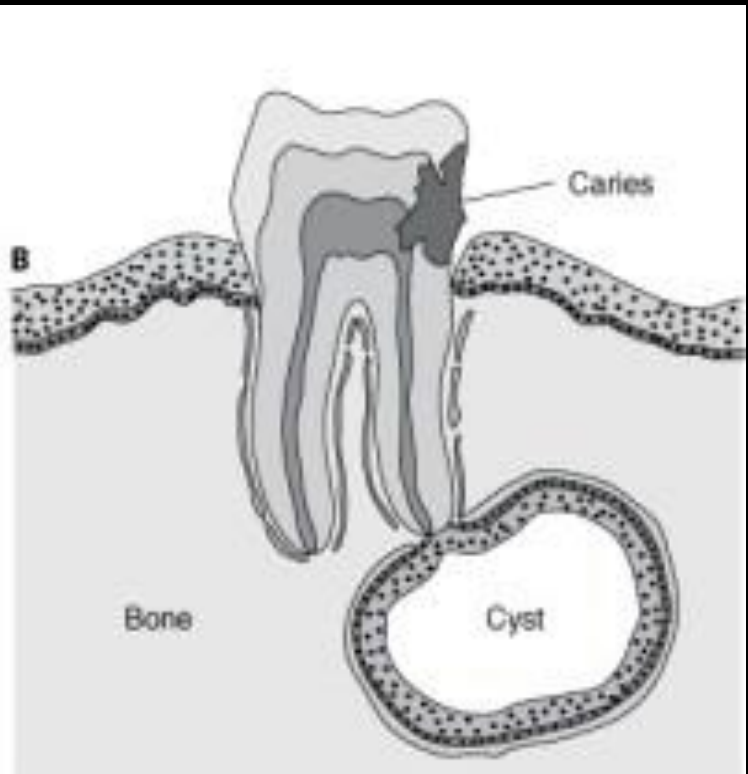
Cysts of the oral region

Cyst

It is a pathological cavity lined by epithelium containing fluid or semi- fluid material (cellular derbies, keratin or mucous).



True cyst

1- Central matrix (lumen).

2- Epith lining is stratified squamous (columnar).

3- Capsule is C.T with Blood vessels & fibroblast.

Pseudo cyst

cystic cavity without epith lining

ex :-Traumatic bone cyst, Aneurysmal bone cyst.

**Cyst of oral region mainly true, it is either odontogenic (90%), or non –odontogenic (developmental).

-Odontogenic cyst

Cyst with lining derived from epith produced during tooth development .

Histogenic classification of odonto.cysts:

1- Rest of malassez:- (P.A.C, residual cyst)

2- Reduced enamel epith:- (dentigerous & eruption cyst)

3- Rest of dental lamina (rest of serres) :- (odontogenic keratocyst, lateral periodontal cyst, gingival cyst)

-Cysts are common lesions & clinically important, because they are destructive.

-They produce sign& symptoms, especially when they are become enlarged or infected.

Classification of jaw cyst

I-Epithelial cyst (true cyst)

A- Odontogenic cyst

1- Developmental

- Odontogenic keratocyst
- Dentigerous cyst (follicular cyst)
- Eruption cyst
- Lateral periodontal cyst
- Gingival cyst
- Glandular odontoginic cyst.

2- Inflammatory

1- Radicular cyst (dental cyst)

a- Apical b- lateral c-residual

2- Paradental cyst

B-Non odontogenic cyst (developmental)

1- Nasopalaline duct (incisive canal) cyst.
2- Nasolabial (nasoalveolar) cyst.
3- Median cyst.
4- Globulomaxillary cyst.

II-Non – epithelial primary bone cyst (pseudocyst)

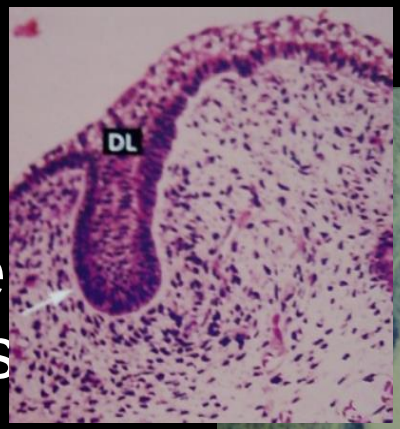
1- Solitary bone cyst (simple ,traumatic, hemorrhagic)

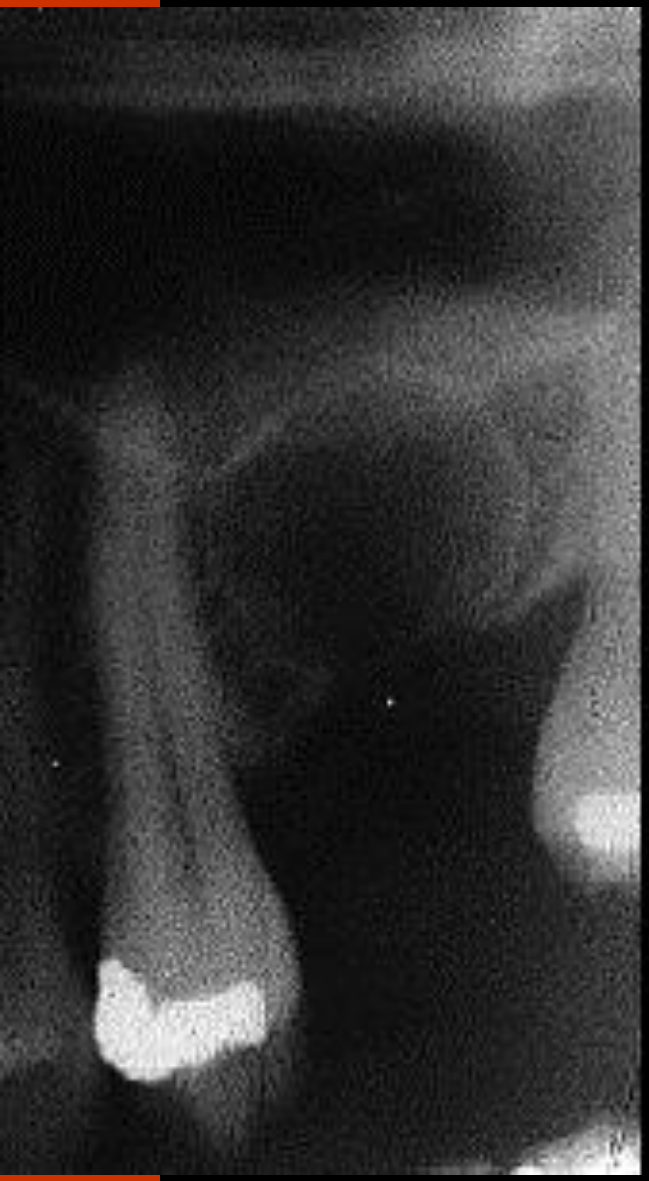
2- Aneurysmal bone cyst

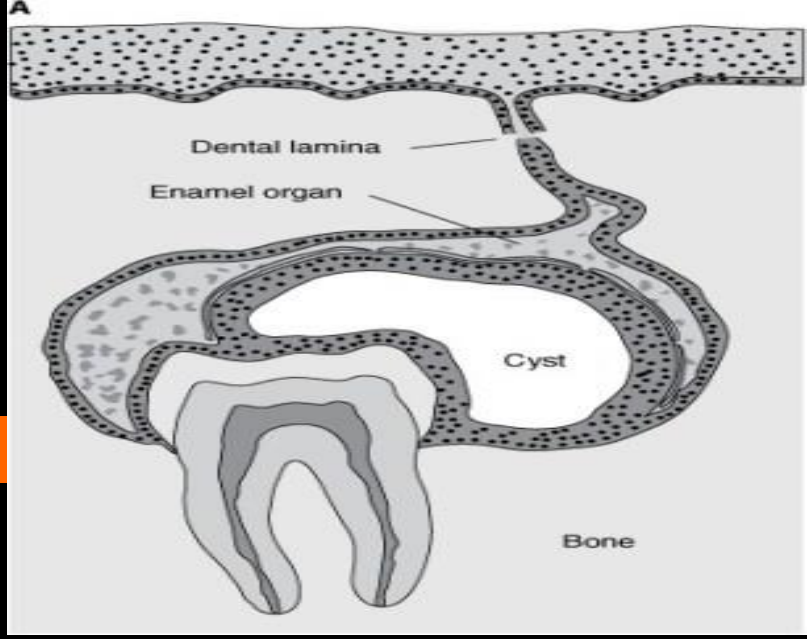
3- Stafne's idiopathic bone cyst.

