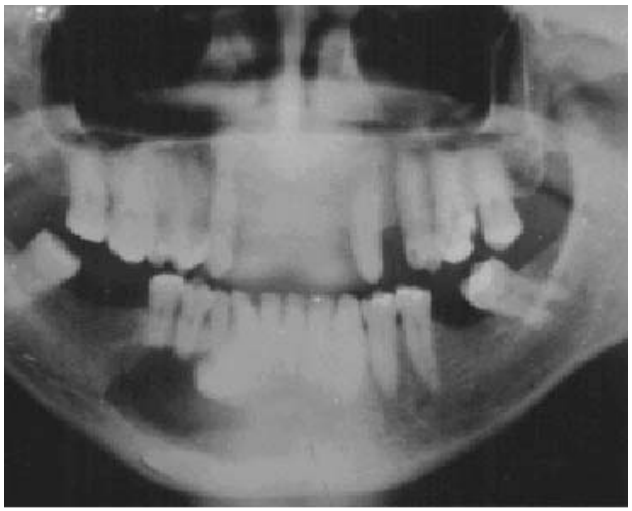
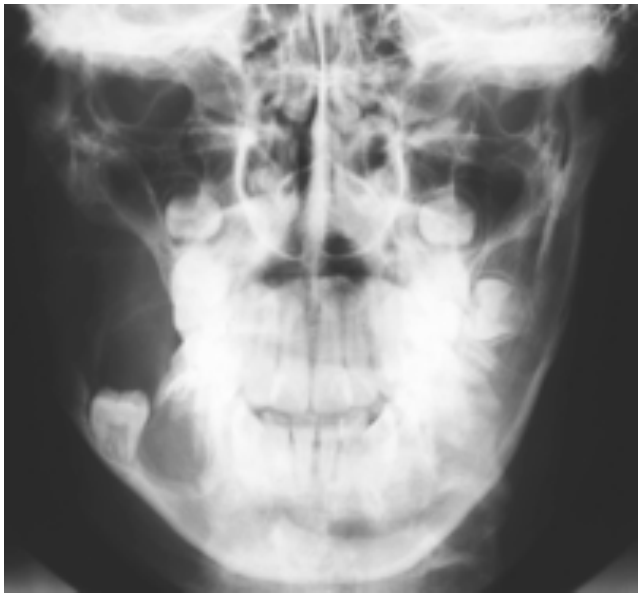
4. Calcifying Odontogenic Cyst/ Tumor (Ghost cell cyst)

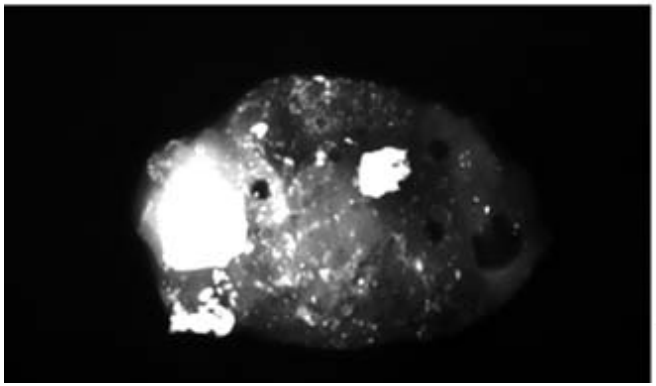
- Rare, neoplasm of odontogenic epithelium.
- Well-circumscribed, solid or cystic lesion
- Derived from odontogenic epith.
- Resemble follicular ameloblastoma, but contains "ghost cells" & "Spherical calcification" which is diagnostic for this lesion.
- It affects mostly areas anterior to the first molar.
- Extra osseous lesion appear as focal, localized swelling on gingiva.
- Intra osseous lesion produce generalized
- expansion of buccal & lingual cortices with
- no pain.

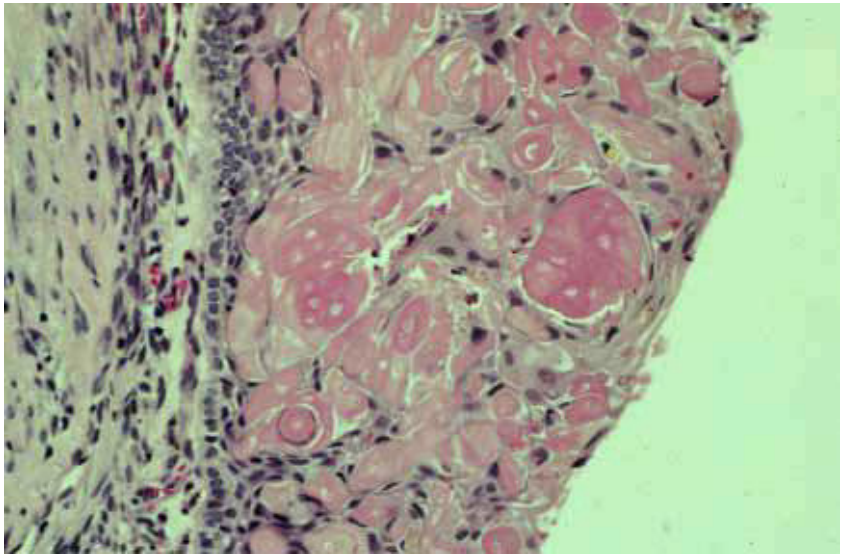


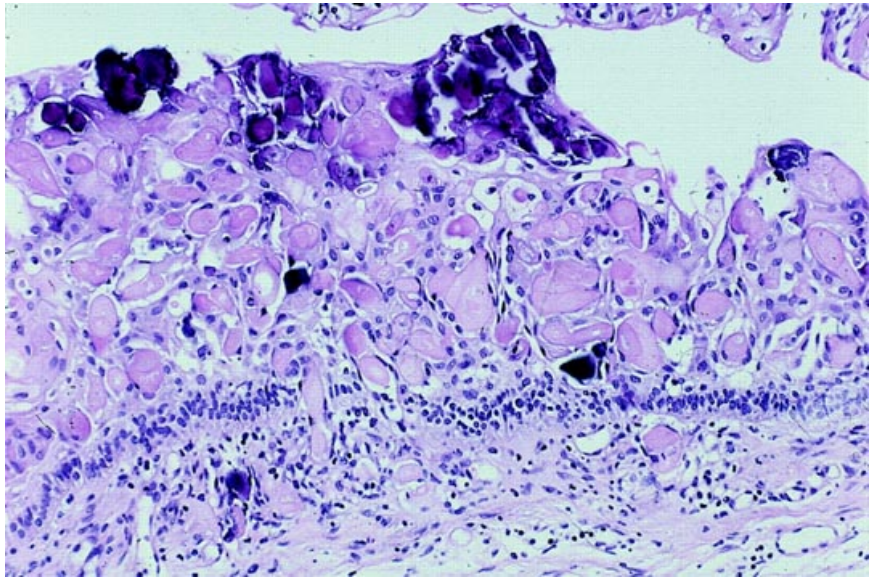


Radiographically:

- Unilocular radiolucency containing flecks of indistinct radiopacities.
- Associated with unerupted tooth (mostly canine)







Histologically:

- Some lesions have a cystic center & others are solid (neoplastic).
- The epithelial components resemble that found in ameloblastoma.
- It is composed of outer layer of palisaded colouminar basal cells & an inner layer of stellate reticulum.
- Greatly enlarged eosinophilic keratinized , epithelial cells without visible nuclei referred to as "ghost cells" are present within the stellate reticulum-like area.
- Multiple spherical & diffuse calcification within the epithelia & C.T are also seen.
- **Treatment:**
- Cystic lesion by enucleation like a non-neoplastic cyst, whereas solid lesion may be more aggressive.

