Odontogenic cysts part 2

Lateral Periodontal Cyst

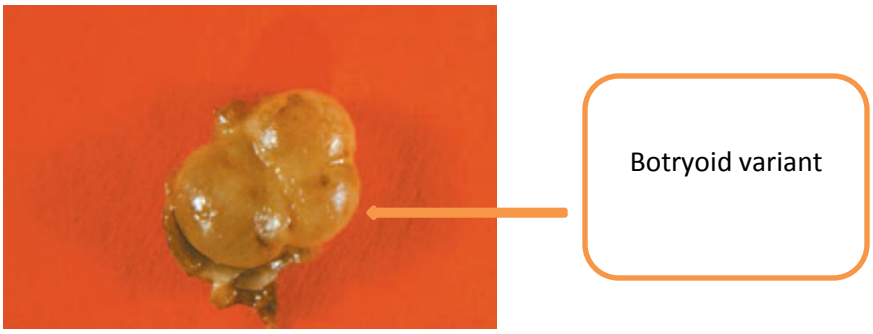
The lateral periodontal cyst is a non-keratinized developmental cyst occurring adjacent or lateral to the root of a tooth.

Etiology and Pathogenesis

The origin of this cyst is believed to be related to proliferation of rests of dental lamina.

Clinical Features

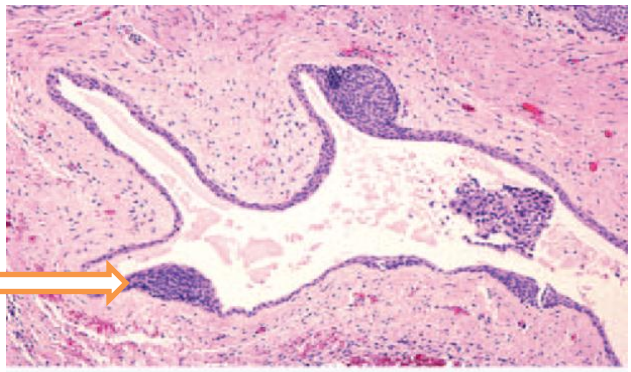
Most lateral periodontal cysts occur in the mandibular premolar and cuspid regions and occasionally in the incisor area. In the maxilla, lesions are noted primarily in the lateral incisor region. It presents as an asymptomatic, well-delineated, round or teardrop-shaped unilocular (and occasionally multilocular) radiolucency with an opaque margin along the lateral surface of a vital tooth root. Root divergence is rarely seen. The term botryoid odontogenic cyst is often used when the cyst is multilocular.



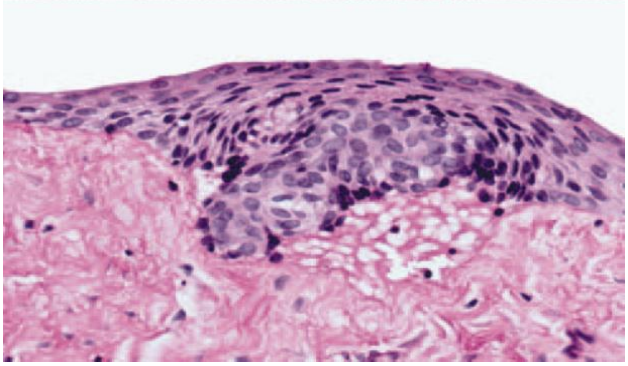
Histopathology

The cyst is lined by a thin, nonkeratinized epithelium. Clusters of glycogen-rich, clear epithelial cells may be noted in nodular thickenings of the cyst lining.

Focal nodular thickening in the epithelial lining of lateral periodontal cyst



Nodular thickening often shows swirling appearance



Differential Diagnosis

- lateral radicular cyst
- Odontogenic keratocyst along the lateral root surface
- radiolucent odontogenic tumors.