Odontogenesis

- Projections of dental lamina into ectomesenchyme
- Layered cap (inner/outer enamel epithelium, stratum intermedium, stellate reticulum)
- Odontoblasts secrete dentin → ameloblasts (from IEE) → enamel
- Cementoblasts → cementum
- Fibroblasts → periodontal membrane







A- Odontogenic cyst

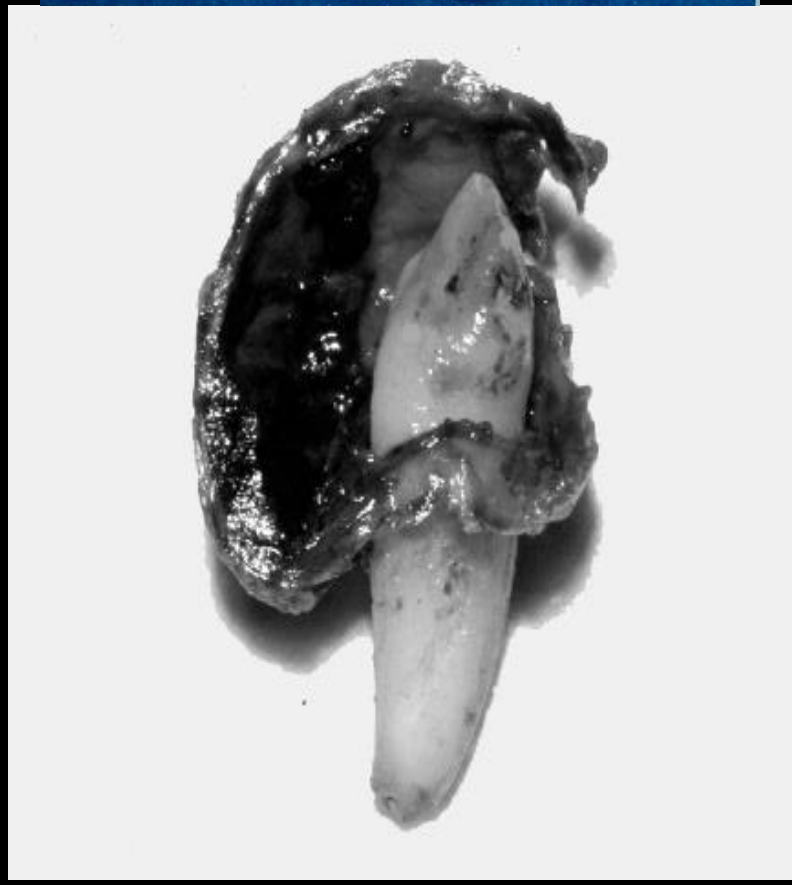
1- Dentigerous cyst (Follicular cyst)

-Odontogenic cyst surrounds the crown of an unerupted tooth. It is attached to CEJ (cervical margin).

-Caused by fluid accumulation between reduced enamel epithelium & the enamel surface (crown of unerupted tooth) ,resulting in a cyst in which the crown located within the lumen and roots outside.

Clinically :

-Asymptomatic, but if it is enlarged or infected producing some swelling or pain.
-Associated with unerupted mandibular 3rd molar, maxillary canine, maxillary 3rd molar, mandibular premolars (in decreasing frequency)
-The arch appear clinically be missed at least one tooth.



Radiographically :

- Well circumscrbed radiolucency surrounding the crown of unerupted tooth.
- The RL has a well-defind & scleroting border.

- Dentegerous cyst may displace associated tooth to a conciderable distance.
- Root resorption of adjacent erupting teeth can occur.

Cyst crown relationship show several radiographic relation:

1- Central relation
2- Lateral relation
3- Circumferential relation

RADIOLOGICAL FEATURES:

- CENTRAL TYPE:

- LATERAL TYPE :

- CIRCUMFERENTIAL TYPE :

Histopathology :-

- **Cyst lining** :-uniform layer of non –keratinized stratified squamons epithelinm **(4-6)** cells in thickness, atrophic or ulcerated if inflammed.

- **Cyst wall** :- composed of dense fibrous C.T., free from inflammatory cells unless secondary infected.

- **Cyst content** :-proteinaceous, yellow fluid & cholesterol crystals.

Long standing dentigerors cyst occasionally exihibit areas of keratinization or premalignant changes of their epithelial lining with mucous cell metaplasia , which produce mucine .

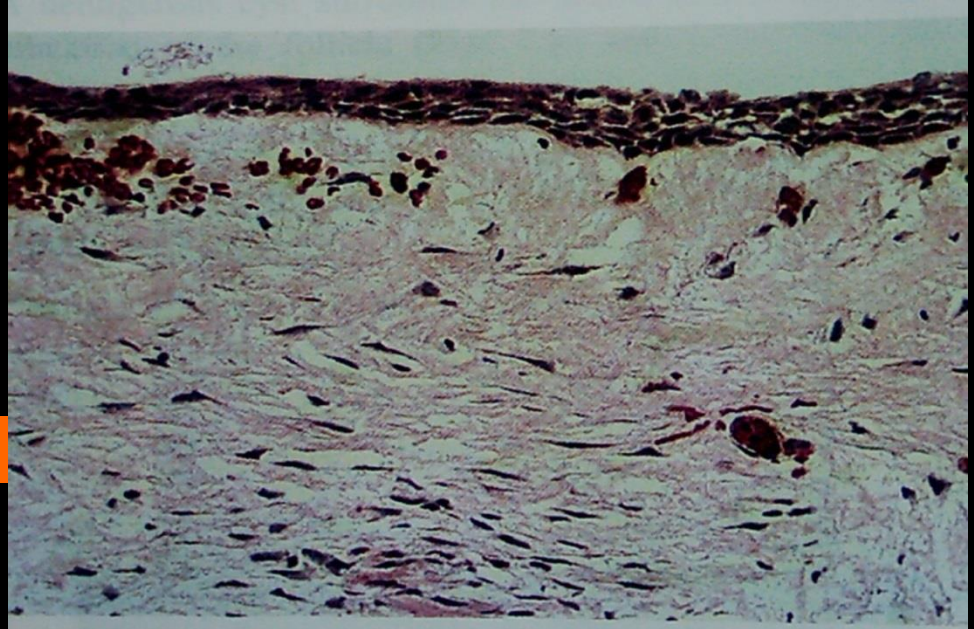
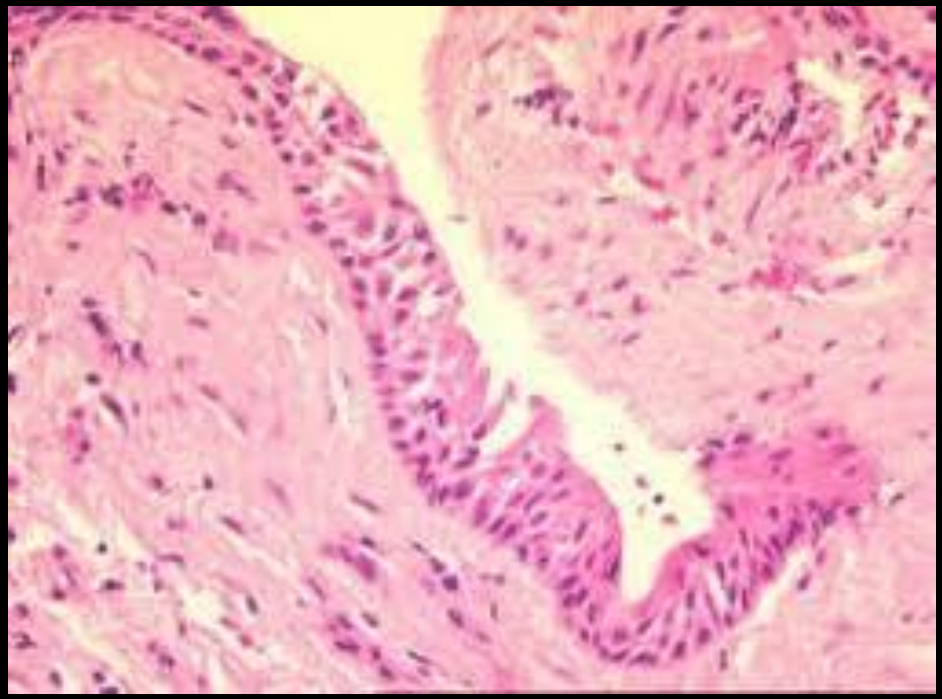
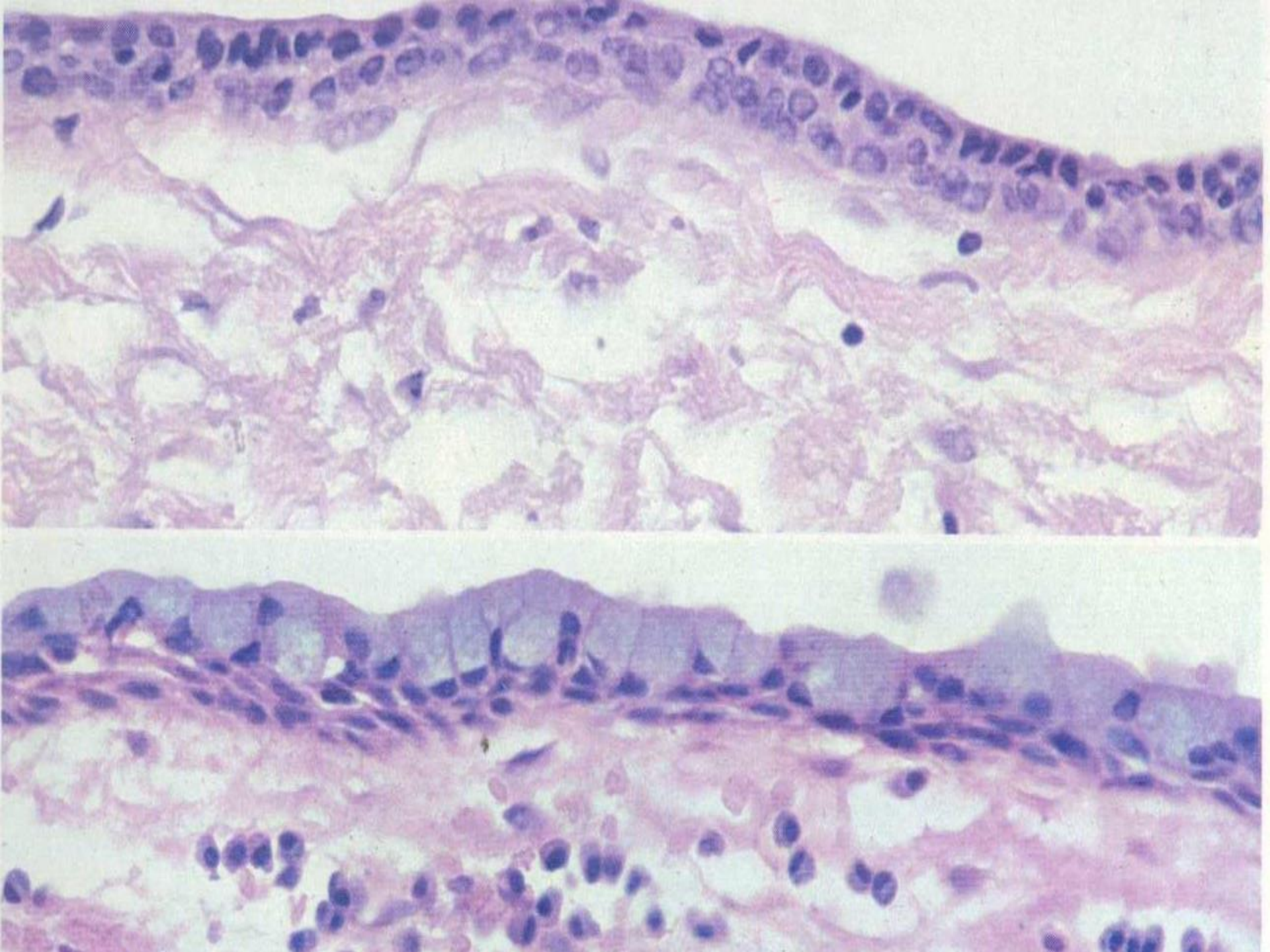


