

CALCIFYING ODONTOGENIC CYST (COC)

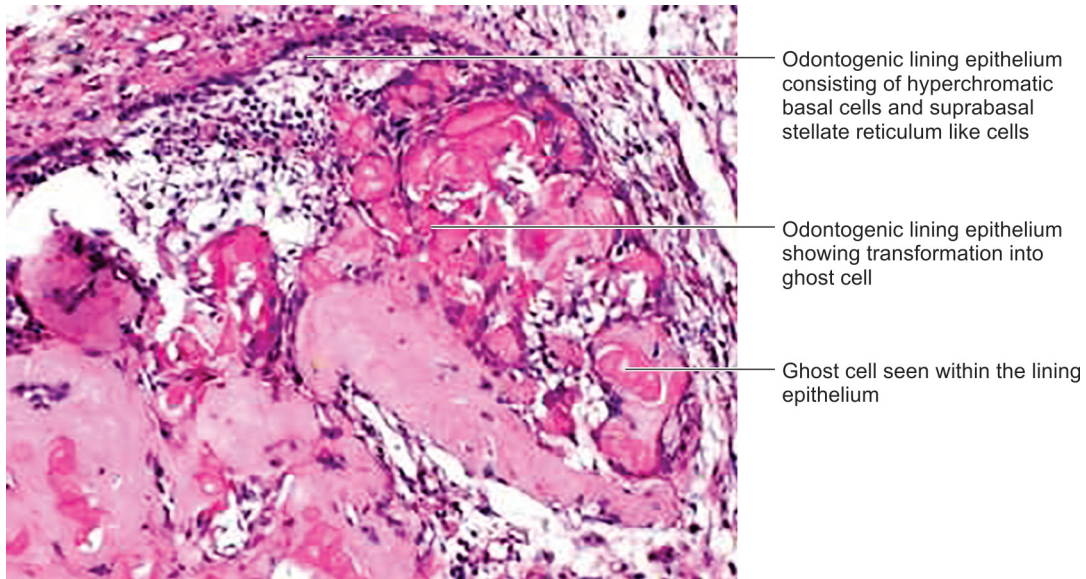


Fig. 1.13: 10X

Key Points

- Also known as 'keratinizing and calcifying odontogenic cyst', Gorlin-Gold cyst.
- Equal frequency in maxilla and mandible, most cases occur in incisor and canine region.
- No gender predilection.
- Peak incidence seen in second decade.
- COC is sometimes associated with odontogenic hamartomas or benign neoplasms.

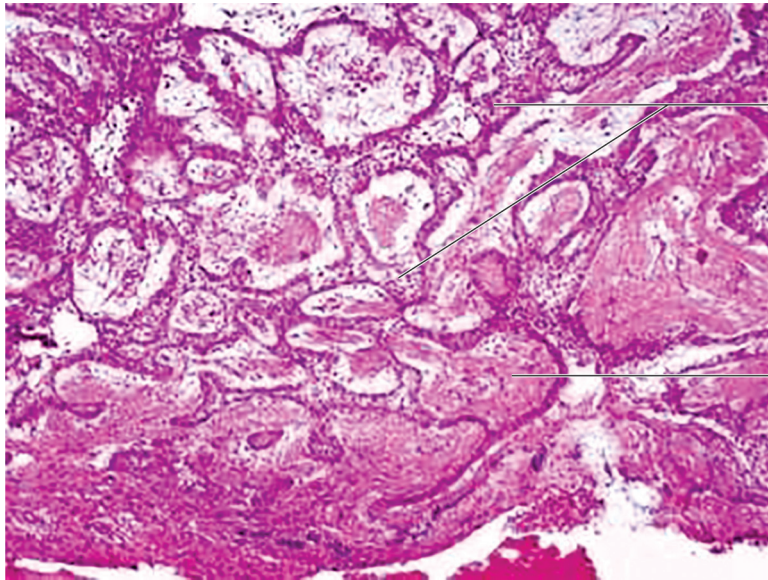
Radiographically

Usually shows unilocular but a few have been multilocular radiolucency. Irregular calcified bodies of varying size and opacity may be seen in the radiolucent area.