5. Squamous Odontogenic tumor

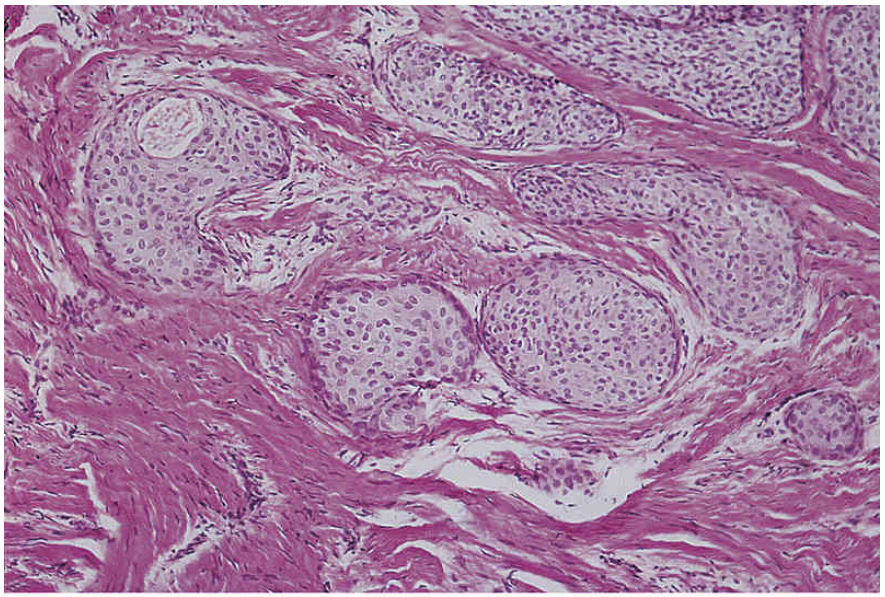
- **Rare tumor mainly affects young adults**
- **Involves the alveolar processes anterior to the molars of either jaw,** close to the roots of erupted teeth.
- Probably represent an atypical acanthomatous ameloblastoma or even SCC.

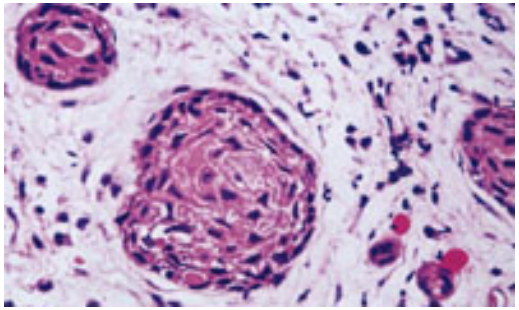
- **Arise from neoplastic transformation of DL or Ep. Rest of malassez**
- **The tumor originates within pdl.**
- **Appear as painless swelling or as looseness of teeth in a region.**

- **Radiographically:**

- **Triangular Unilocular radiolucency, not exceed 1.5 cm in greatest dimension.**

5. Squamous Odontogenic tumor



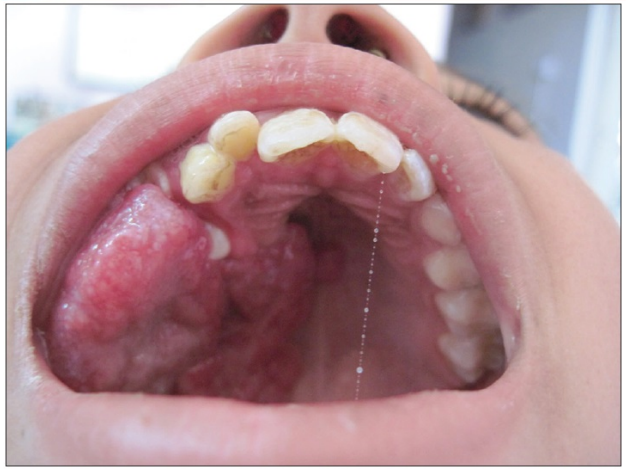


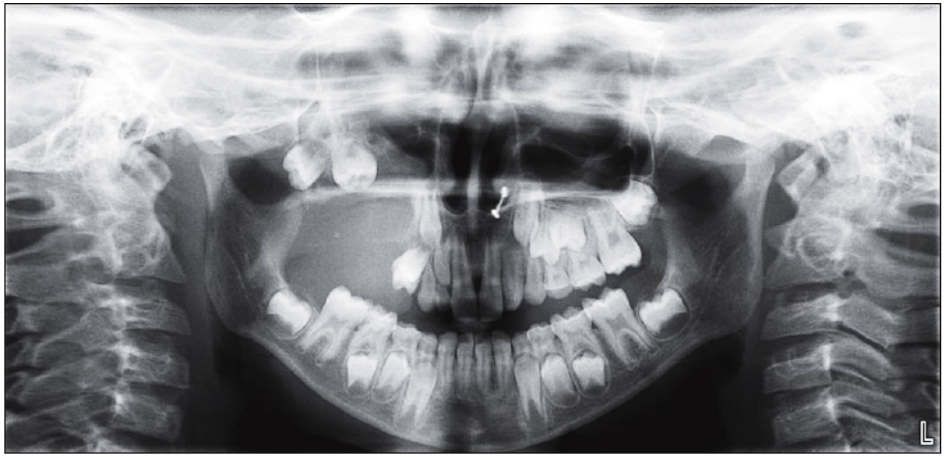
Histologically:

- Lesion is composed of rounded and elongated islands of relatively normal-appearing stratified squamous epithelia against cellular fibrous C.T background.
- peripheral cells does not show reverse polarization
- Many of the epithelial islands have central areas of microcyst formation.

Traetment:

- Local curettage & exo of involved tooth.
- Some Sq Od tu have been misdiagnosed as ameloblastoma , resulting in unnecessary radical surgery.





Mixed Odontogenic Tumors

1. Ameloblastic Fibroma

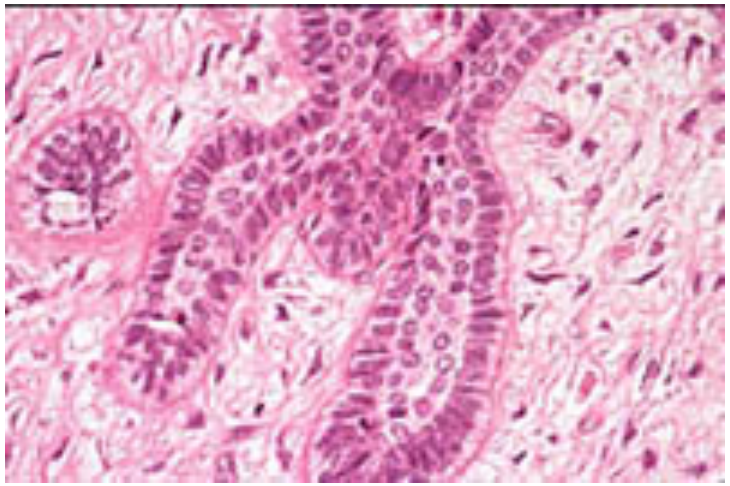
- True biphasic tumor? because the epithelia & mesenchymal components are part of the neoplastic process.