Fig. 7.21 Dentigerous cyst. In this uncomplicated cyst there is no





Dentigerous cyst. The cyst surrounds the crown of th

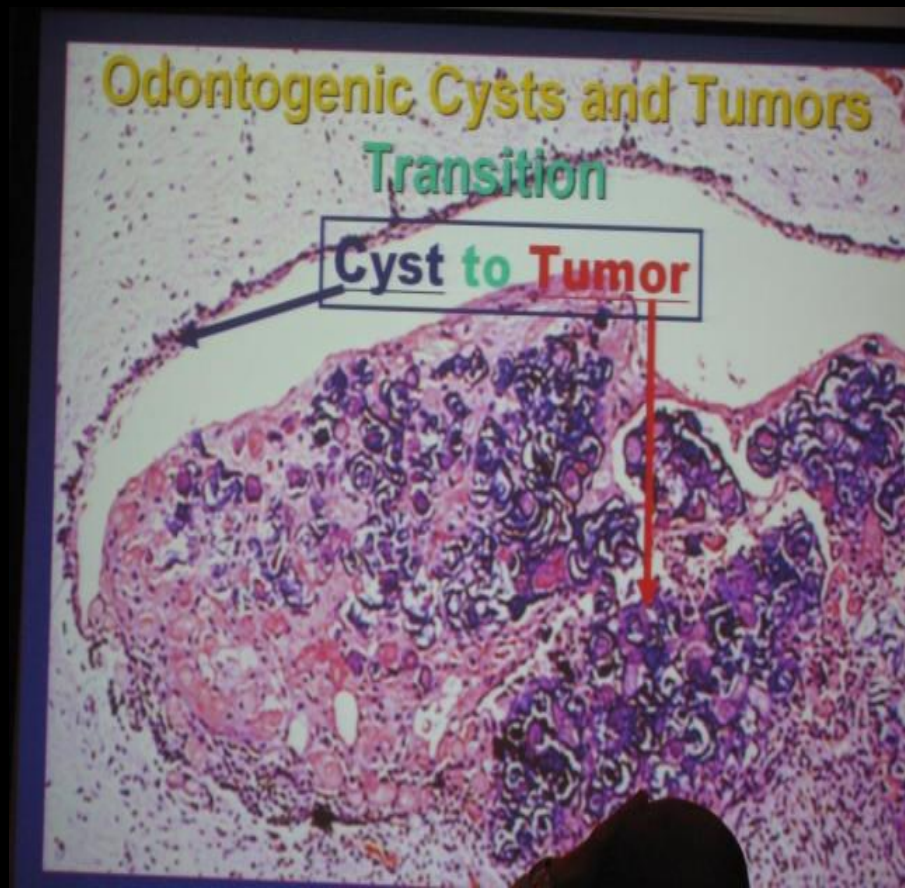
Treatment and prognosis :-

Surgical enucleation with removal of the associated tooth.

Post surgical recurrence uncommon ,Good prognosis.

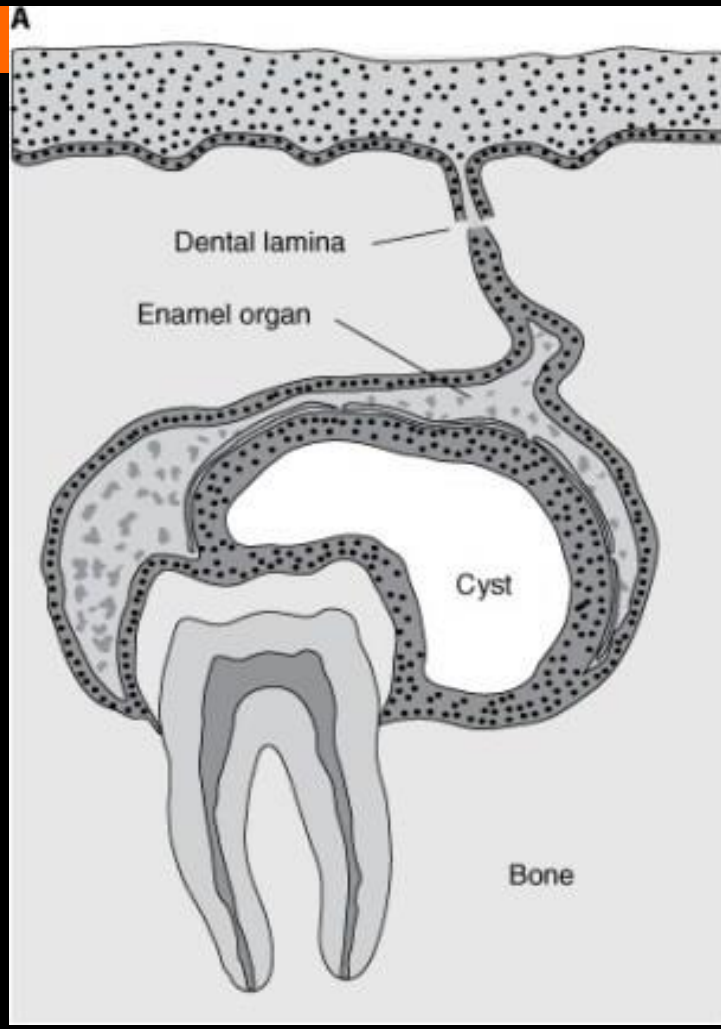
Infrequently ,

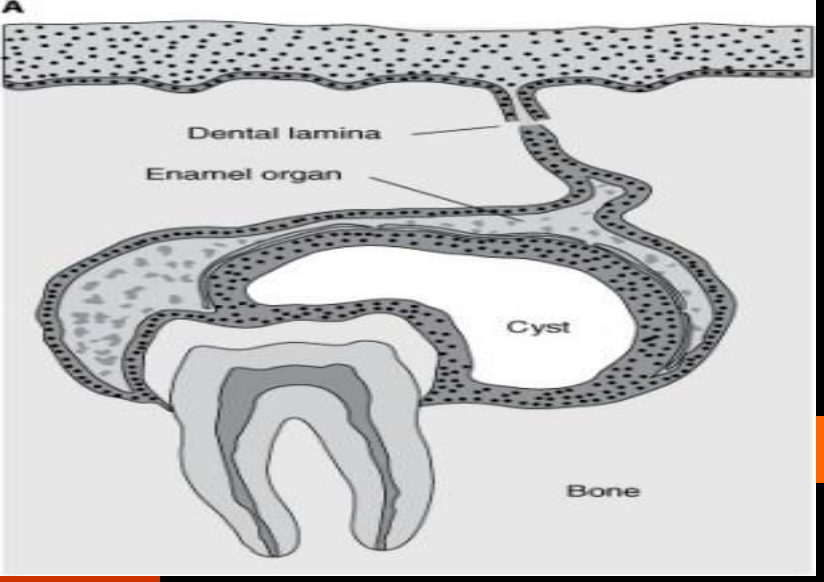
epithelial neoplasm such as ameloblastoma, squamos cell carcinoma , mucoepedermoid carcinomacan arise in dentigerous cyst.



Mechanism of cyst formationis unkown.