Histopathological Picture

Histopathologically, COC consist of:

- The cyst lining shows proliferation to the point resembling ameloblastoma (i.e. basal columnar cells and suprabasal stellate and spindled cells in an arrangement that suggest stellate reticulum).
- Within this proliferation of epithelium, cells undergoing the characteristic 'ghost cell' keratinization is seen.
- Dystrophic calcification of the ghost cells may be seen.
- Dysplastic dentine may be laid down adjacent to the basal layer of the epithelium.



Odontogenic epithelial islands arranged in the form of network and cords with peripheral cuboidal cells and suprabasal stellate reticulum like cells

Mature fibrocellular connective tissue

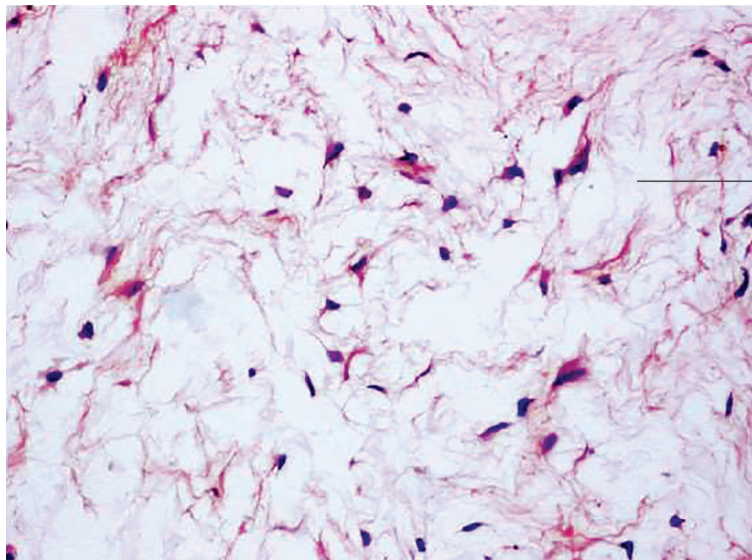
Fig. 2.7: 4X

Histopathological Picture

- This term is applied when suprabasal stellate reticulum like cells show extensive squamous metaplasia.
- Sometimes keratin formation may be seen in the center of islands of tumor cells.
- The horny pearls may become calcified.
- Usually, the general pattern of this tumor is of the follicular type with squamous metaplasia.

Plexiform Ameloblastoma

- In the plexiform pattern tumor epithelium is arranged as a network which is bound by a layer of cuboidal to columnar cells and includes cells resembling stellate reticulum.
- Cystic degeneration occurs but is usually due to stromal degeneration rather than due to a cystic change within the epithelium.
- The supporting connective tissue stroma is loosely arranged and vascular.



Loose basophilic myxomatous tissue with round to spindle-shaped fibroblast

Fig. 2.17: 40X

Key Points

- Locally aggressive neoplasm.
- Traditionally, the myxoma of the maxilla and mandible has been considered to be a neoplasm of odontogenic origin. Although the evidence is mainly circumstantial, support of an odontogenic origin has been perpetuated by:
 - a. It is almost exclusive occurrence in the tooth-bearing areas of the jaws.
 - b. Frequent occurrence in young individuals.
 - c. Common association with an unerupted tooth or a developmentally absent tooth.
 - d. Histologic resemblance to dental mesenchyme, especially the dental papilla.
 - e. The occasional presence of sparse amounts of odontogenic epithelium.
- The neoplasm's odontogenic derivation is believed to originate from the primitive mesenchymal portion of the developing tooth germ (dental follicle, dental papilla, and peri-odontal ligament) as an inductive effect of nests of odontogenic epithelium on mesenchymal tissue or as a direct myxomatous change of fibrous tissue in an odontogenic fibroma.
- Myxoma is common in the mandible, molar-premolar region.
- No sex predilection.
- Radiographically, the multilocular trabecular pattern has been described as 'honeycomb', 'soap bubble', 'tennis racket', 'wispy', and 'spider web' in appearance.

Histopathological Picture

- Histologically, the odontogenic myxoma is bland in appearance and is composed of loosely arranged, evenly dispersed spindle-shaped, rounded, and stellate cells with a lightly eosinophilic cytoplasm in a mucoid rich (myxoid), intercellular matrix.
- The myxoid matrix is rich in hyaluronic acid and chondroitin sulfate (hence stains more basophilic with H&E).
- Myxomas have a fine network of reticulin fibers, and some have low collagen content.
- Terms fibromyxoma and myxofibroma are used when myxomatous component is more or fibrous component is more respectively.