Treatment and Prognosis

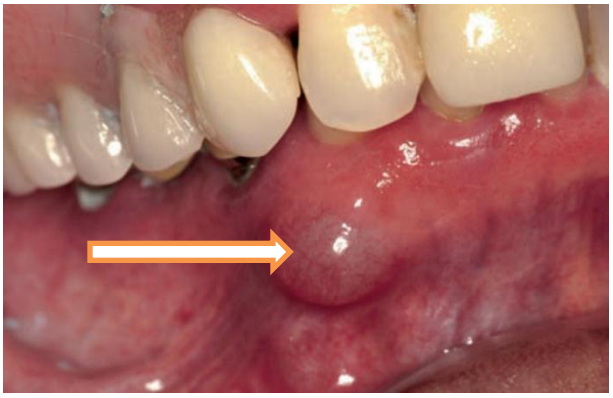
Local excision of lateral periodontal cysts is generally curative. The multilocular variant, botryoid odontogenic cyst seems to have increased recurrence potential. Follow-up is suggested for treated multilocular odontogenic cysts.

Gingival cyst of adult

Gingival cyst of adult is the soft tissue counterpart of lateral periodontal cyst (not bony cyst) which is histogenetically and pathologically similar to the lateral periodontal cyst.

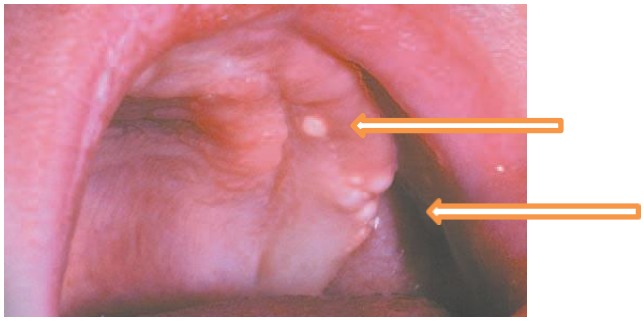
The cyst originates from the dental lamina remnants in soft tissue between the oral epithelium and the periosteum (rests of Serres).

Clinically, a gingival cyst appears as a small soft tissue swelling within or slightly inferior to the interdental papilla. It may assume a slightly bluish discoloration when it is relatively large. Most cysts are less than 1 cm in diameter. Radiography reveals no findings.

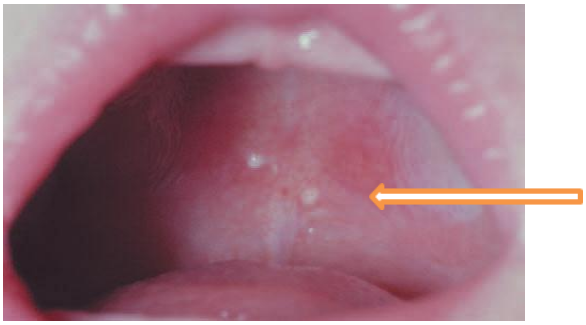


Gingival Cyst of the Newborn

Gingival cysts of the newborn (dental lamina cysts of the newborn, or Bohn's nodules). These cysts typically appear as multiple nodules along the alveolar ridge in neonates. It is believed that fragments of the dental lamina that remain within the alveolar ridge mucosa after tooth formation proliferate to form these small, keratinized cysts. These cysts are self-limiting and degenerate, and they involute or rupture into the oral cavity within a few weeks to a few months. Histologically, this cyst is lined by a bland stratified squamous epithelium. Treatment is not necessary because nearly all of these cysts involute spontaneously or rupture before the patients reach 3 months of age. Similar epithelial inclusion cysts may occur along the midline of the palate (palatine cysts of the newborn, or Epstein's pearls). These cysts are of developmental origin and are derived from epithelium that is trapped in the line of fusion between the palatine shelves. No treatment is necessary because they fuse with the overlying oral epithelium, discharge their contents, and resolve spontaneously.