1- Compression of the follicle by a potentially erupting, but impacted tooth obstruct the venous outflow which lead to increase the venous pressure inside the follicle, leading to increased transudation of fluid. Pooling of this transudate will increase hydrostatic pressure resulting in separation of the follicle from the crown leading to cyst formation.





2-Proliferation of outer layer of R.E.E followed by breakdown of the cell within the epithelial island,.leading to cyst formation

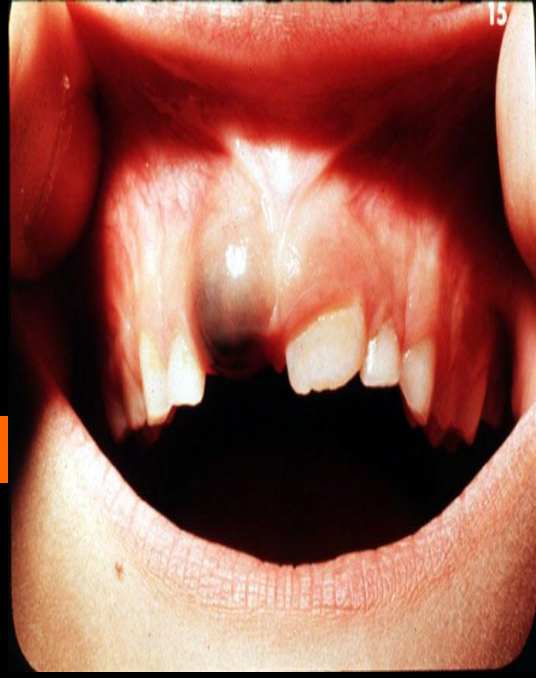
(cystic degeneration of stellale reticulam).

-**Dentigerous cyst formed at CEJ because it related to R.E.E which end at the CEJ.**

2-Eruption cyst

- **Odontogenic cyst with histological feature of dentigeiorus cyst.**
- **It surround a tooth crown that has erupted through bone, but not the soft tissue..**

The eruption cyst is the soft tissue analogue of the follicular cyst



- **Clinically :-**

- Appear as soft fluctuant translucent swelling of the alveolar ridge.
- May involve both deciduous and permanent teeth.
- Mastication may induce hemorrhage in this cyst which termed as ‘’ **Eruption hematoma** ".
- No need for treatment because they spontaneously rupture and become exteriorized as a result of normal mastication, otherwise surgical exposure of the crown to allow eruption

Histologically :-

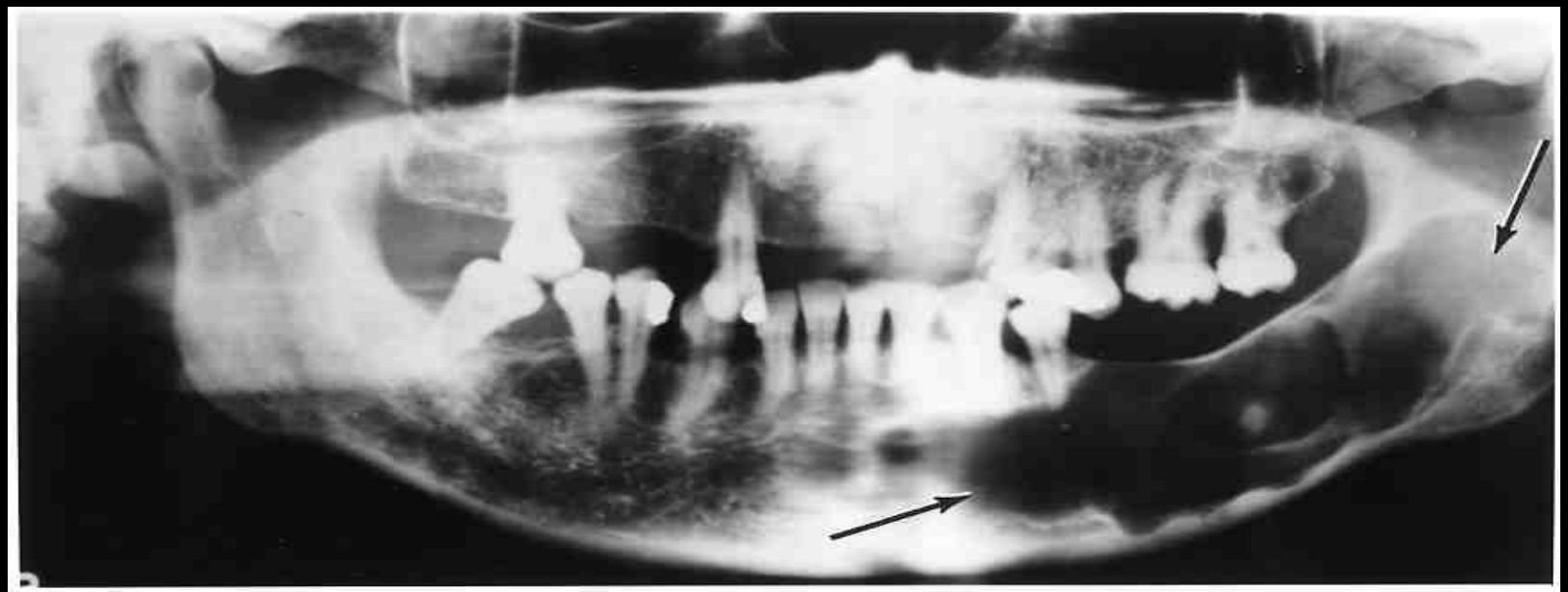
Same as dentigerous cyst.

3- Odontogenic keratocyst (OKC)

- Cyst derived from remnant (rest) of dental lamina with a biologic behavior similar to a benign neoplasm.
- Develop at any site in the jaw, 2/3 of the cases occuring in mandible (in posterior body & ramus).
- OKC possess a remarkable growth potential (greater than other odontogenic cyst) so it can attain a larger size resulting in massive bone destructon.
- OKC exhibit a recurrenc rate of **10-30%** similar to a neoplasm **(ameloblastoma)** , by this it differs from other odontogenic cyst.

- OKC enlarge in an anteroposterior direction & reaching a larger size without causing gross bony expansion ,which accidentally discovered by x-ray examination **, (unlike radicular and dentigerous cyst which expand in a unicentric ballooning pattern, so producing bone expansion).**

- Most OKC present as a single lesion , may occur as a multiple cysts that some time, occupy all the four quadrants of the jaw.



- **Multiple OKC are a consistent features of Nevoid Basal cell carcinoma syndrome (= Gorlin syndrome)**

Manifestation of Gorlin syndroms:-

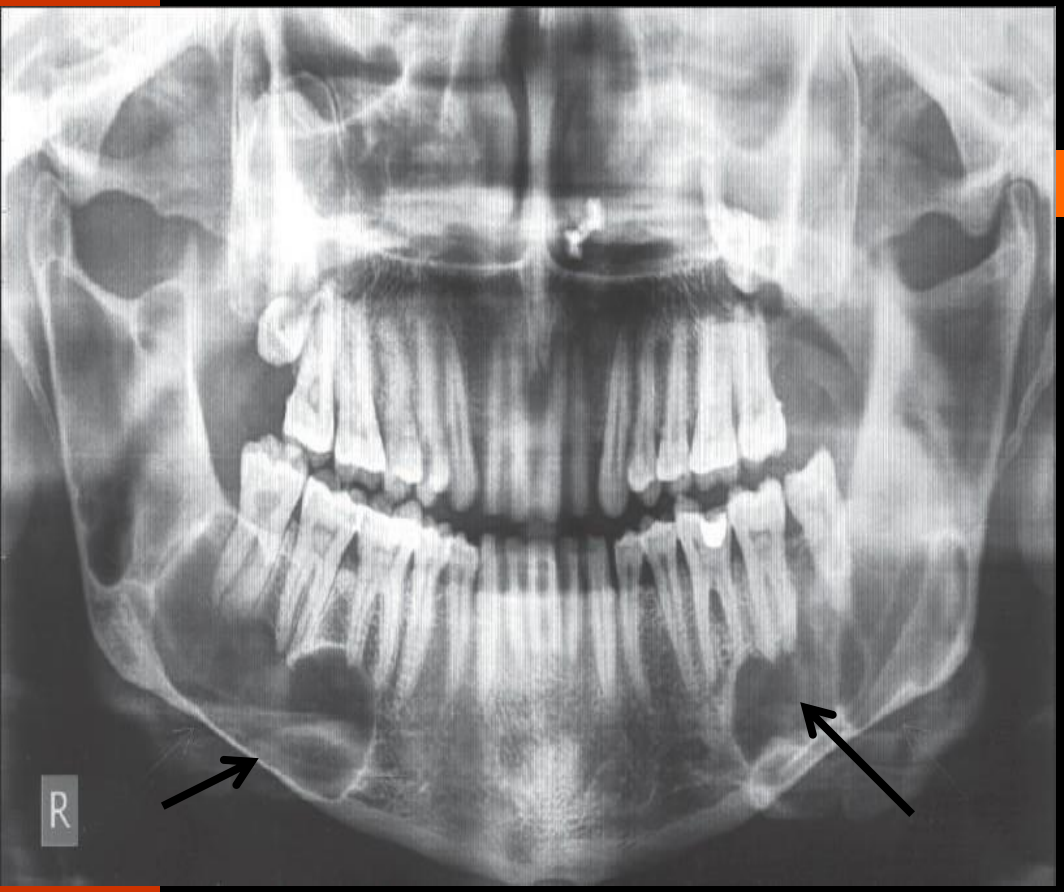
1- Oral---- manifestation as multiple OKC of the jaws.

