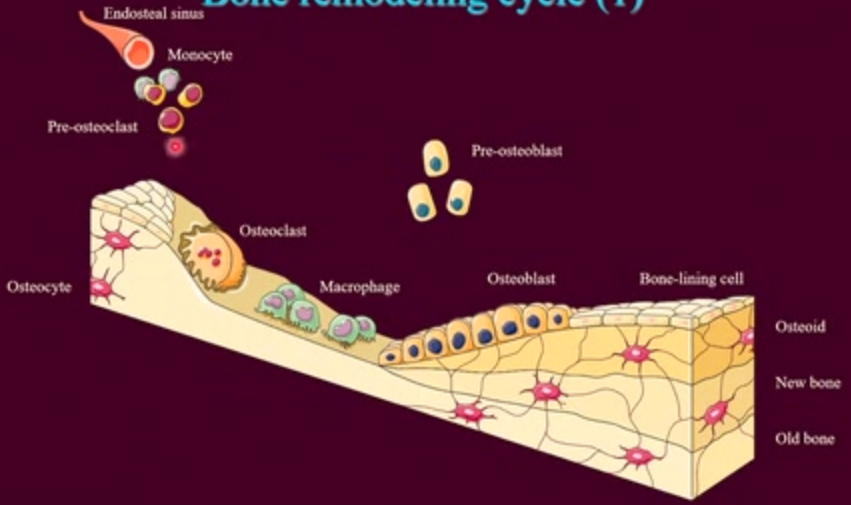
- Replacement of old tissue by new bone

Five phases:

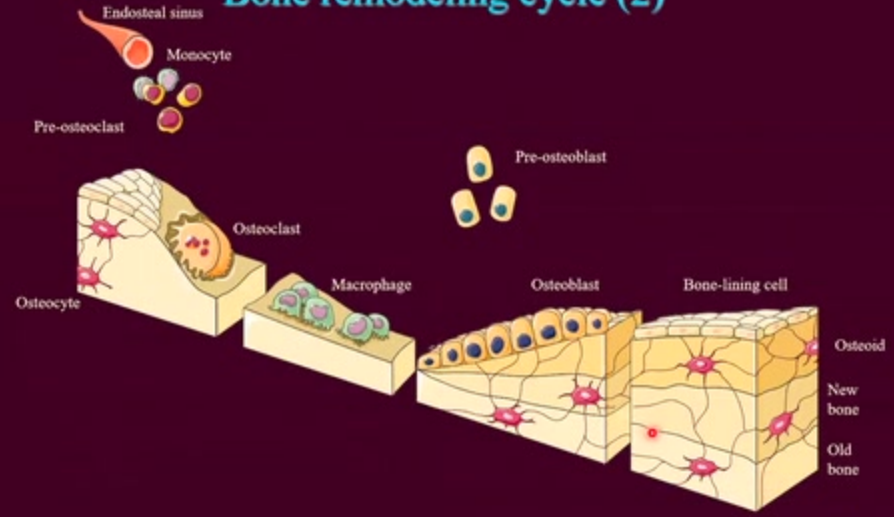
- 1. Activation: preosteoclasts are stimulated and differentiate under the influence of cytokines and growth factors into mature active osteoclasts
  2. Resorption: osteoclasts digest mineral matrix (old bone)
  3. Reversal: end of resorption
  4. Formation: osteoblasts synthesize new bone matrix
  5. Quiescence: osteoblasts become resting bone lining cells on the newly formed bone surface