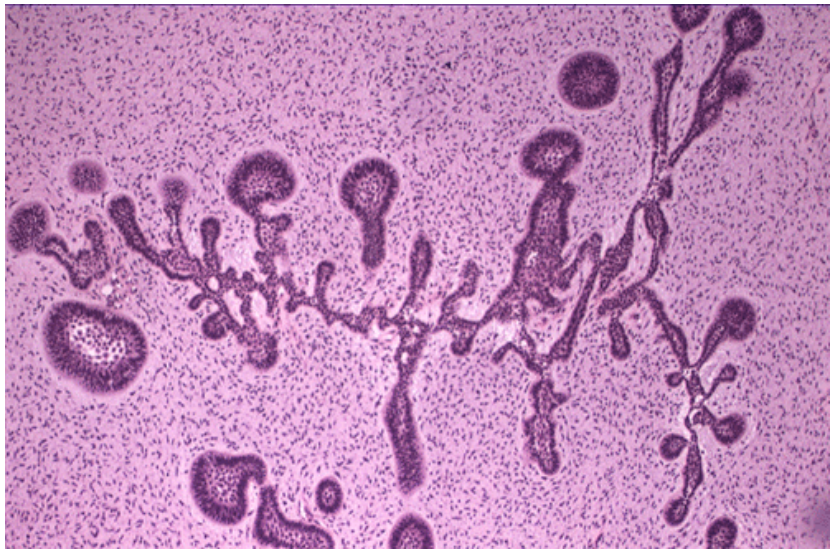
- Slowly growing, asymptomatic jaw expansion affecting young patients, mainly located in mandibular or maxillary molar area, often over an unerupted tooth.
- Diagnosed at first 2 decades of life
- It may represent the early developing stage of Ameloblastoma

Radiographically:

- Unilocular or multilocular radiolucency with impacted tooth.

Ameloblastic Fibroma

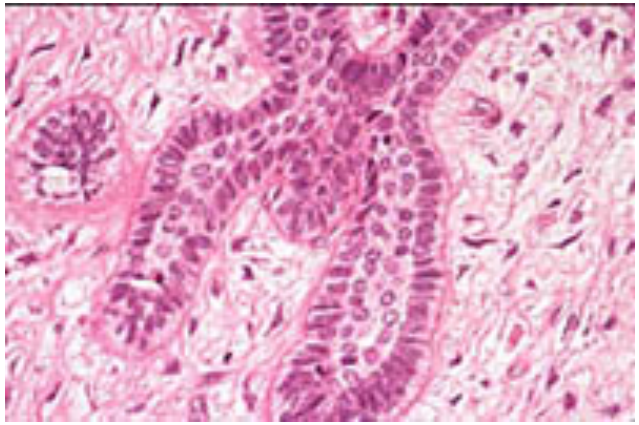


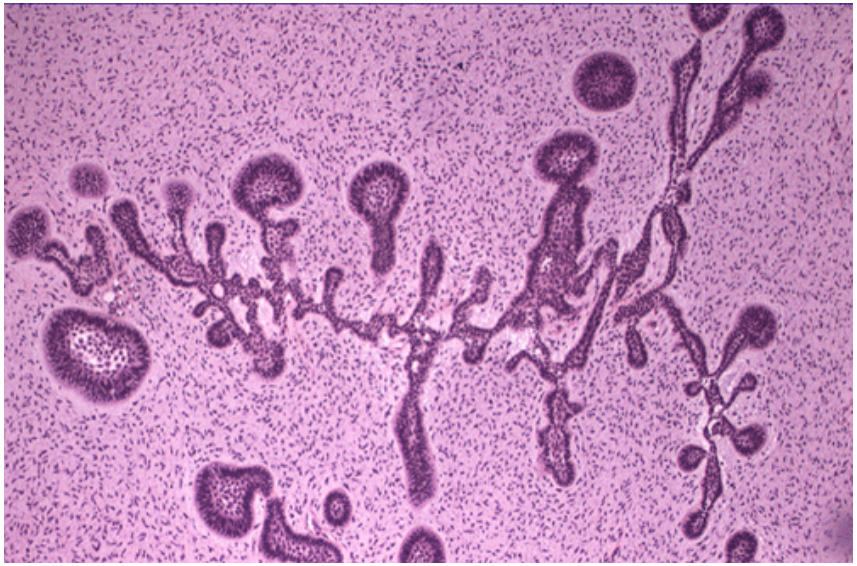


Histologically:

- Anastamosing, thin strands & cords of odontogenic epithelia (2 cells thickness).
- Other pattern resemble dental lamina & the Cap & Bell stages of early odontogenesis.
- No microcyst formation within od. Epith.(cf ameloblastoma).
- The background is composed of embryonic C.T containing randomly oriented & widely separated fibroblasts (resemble developing dental papilla).
- Zones of hyalinization are often surrounding the epithelial component of the lesion." juxtaepithelial "
- Few cases of AF occurring in conjunction with COC.