2- Skin---- manifestation as multiple Basal cell carcinoma of skin (of any site).

3- Skeletal ---- manifestation as rib anomalies (bifid rib), vertebral deformity.

4- CNS---- manifestation as calcified falx cerebri, brain tumors.

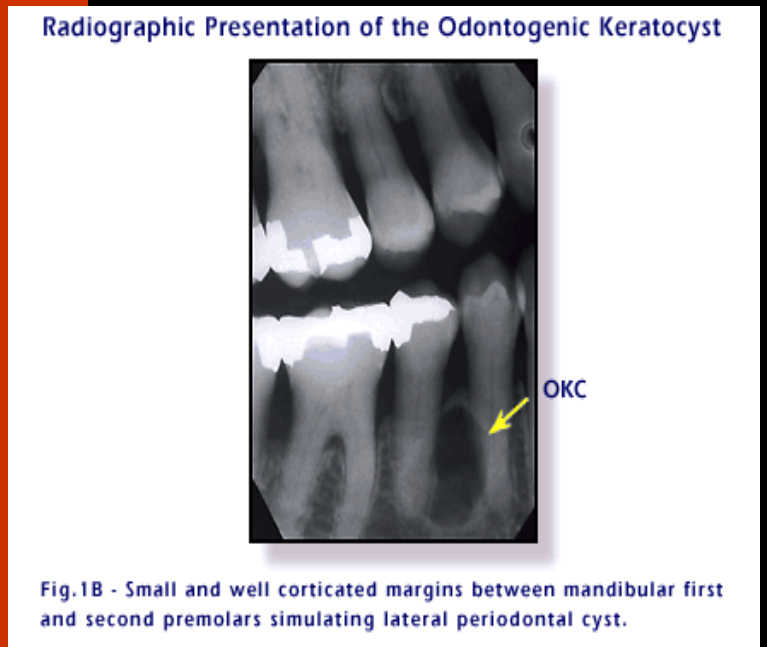
- An important clinical feature of OKC is the tendency to recurrence after surgery.

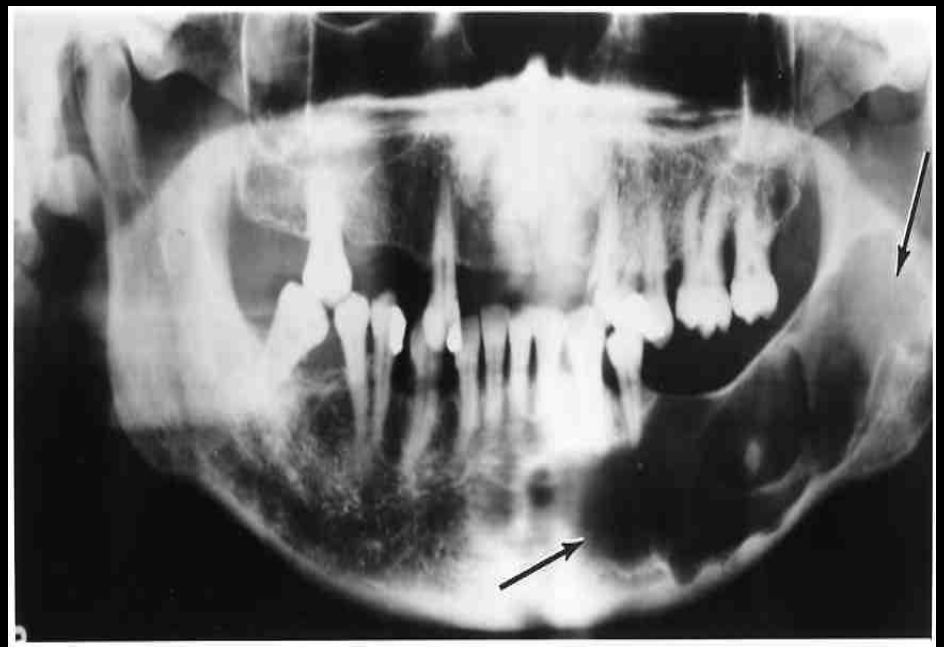

R

Radiographically :-

well- defined solitary lesion (unilocular) or polycystic (multilocular) radiolucency with smooth or scalloped margins.

Many of O KC noted adjacent to the crown of an unerupted tooth.





Histopathology :-

It's histological appearance is distinctive &diagnostic :-

1- Thin, uniform lining of parakeratinized squamous epithelium of **6—10** cells in thickness.

2- Corrugated layer of parakeratin on the luminal surface.

3- Lack of retepeg formation.

4- Focal separation of epithetium lining from C.T wall ,which is usually loose, thin & friable.

5- Lumen contain variable amount of desquamated parakeratin.

6- Remnant of dental lamina & microcyst **"daughter"** cyst may be present in a capsule wall.

7- Palisading of columinar or cuboidal basal cell layer

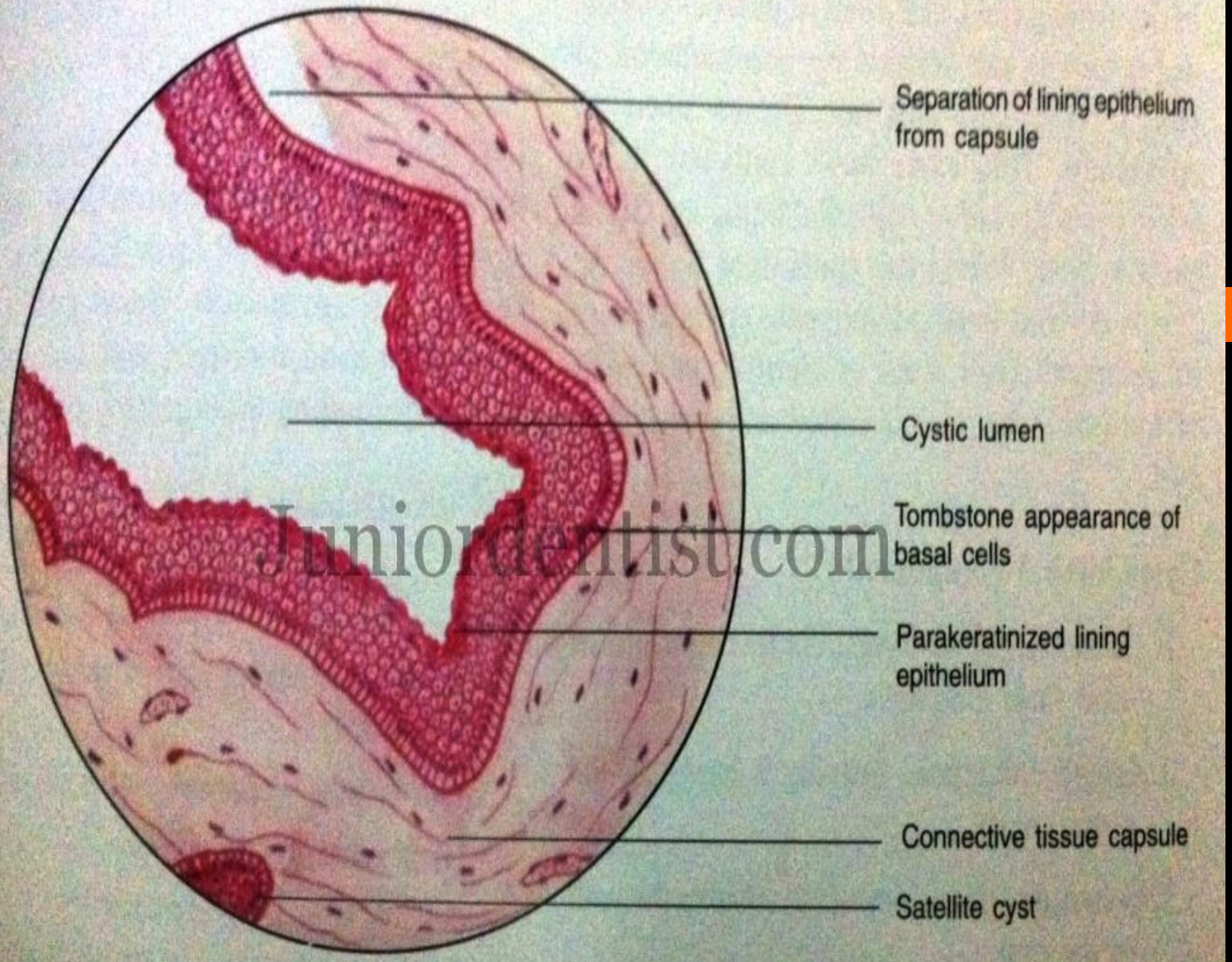
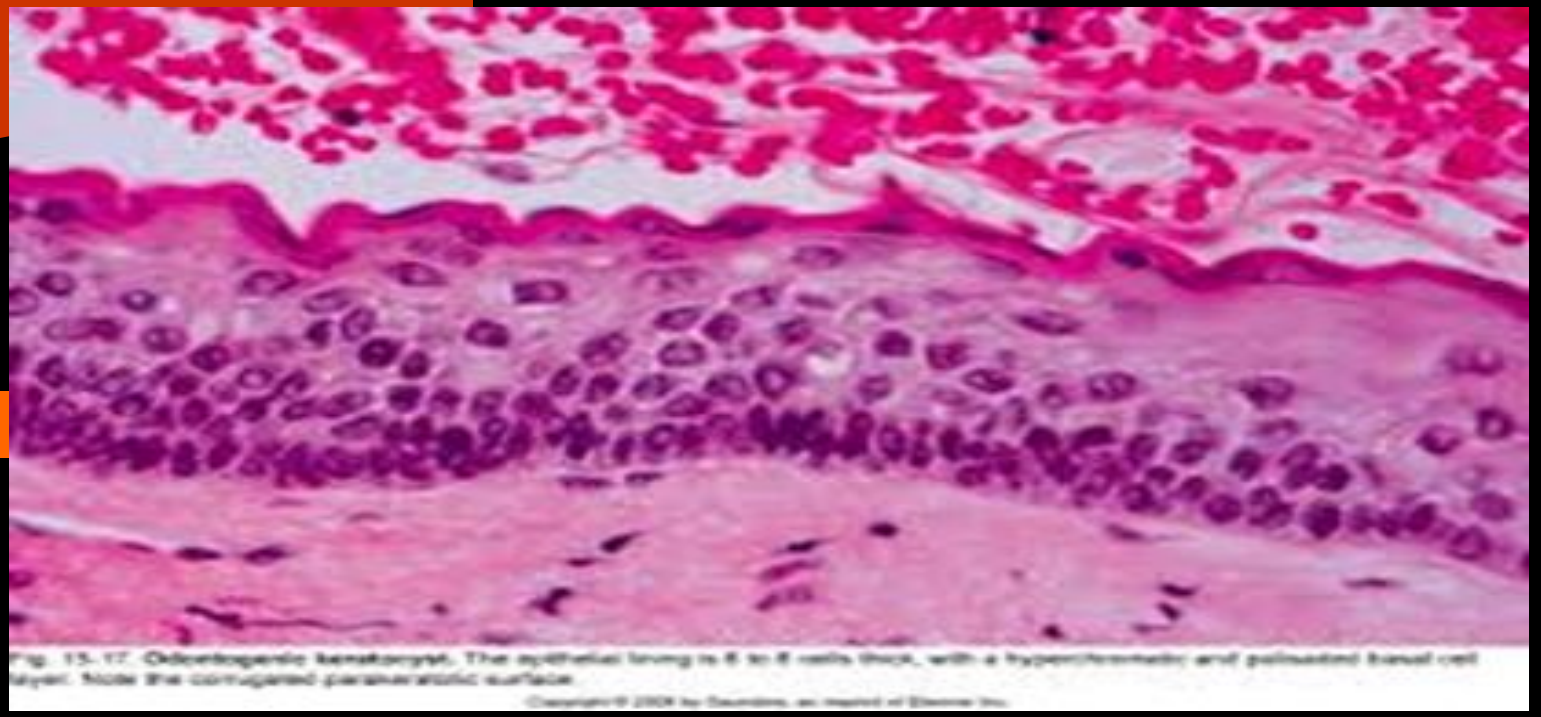