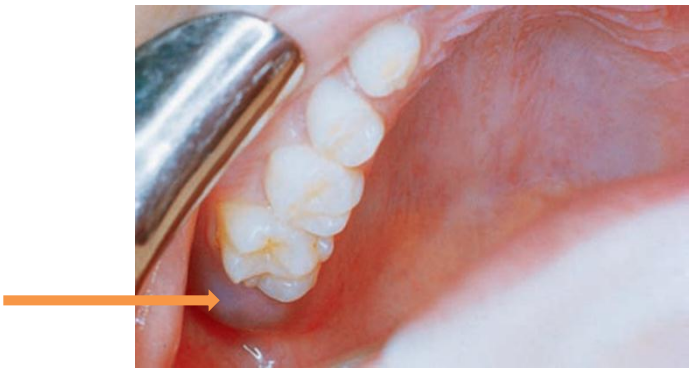
Gingival cyst of newborn



Epstein's pearls

Eruption Cyst

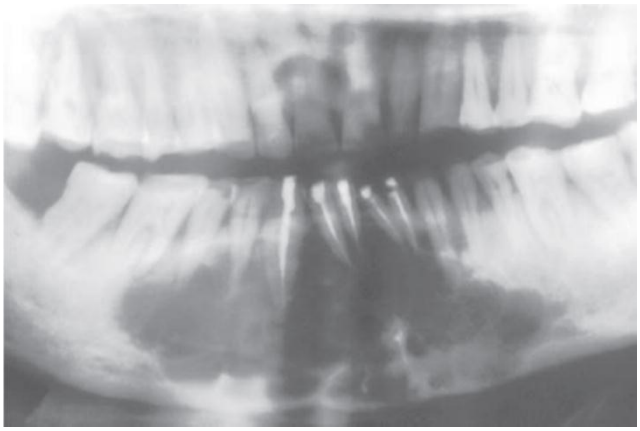
An eruption cyst results from fluid accumulation within the follicular space of an erupting tooth in which the epithelial lining of this space is simply reduced enamel epithelium. With trauma, blood may appear within the tissue space, forming an eruption hematoma. No treatment is needed because the tooth erupts through the lesion. Subsequent to eruption, the cyst disappears spontaneously without complication.



Glandular odontogenic cyst

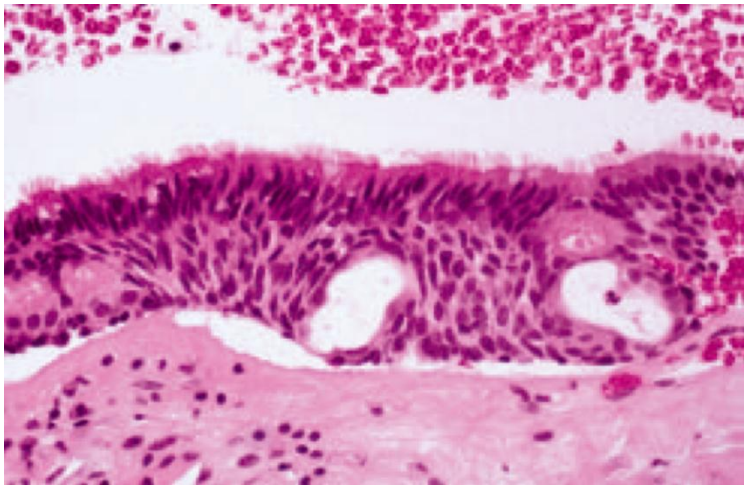
Glandular odontogenic cyst is a rare type of developmental odontogenic cyst that can show aggressive behavior. Although it is generally accepted as being of odontogenic origin, it also shows glandular or salivary features that presumably are an indication of the pluripotentiality of odontogenic epithelium. The cyst shows predilection to the anterior region of the jaws, and many mandibular lesions will cross the midline. Small cysts may

be asymptomatic; however, large cysts often produce clinical expansion, which sometimes can be associated with pain or paresthesia. Radiographically, the lesion presents as either a unilocular or multilocular radiolucency. The margins of the radiolucency are usually well defined with a sclerotic rim.