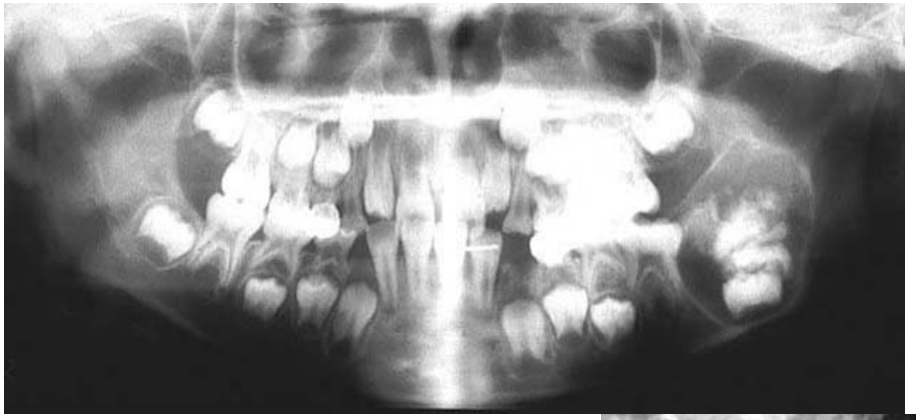
Ameloblastic Fibroma

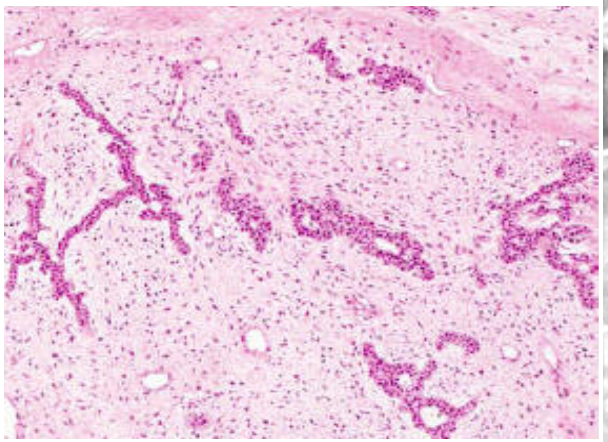


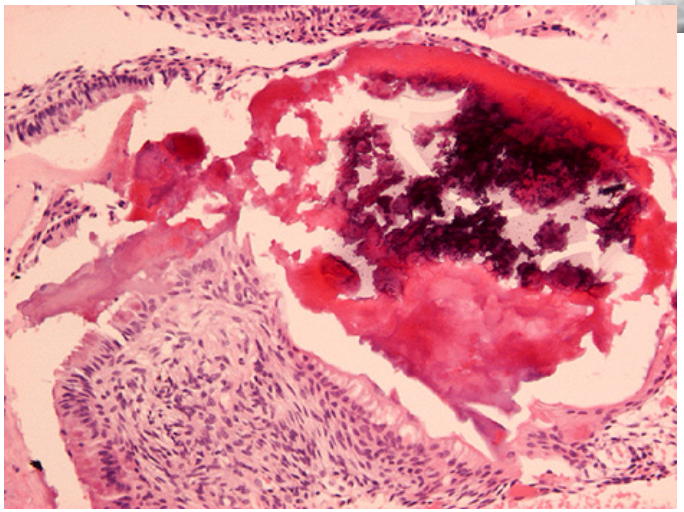


Treatment:

- The lesion is well-encapsulated & easily separated from the surrounding bony crypt by enucleation.
- Recurrence is high due to inadequate initial removal of what are frequently multilocular lesions.







2. Ameloblastic Fibro-odontoma

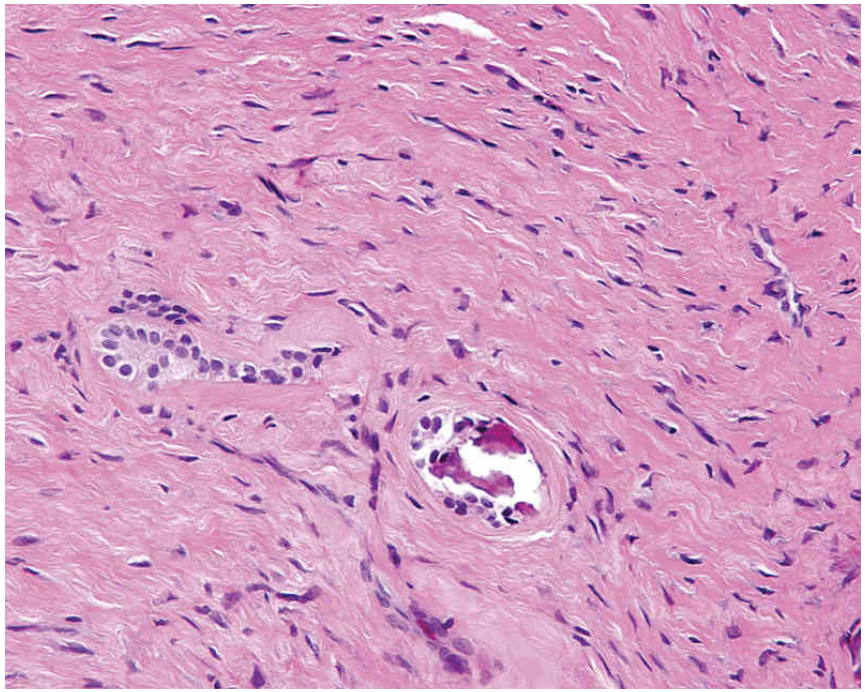
- **True neoplasm** with general features of AF but contains enamel & dentin.
- **Affect children** (10 year of of age), at posterior region of jaw
- **Asymptomatic** , discovered accidently by radiographs taken for delayed eruption reasons.
- **Well- circumscribed** uni or rarely multilocular RL with variable amount of calcification with unerupted tooth seen at the margin of the lesion

Microscopically:

- Soft tissue component : identical to AF.
- Calcified element: consist of enamel & dentin matrix in close relation to epithelial structures. More calcified lesions show mature dental structures (as rudimentary tooth or conglomerate masses of E & D)

Treatment:

- Conservative curettage with excellent prognosis.
- It does not invade the surrounding bone.



3. Central ODONTOGENIC FIIBROMA:

- Benign neoplasm derived from C.T of odontogenic origin containing widely scattered islands & strands of embryonic odontogenic epithelia & calcification.

It could arise

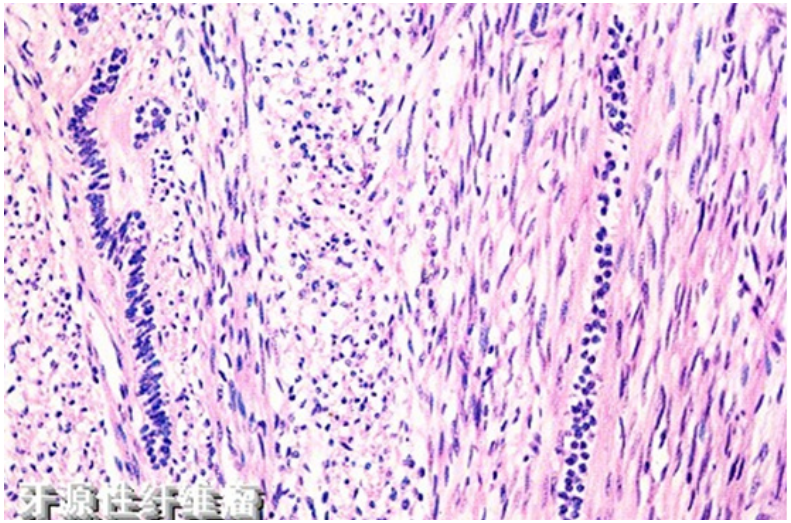
- Intra osseously & without odontogenic epithelia which is quite rare & called " Desmoplastic Fibroma" or
- Extra osseously which is relatively common & called " Peripheral odontogenic Fibroma“
- Small Lesion : well defined Unilocular RL
- Large Lesion: Multilocular with root resorption with occasional radiopaque fleck within the lesion.
- Treated by enucleation & vigorous curettage.

Peripheral odontogenic Fibroma

- It is derived from overlying gingival epithelia or rests of dental lamina remained in extra osseus location.

Clinically:

- Focal slow sessile growth of gingiva "0.5-1.5 cm in diameter" .
- Similar to peripheral fibroma.
- Mostly on anterior facial gingiva of mandible.