Fig. 12.1 Odontogenic keratocyst



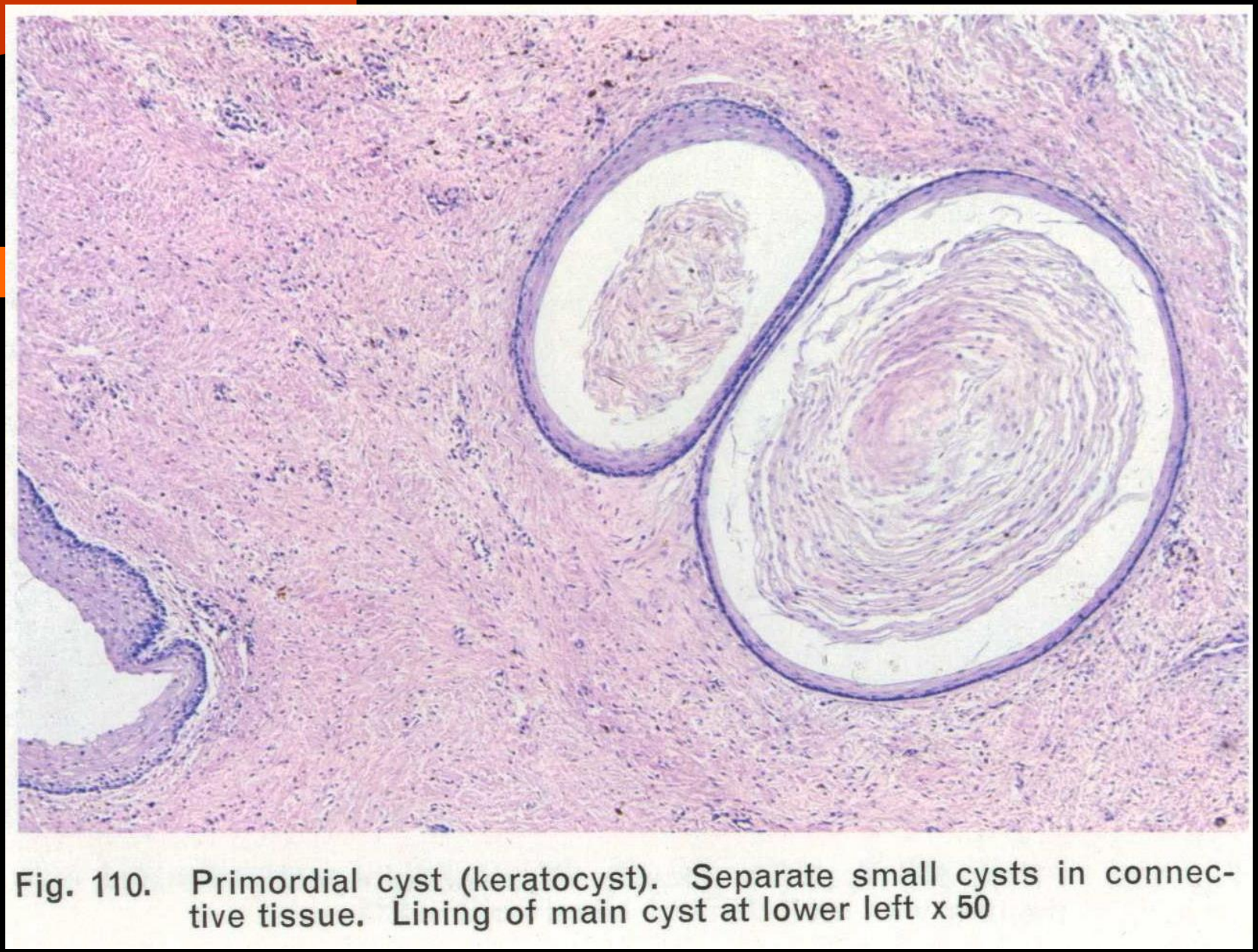


Fig. 110. Primordial cyst (keratocyst). Separate small cysts in connective tissue. Lining of main cyst at lower left x 50

- **Treatment :-**

Surgical enucleation, in sever cases surgical resection .

High rate of recurrence.

In Large cyst; Marsupilization, followed by enucleation, may be an attractive alternative.

CLINICAL FEATURES

AGE : 5^{th} – 6^{th} decade of life

SITE : mandibular canine and Pre Molar area; attached gingiva or I/D papilla

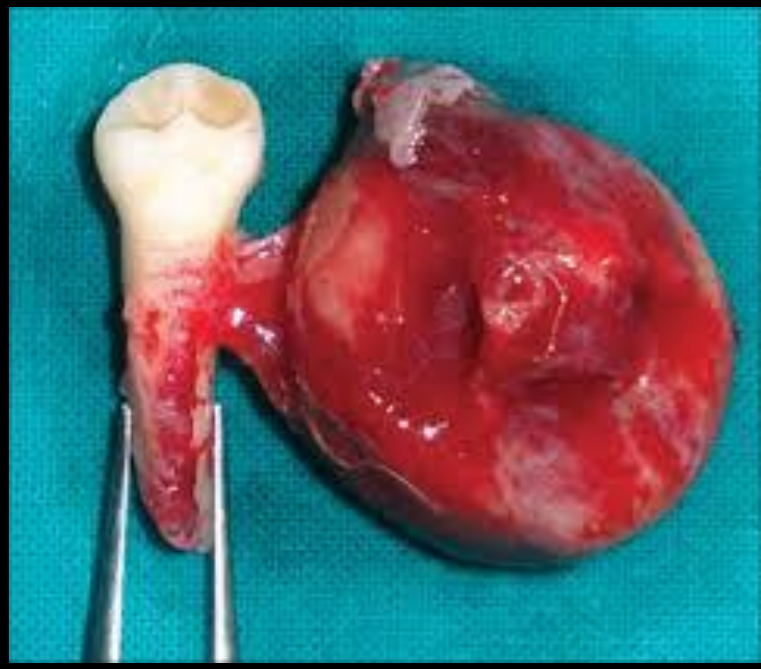
GENDER: male predominance

Clinical photograph of a gingival cyst of an adult

4- Lateral periodontal cyst

- Uncommon (intraosseous), sharing gingival cyst of the adult in it's clinical and histopathologic features.