histopathological features:

The glandular odontogenic cyst is lined by squamous epithelium of varying thickness. The interface between the epithelium and the fibrous connective tissue wall is generally flat. The fibrous cyst wall is usually devoid of any inflammatory cell infiltrate. The superficial epithelial cells that line the cyst cavity tend to be cuboidal to columnar, resulting in an uneven hobnail and sometimes papillary surface. Occasionally, cilia may be noted. Pools of mucinous material are often present within the epithelium. Cuboidal cells usually line these pools. Mucous cells may or may not be present within the epithelium. In focal areas, the epithelial lining cells may form spherical nodules, similar to those seen in lateral periodontal cysts.



Treatment and prognosis:

Most cases of glandular odontogenic cyst have been treated by enucleation or curettage. However, this cyst shows a propensity for recurrence, which is observed in approximately 30% of all cases.

Calcifying Odontogenic Cyst (Calcifying Cystic Odontogenic Tumor)

Calcifying odontogenic cysts (COCs) are developmental odontogenic lesions that occasionally exhibit recurrence. Similar to the odontogenic keratocyst the term calcifying cystic odontogenic tumor has been proposed for this lesion to reflect its dual cystic and benign neoplastic nature. A solid variant known as odontogenic ghost cell tumor is believed to potentially exhibit more aggressive clinical behavior.

Clinical Features

A wide age range has been reported for this cyst, with a peak incidence in the second decade. It usually appears in individuals younger than 40 years of age and has a decided predilection for females. More than 70% of COCs are seen in the maxilla. Rarely, COCs may present as localized extraosseous masses involving the gingiva. Those presenting in

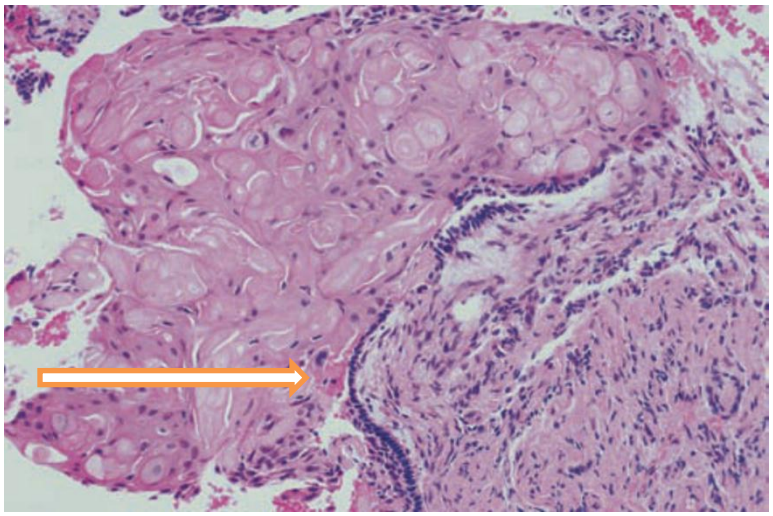
an extraosseous or peripheral location are usually noted in individuals older than 50 years of age and are found anterior to the first molar region.

Radiographically, COCs may present as unilocular or multilocular radiolucencies with discrete, well-demarcated margins. Within the radiolucency may be scattered, irregularly sized calcifications. Such opacities may produce a salt-and-pepper type of pattern, with an equal and diffuse distribution. In some cases, mineralization may develop to such an extent that the radiographic margins of the lesion are difficult to determine.