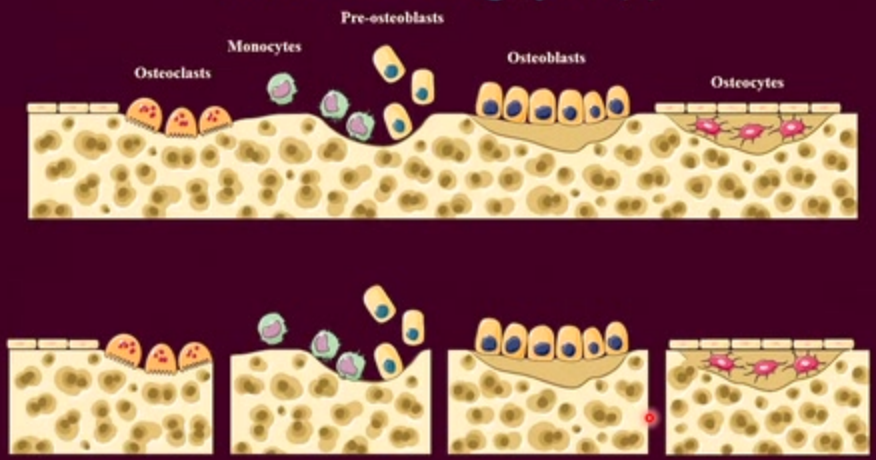
Bone remodeling cycle (1)



Bone remodeling cycle (2)



Bone remodeling cycle (3)




Ostéoblastes
Ostéocyte

Radiography

- Periapical
- OPG
- CBCT
- CT Scan

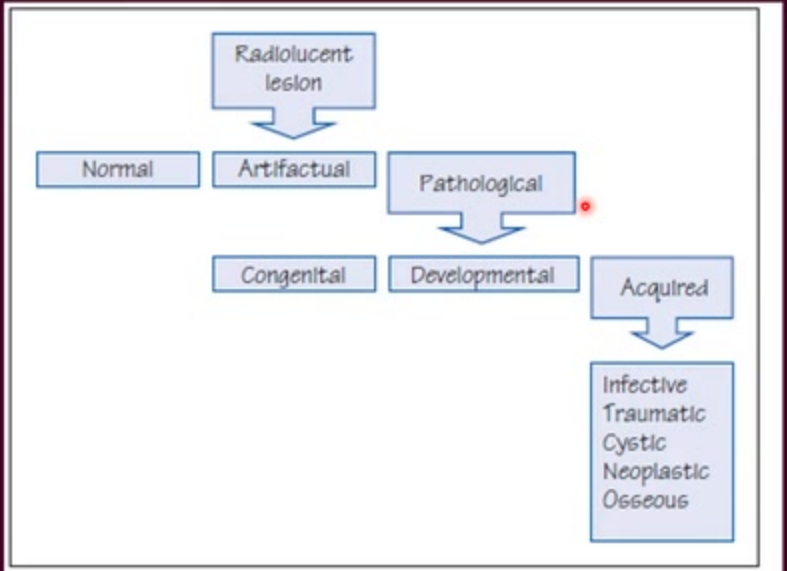


Figure 53.1a Radiolucent lesions.

Source: Oral Medicine and Pathology at a glance, 2010, Scully et al.

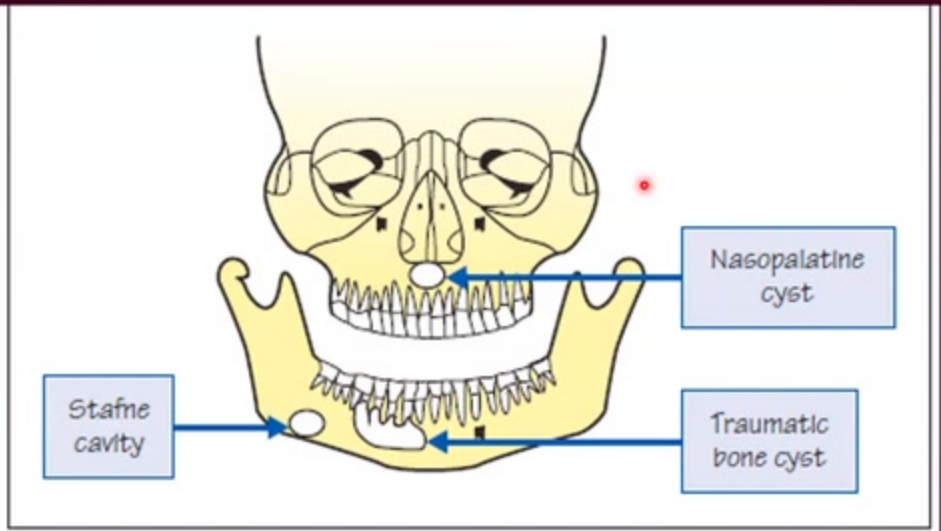


Figure 53.1b Nonodontogenic radiolucent cystic lesions.