-Derived from dental lamina, mainly in mandibular canine/premolar area .



Radiographically :-

Small, well circumscribed round or teardrope- shaped unilocular radiolucency located laterally to roots of vital teeth. Less than 1cm in diameter.

Radiograph of a lateral periodontal cyst lying between the mandibular premolar teeth. The margins are well corticated, indicative of slow enlargement.

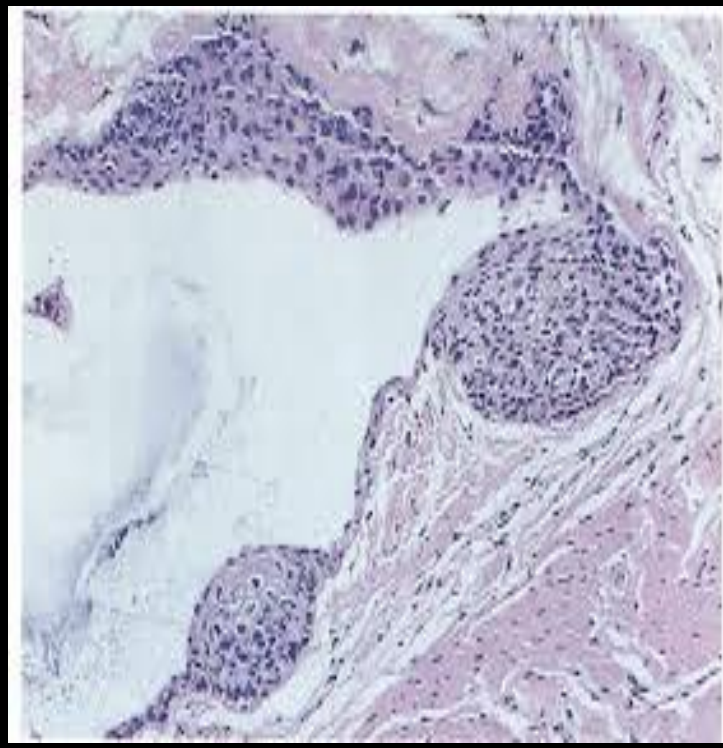
Sometime this cyst appear as

multilocular or polycystic **"botryoid odontogenic cyst"**

this represent simultaneous cyst changes in multiple adjacent rest of dental lamina.

- **Histopathology** :-

- Thin lining of non –keratinized squamous epithelium, with variable number of glycogen rich clear cells.
- Some cyst exhibit focal epithelium thickening (in lining).



- **Treatment** :- Enucleation

uncommon recurrence.

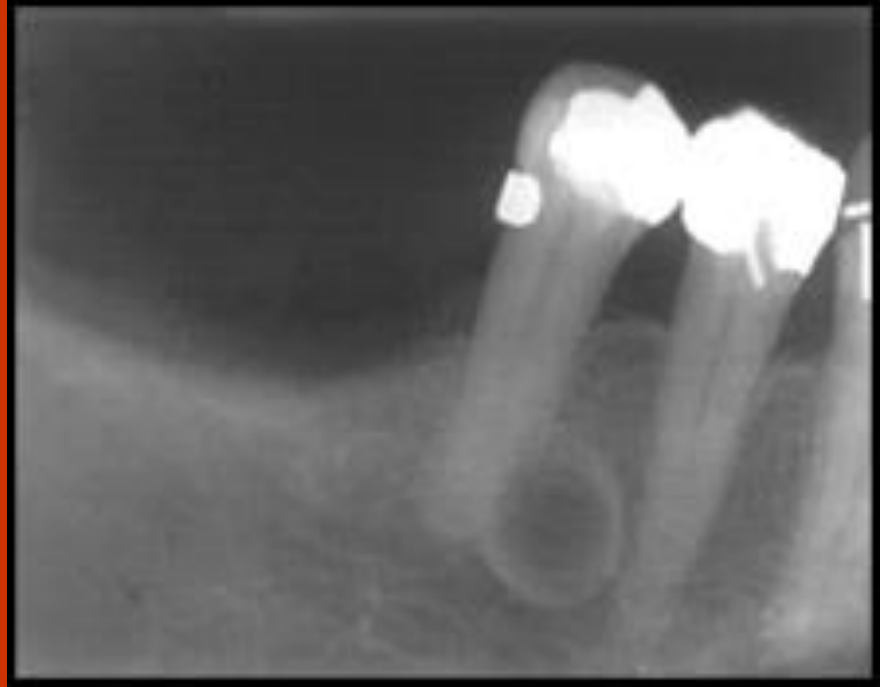
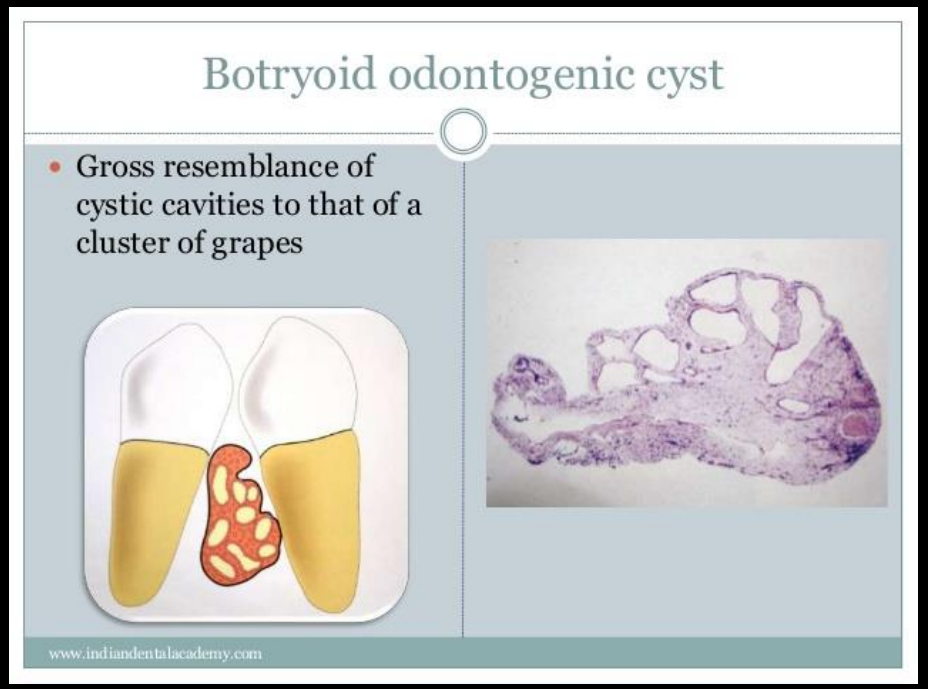


Fig. 5.2 Lateral keratocyst: section shows a cyst arising at the side of a
tooth as occasionally happens.



(botryoid odont cyst)

5- Gingival cyst of adult

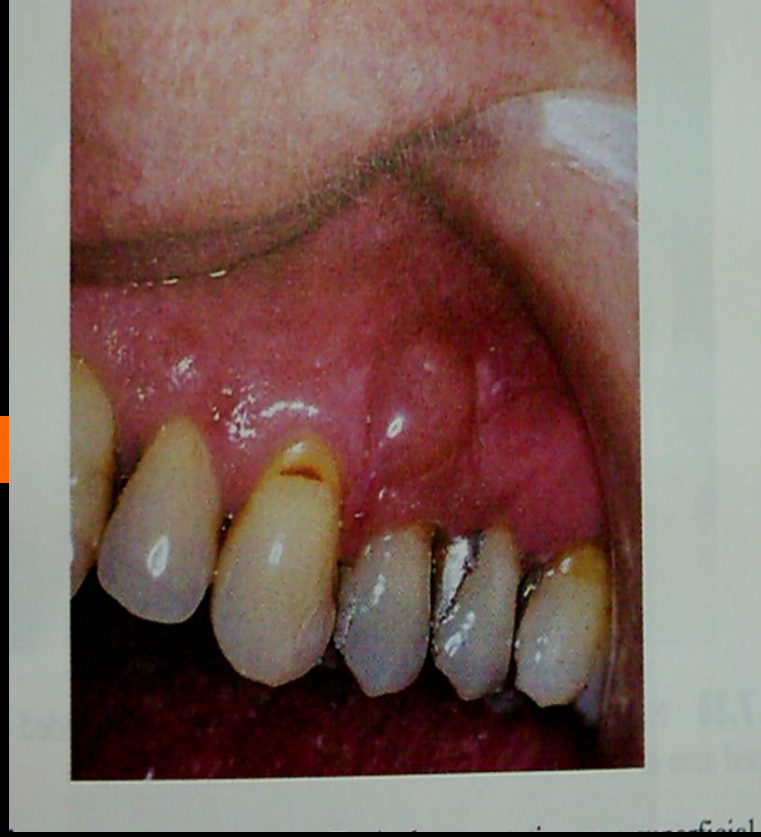
- Small cyst of gingival soft tissue, from rest of dental lamina.
- Firm, but compressible, fluid –filled swelling on the mandibular canine/ premolar region (most common site).