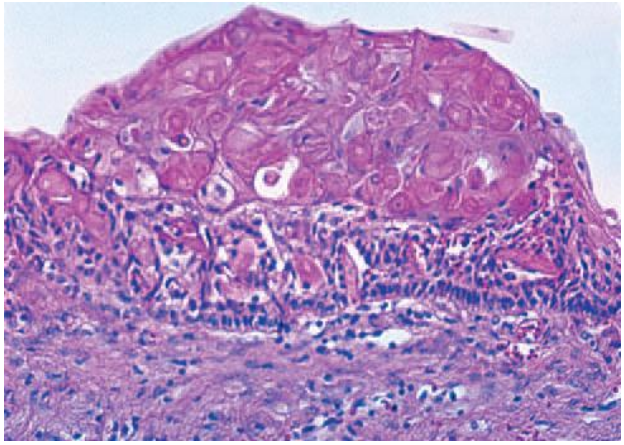
Histopathology

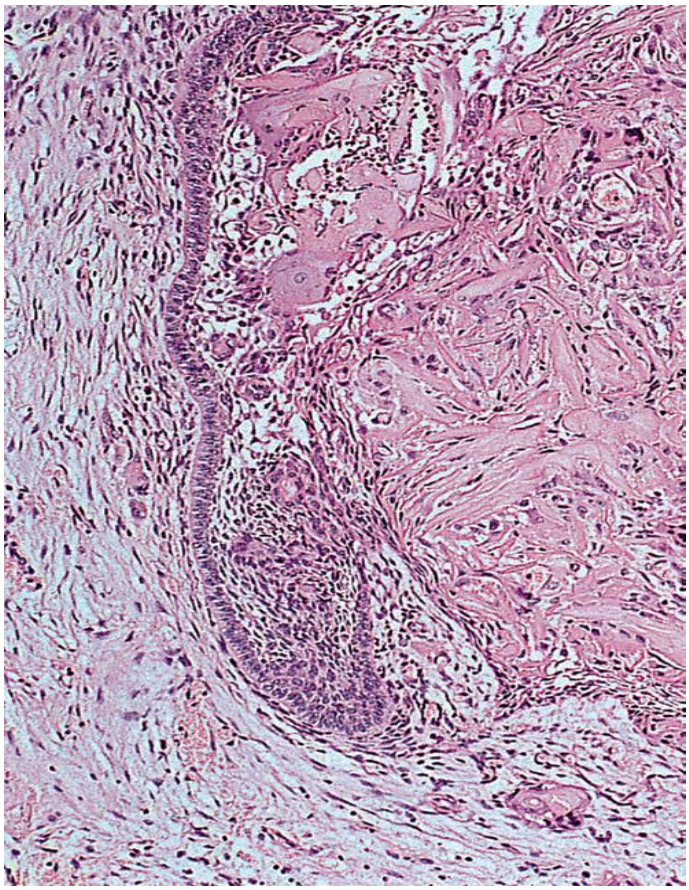
Most COCs present as well-delineated cystic proliferations with a fibrous connective tissue wall lined by odontogenic epithelium. Intraluminal epithelial proliferation may obscure the cyst lumen (producing the impression of a solid tumor). The epithelial lining is of variable thickness. The basal epithelium may be prominent focally, with hyperchromatic nuclei and a cuboidal to columnar pattern. Above the basal layer are more loosely arranged epithelial cells, sometimes resembling the stellate reticulum of the enamel organ. The most prominent and unique microscopic feature is the presence of so-called ghost cell

keratinization. Ghost cells are anucleate and retain the outline of the cell membrane. These cells undergo dystrophic mineralization characterized by fine basophilic granularity, which may eventually result in large sheets of calcified material. Multiple daughter cysts may be present within the fibrous wall. occasionally, ghost cells may become displaced in the connective tissue wall, eliciting a foreign body giant cell response.



Calcifying odontogenic cyst showing keratinized epithelial cells (ghost cells) filling the lumen





Areas of an eosinophilic matrix material that are considered by some authors to represent dysplastic dentin (dentinoid) also may be present adjacent to the epithelial component. This is believed to be the result of an inductive effect by the odontogenic epithelium on the adjacent mesenchymal tissue

Treatment and Prognosis

Because of the unpredictable biological behavior of this lesion, treatment is usually more aggressive than simple curettage. Patients should be monitored following treatment because recurrences are not uncommon. Management of the extraosseous or peripheral variant is conservative because recurrence is not characteristic.