Histologically:

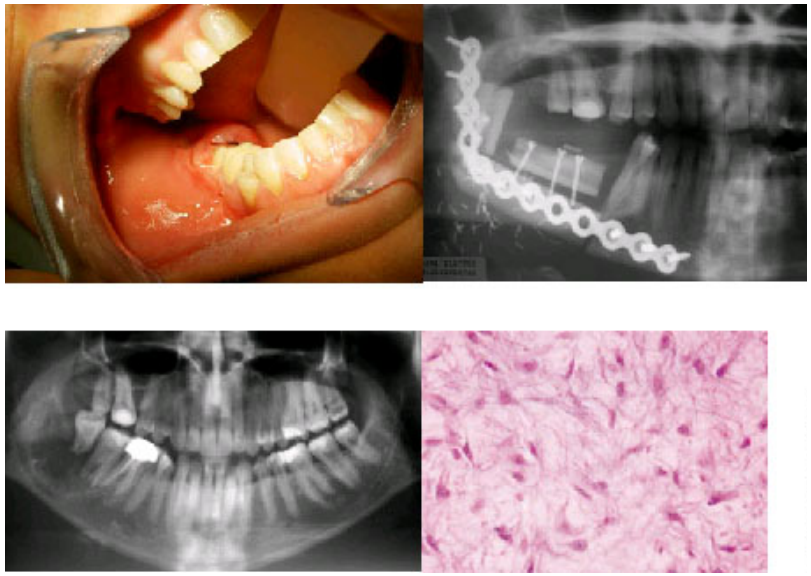
- Cellular fibrous CT, interspersed with areas of less cellular, myxoid CT.
- Strands of scattered Od epith with vacuolization.

Treatment:

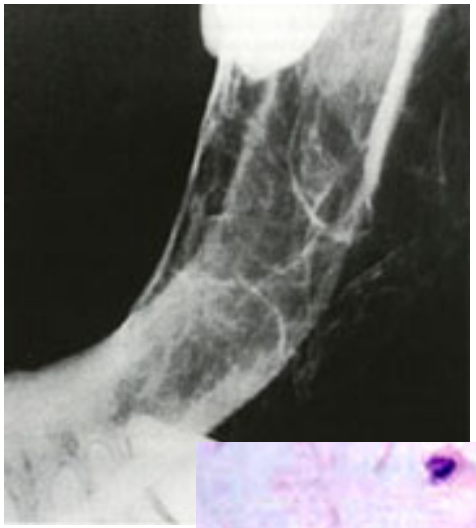
Local excision

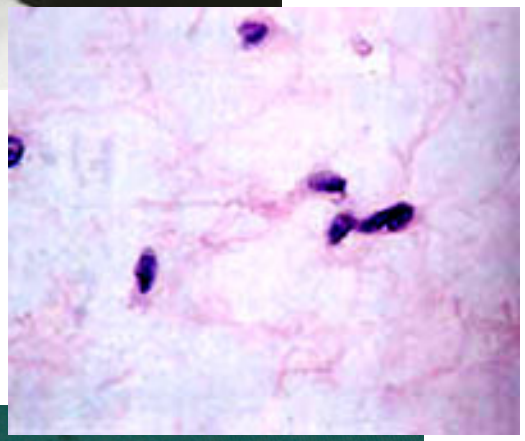
Ectomesenchymal Od tu

1. Odontogenic Myxoma



- **Locally aggressive intraosseous lesion derived from embryonic C.T (ectomesenchyme) associated with odontogenesis.**
- **It occurs in tooth-bearing areas of either jaw of young adults.**
- **Maxillary lesion erodes into the sinus.**
- **Mandibular lesion is found in molar/premolar areas & often extend into the ramus.**
- **Slowly growing, painless swelling that sometimes displace & resorb teeth.**





Radiographically:

- Multilocular radiolucency with "Soap bubble" or "Honey comb" Pattern.
- The radiolucent defect may contain thin, wispy trabeculae of residual bone which often arranged at right angles to one another.

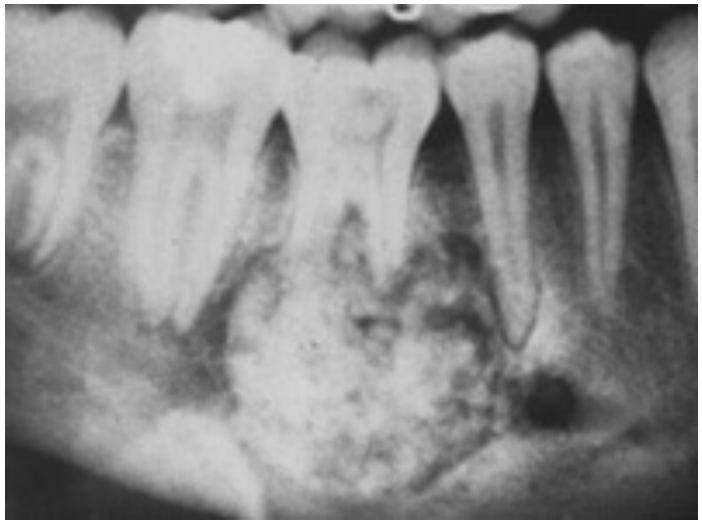
Histologically:

- Widely separated spindle or angular-shaped cells against a background of mucoid, non-fibrilar ground substance.
- In the periphery, the myxomatous tissue penetrates the trabecular spaces producing islands of residual bone, this lead to difficulty in removing the lesion.
- It could be misdiagnosed histologically with:
- Chondromyxoid fibroma or, myxoid neurofibroma

Treatment:

- Small Myxoma : Curretage with careful periodic evaluation
- Large myxoma : Block resection,
- Because of the gelatinous nature of the lesion, it is important to remove an intact specimen to reduce the chance of recurrence. (25%)

2. Cementoblastoma



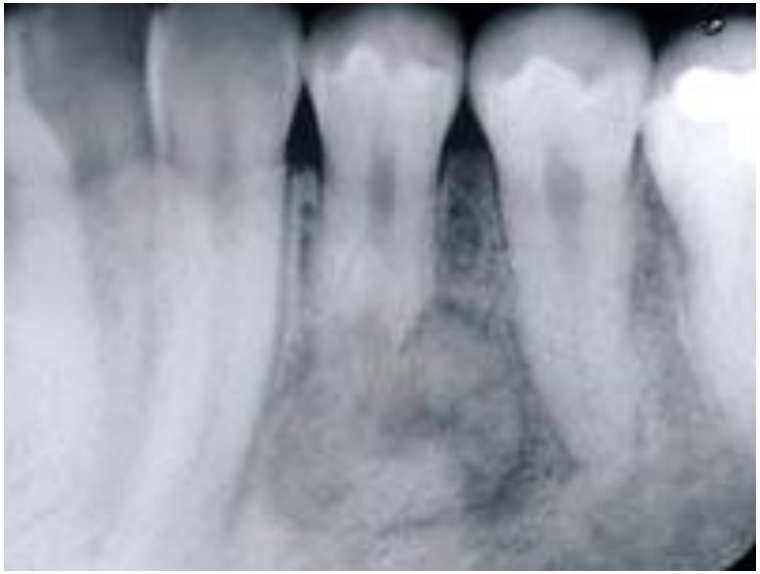
- Controversy? Od tu vs bone tumor
- Benign neoplasm of cementum-like tissue growing in continuity with the apical layer of a molar or premolar that produces expansion of cortical plates & pain.