Source: Oral Medicine and Pathology at a glance, 2010, Scully et al.

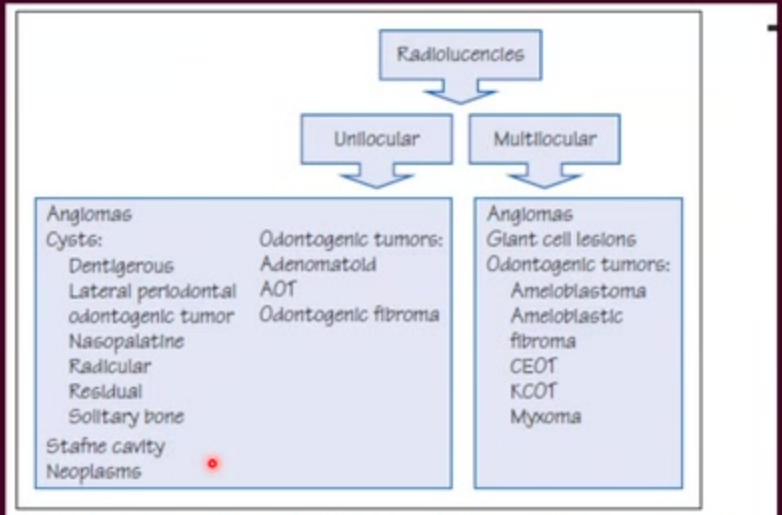


Figure 53.4b Radiolucent lesions. CEOT, calcifying epithelial odontogenic tumor; KCOT, keratocystic odontogenic tumor; AOT, adenomatoid odontogenic tumor.

Source: Oral Medicine and Pathology at a glance, 2010, Scully et al.

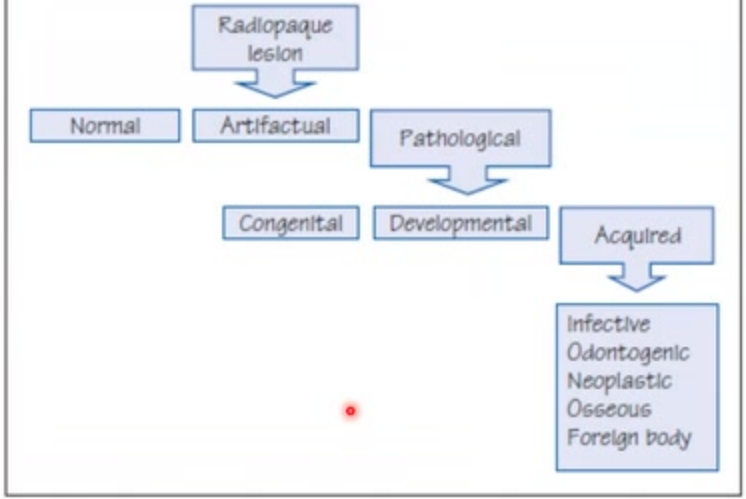


Figure 53.4a Radiopaque lesions.

Source: Oral Medicine and Pathology at a glance, 2010, Scully et al.

Tori and Exostosis

- Tori
  - 2-10% of adults;
  - Clinically: exophytic, hard, uninodular or multinodular bony masses covered by mucosa that may be ulcerated from trauma;
  - torus palatinus and torus mandibularis on the midline of palate and lingual mandible (usually bilateral and symmetric), respectively;
  - often site of bisphosphonate-associated osteonecrosis

Tori and Exostosis

- Exostoses:
  - 27% of adults;
  - male predilection (5 : 1);
  - Clinically: outgrowths of bone, nodular or sessile frequently on buccal aspects of mandible and maxilla or ascending arch of the palate and more than 90% having concurrent tori
- Possible aetiology:
  - Chronic irritation
  - Periosteal proliferation
  - Bone formation