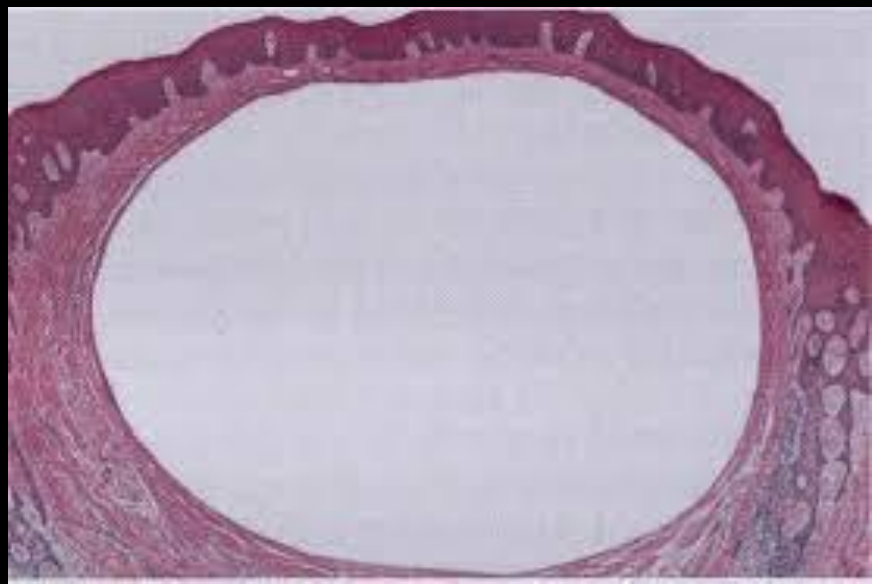
Radiographically :-

None ,sometime saucerization of the underlying bone may be seen.

Histopathology :- like lateral periodontal cyst.

Treatment :- Enucleation, No recurrence





Gingival cyst

6- Gingival cyst of the new born

- Uncommon soft tissue raised whitish nodules on the edentulous alveolar ridge of the infant, which is disappear spontaneously by rapture into the oral cavity.
- It is derived from rest of dental lamina & composed of keratin producing epithelium.
- No treatment is necessary, because spontaneous rupture usually occur early.

7- Glandular odontogenic cyst

Derived from dental lamina

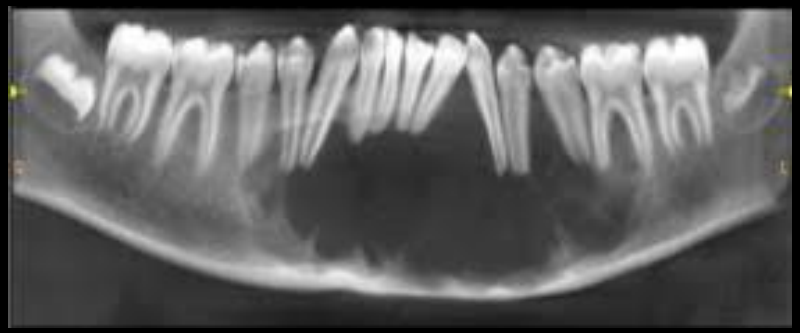
* **Clinically** :-

Mandible commonly involved, usually anterior region.

Radiographically:-

Most cases are multilocular R.L but some are unilocular

The margins are well- defined, with a seclerotic rim.



* **Treatment** :- Enucleation, recurrence is possible.

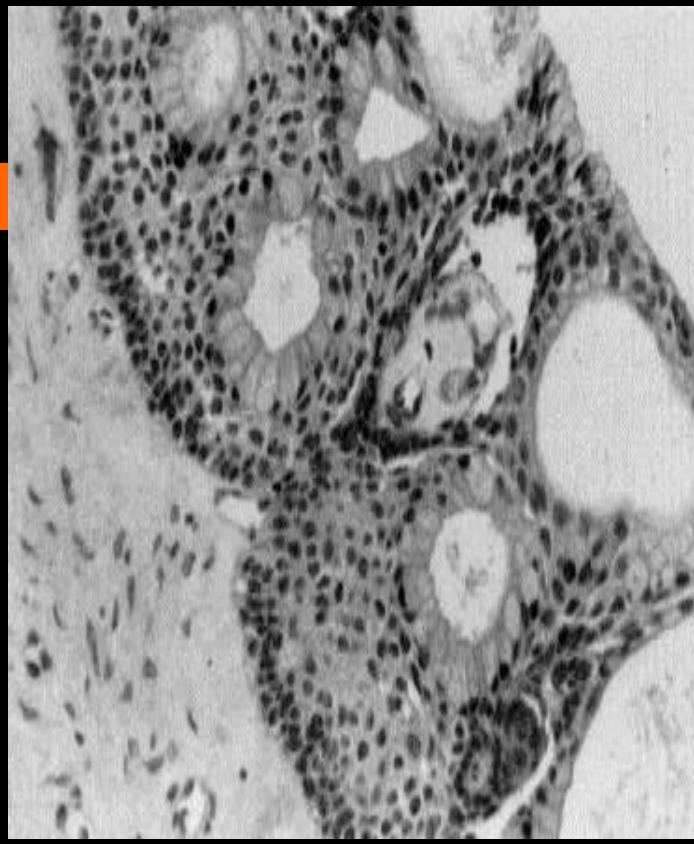
* Histopathology:-

1- Unifrom thickness of squamous epithelium with focal thickening.

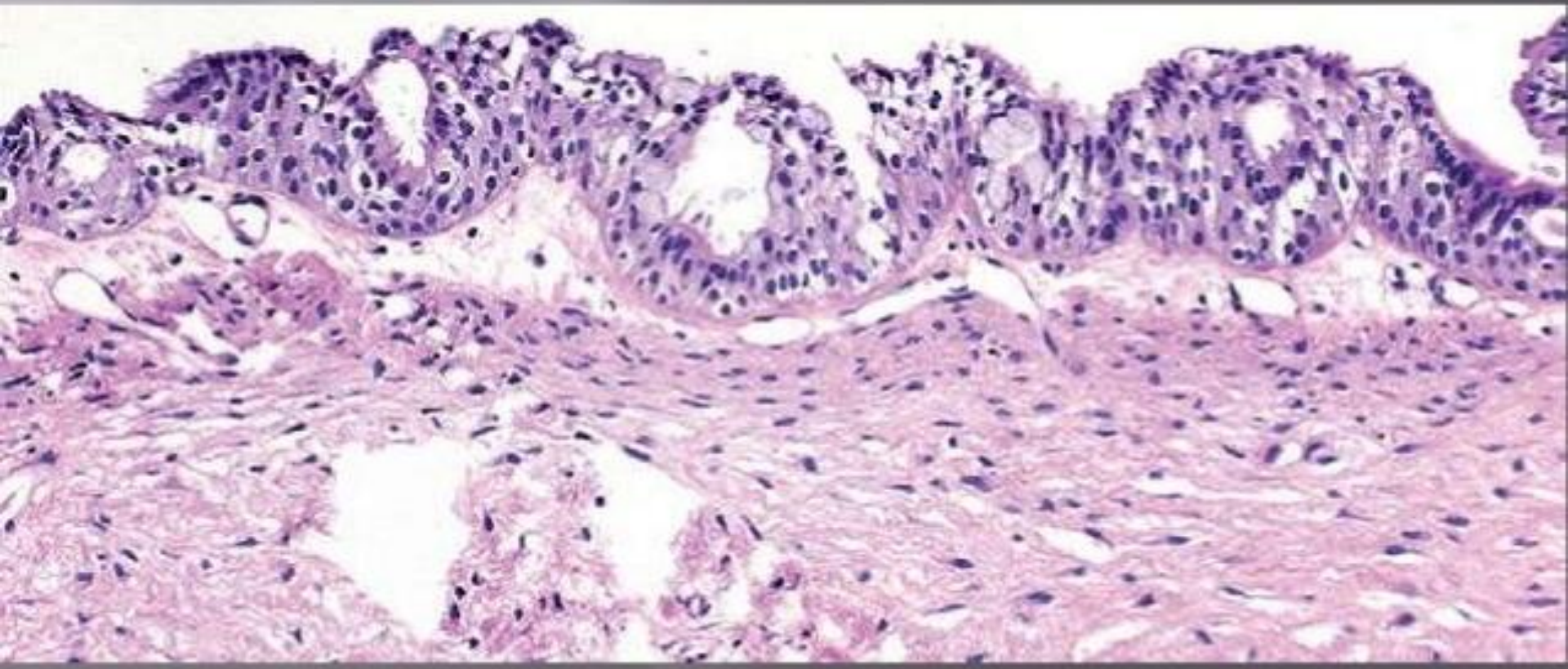
2- Variable number of small glandular structures (with mucin secretion) within the epithelial lining.

3- A single layer of columnar or cuboidal cells lining the glandular structures replacing the surface layer of stratified squamous epithelium of the cyst lining (sometime time ciliated).

4- Occasionaly, goblet-like mucous secreting cells are present.



Glandular odontogenic cyst lined by epithelium showing duct like features and mucous cells.



8- Paradental cyst

- Uncertain origin, on distal aspect of vital mandibular 3rd molar involved by pericoronitis.
- Could arise from rest of Malassez, dental lamina, or from reduced enamel epithelium.
- Inflammation play a key role in its formation.

Radiographically:- Well- circumscribed R.L on the distal aspect of lower 3rd molar.

Histopathology:- Resemble periapical cyst, with significant inflammation.

Treatment:- Enucleation & removal of the tooth.

•Pathogenesis :-

Uncertain, when tooth erupt an inflammatory response may occur in the surrounding follicle tissue which stimulate it's formation.