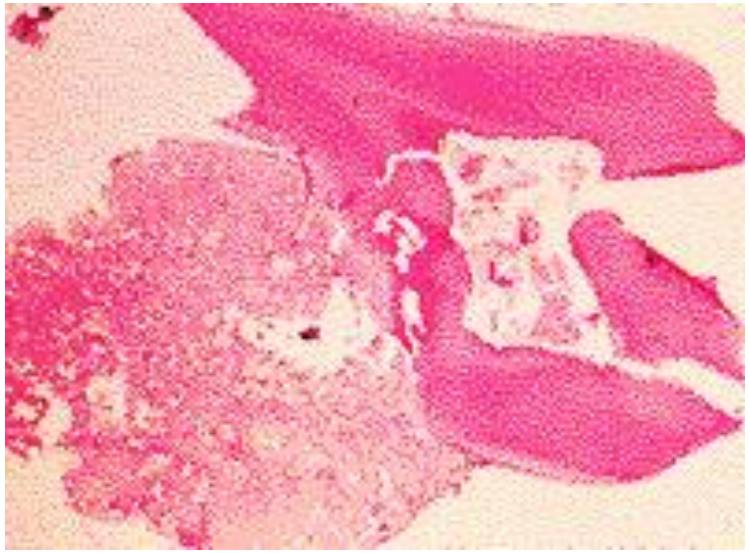
Histological feature of cementoblastoma is similar to osteoblastoma & osteoid osteoma.

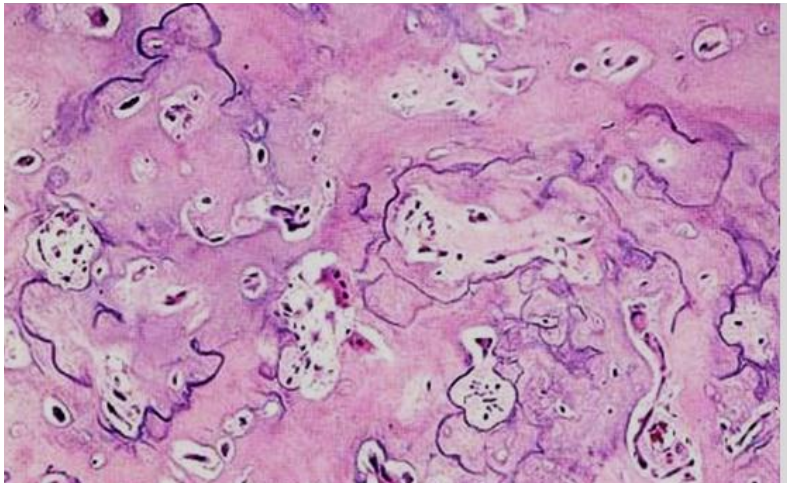
- It affects young adults in molar/premolar area of mandible with lesions attached to the apical 1/3 of the vital root.
- **Pain is a diagnostic feature** of this tumor which becomes more intense if the area is palpated, but the teeth are vital.

Radiographically:

- **Unilocular well-demarcated radiolucency or mixed radiolucent/radiopaque or completely radiopaque**
- **Root resorption.**





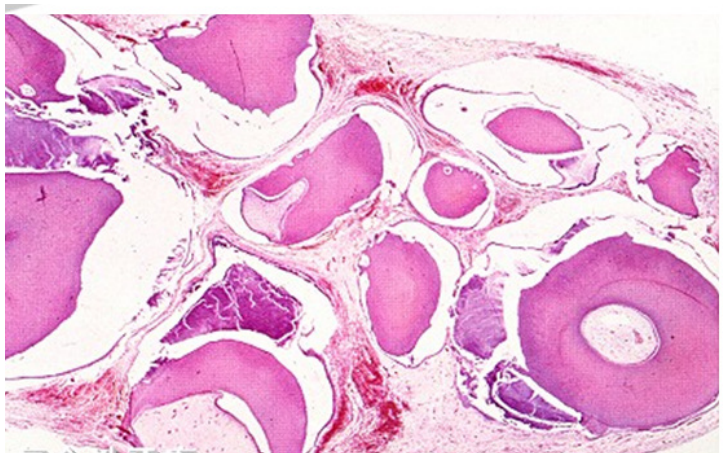


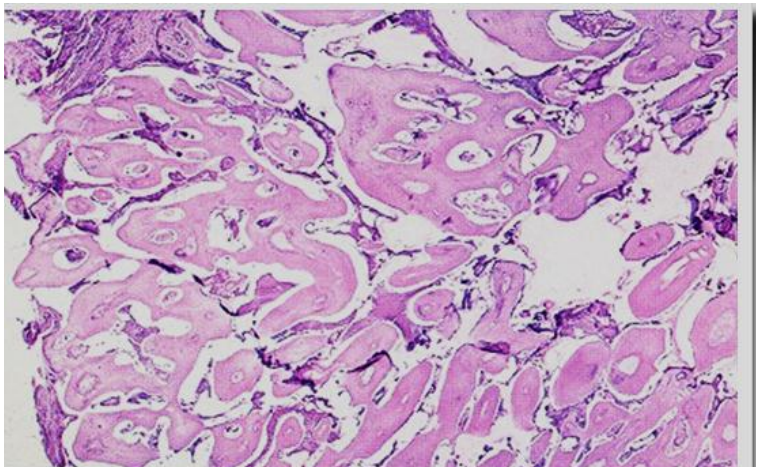
Histologically:

- Features similar to osteoblastoma , but here with a fusion with involved tooth.
- Deposition of unmineralized cementum matrix that are continuous with the normal cementum layer of one of the tooth roots.
- Periodontal ligament adjacent to normal cementum follows the bulbous periphery of the lesion.
- The peripheral zone of the lesion is relatively acellular, whereas, the central zone is composed of more mineralized tissue that is loose, very cellular & exhibits an increase in vascularity.
- Multinucleated cells are abundant in cellular central areas.
- Mineralized tissue exhibits increased number of reversal lines which is indicative of extensive remodeling during growth of the lesion.

Treatment:

- Since the lesion is well-encapsulated: enucleation is easily accomplished with no recurrence.

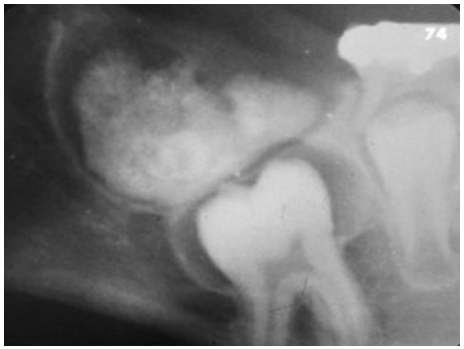


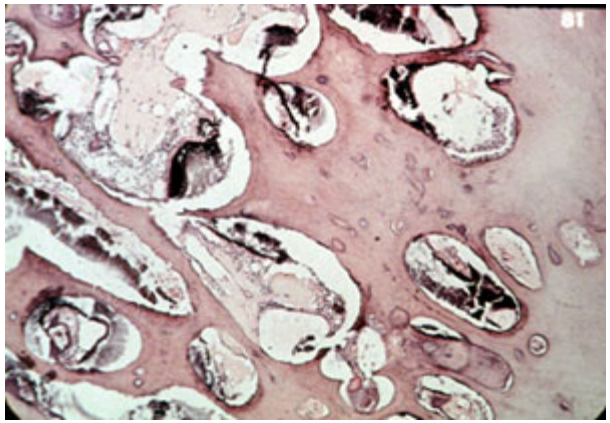


ODONTOMA:

- Hamartomatous lesion found over unerupted teeth, containing enamel, dentin, pulp & cementum in either recognizable teeth shape (Compond) or as a solid mass (complex).