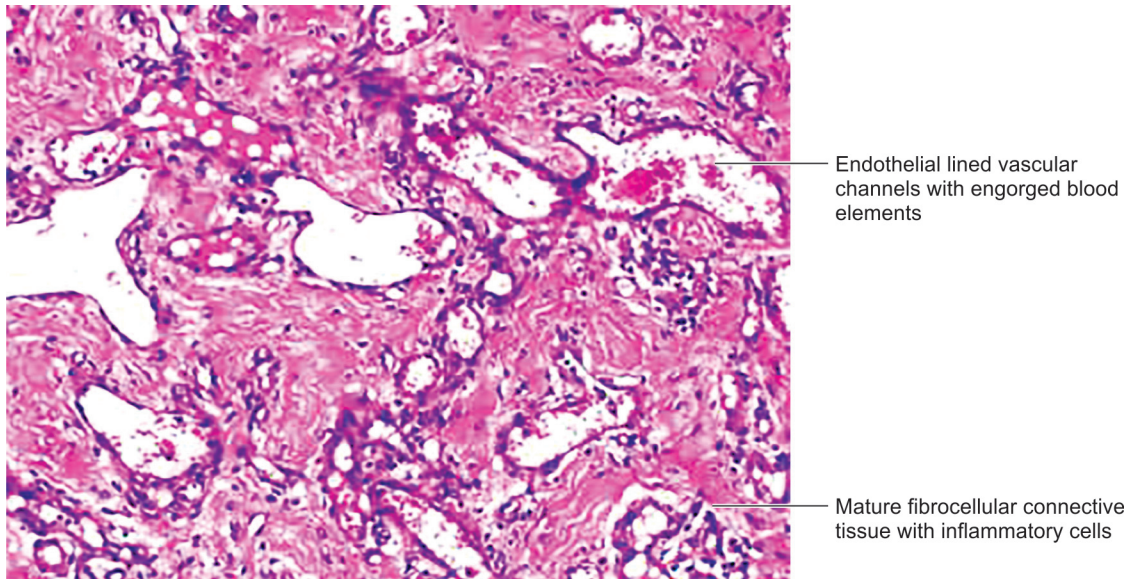


Fig. 3.6: 10X

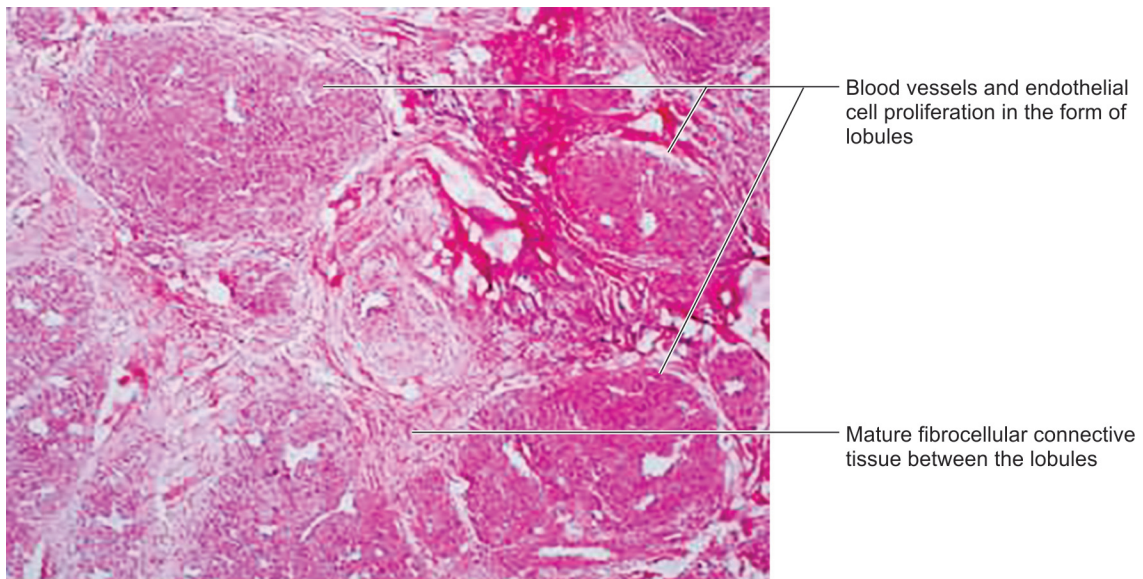


Fig. 3.7: 4X