- It represents nearly 70% of all odontogenic tumors.
- Most commonly occur in maxilla than in mandible as asymptomatic swelling.
- Detected radiographically during the first 2 decades



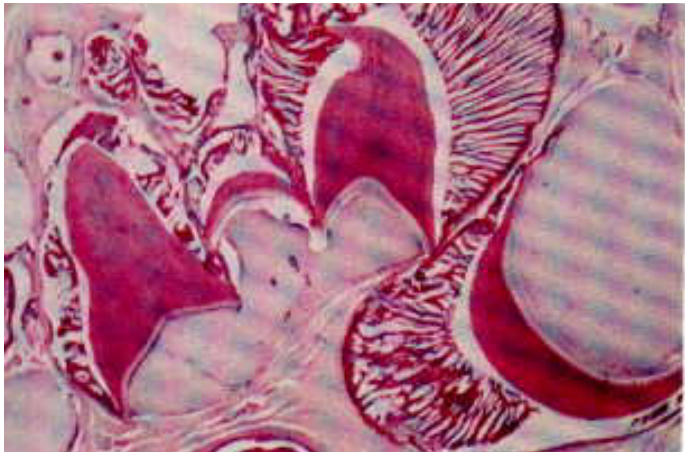


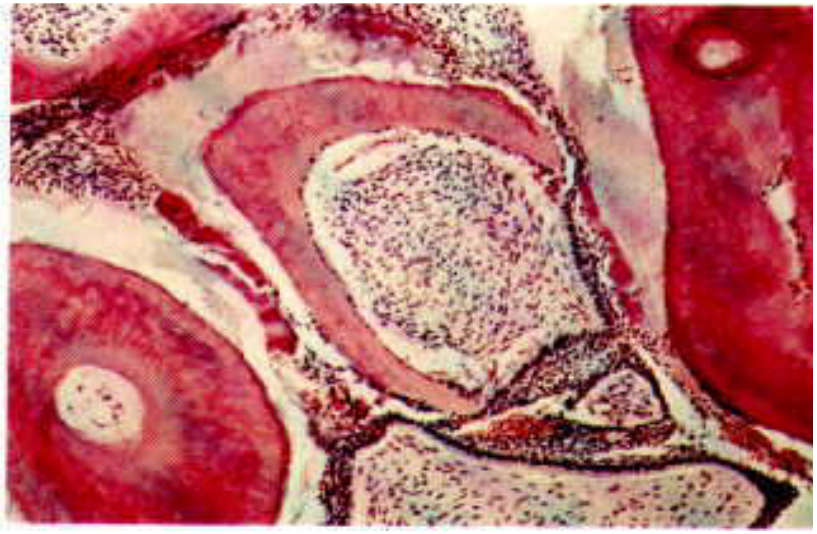
Compound Odontoma

- Commonly occur in anterior maxilla than in mandible as asymptomatic swelling either over the cowns of unerupted teeth or between the roots of erupted ones.
- Radiographically:
- Lesions are usually unilocular, containing multiple radiopaque structures that resemble miniature teeth.
- Compound odontoma may contains as few as 2-3 miniature tooth-like structures or as many 20-30.

Complex odontoma

- Found in posterior parts of mandible over impacted teeth & can attain sizes up to several centimeters.
- Appear as a solid radiopaque mass.
- Lesions are unilocular & separated from normal bone by distinct line of cortication.
- Individual tooth-like structures are absent.





Histologically:

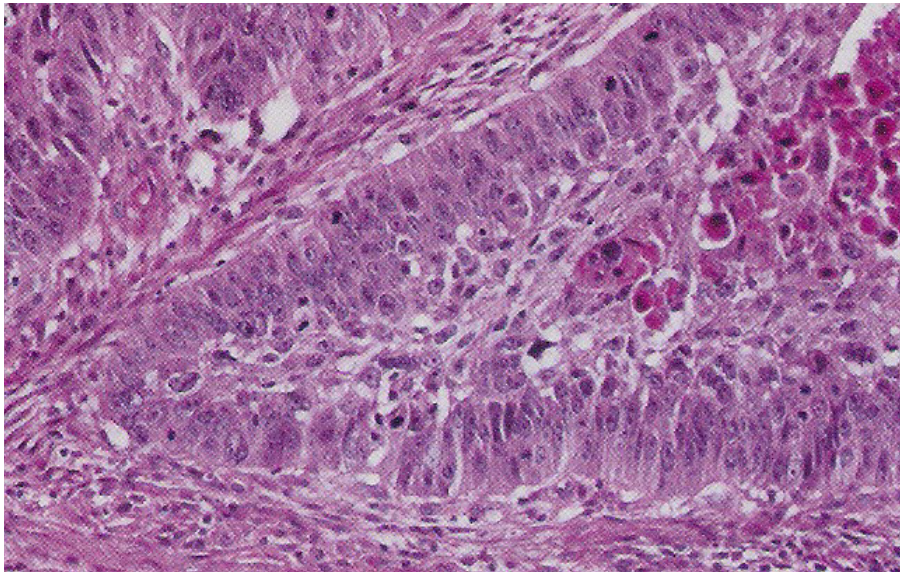
- **Enamel, dentin & pulp tissue of the tooth-like structures of compound odontoma are arranged in an orderly pattern with a surrounding capsule.**

- **Complex odontoma differ by being composed of a single, disorganized mass of enamel, dentin & pulp with no recognizable tooth shapes.**

Treatment:

- **Enucleation from surrounding bone.**

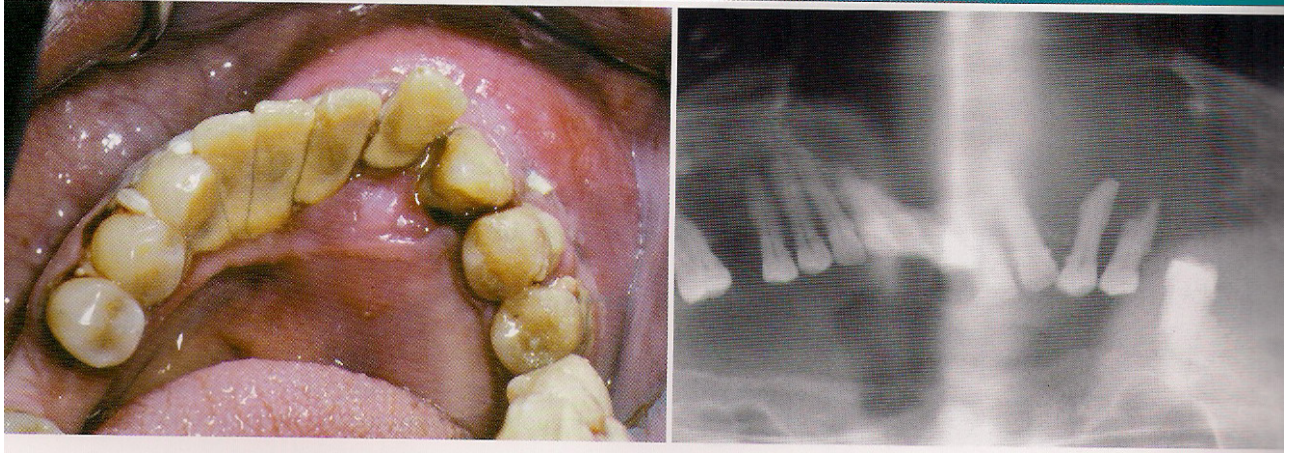
12. Malignant Ameloblastoma & Ameloblastic Carcinoma



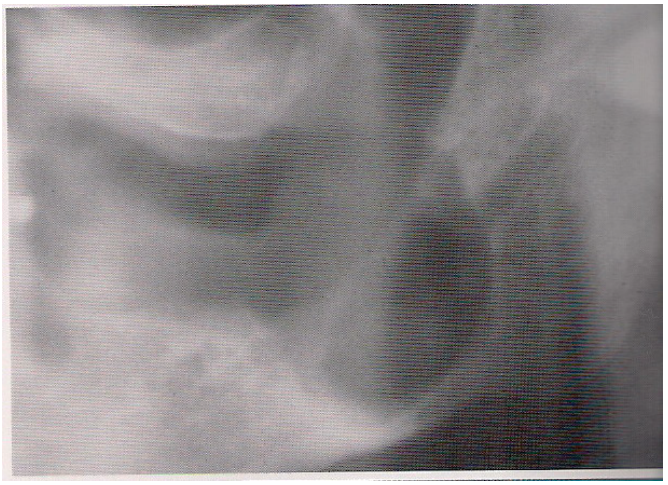
Malignant Ameloblastoma: Tumour that shows the histopathologic features of ameloblastoma, both in primary tumor & in metastatic deposits.

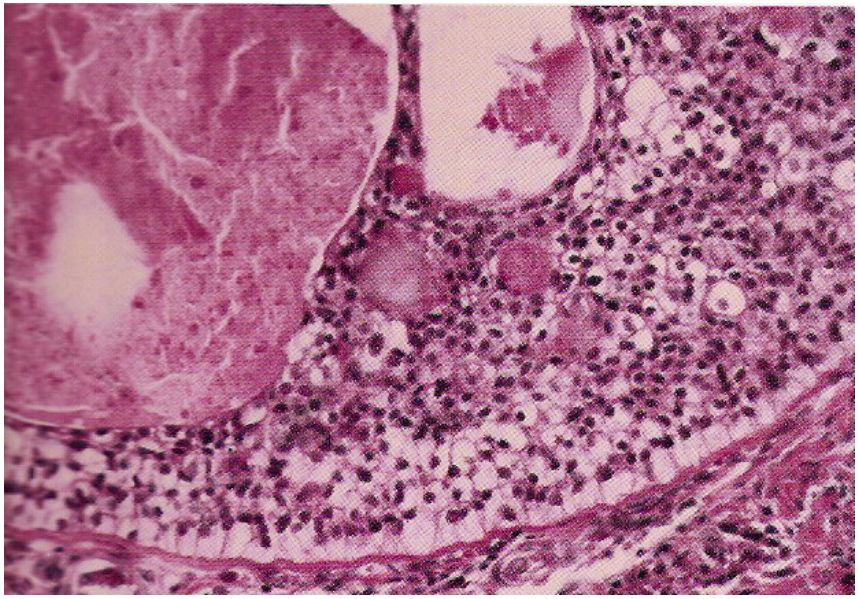
Ameloblastic carcinoma: Ameloblastoma that has cytologic features of malignancy in the primary tumor, in a recurrence or in any metastatic deposits.

- Both follow aggressive local course.
- Metastases from ameloblastoma mostly to the lung followed by cervical lymph nodes



13. Clear Cell odontogenic carcinoma





- Rare, affect patients over 50 years of age, mainly in mandible.
- pain, lip parasthesia & bony swelling are the CC. Soft tissue involvement in 60% of cases. Why?
- Uni or Multilocular RL with ill-defined margin.

Histologically:

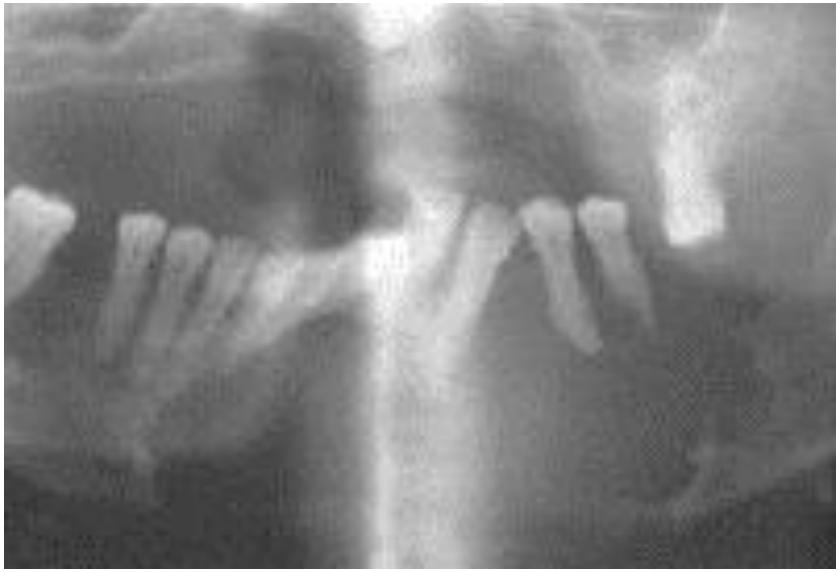
- ***It could be biphasic:***
- Varying-sized nests of epithelial cells with clear or faintly eosinophilic cytoplasm . *"similar to glycogen – rich presecretory ameloblasts".* Admixed with more eosinophilic polygonal epithelial cells.
- ***Or monophasic***: Only clear cells arranged in nests and cores with thin hyalinized CT.
- ***Third pattern:*** Peripheral cells of the clear cells with palisading pattern, insignificant mitosis and pleomorphism

- Difficult to distinguish from intra osseous Mucoepidermoid carcinoma , CEOT, Metastatic renal cell carcinoma, clear cell breast carcinoma or clear cell melanoma.

Treatment:

- initial enucleation or curretage to radical surgery
- Metastatic involvement of regional lymph nodes and pulmonary metastasis has been reported.

14. Odontogenic Carcinoma



- Aggressive & destructive intraosseus lesion of the mandible or maxilla that composed of poorly differentiated epithelial cells & clear cells in a pattern that is reminiscent of early odontogenesis.

Radiographically:

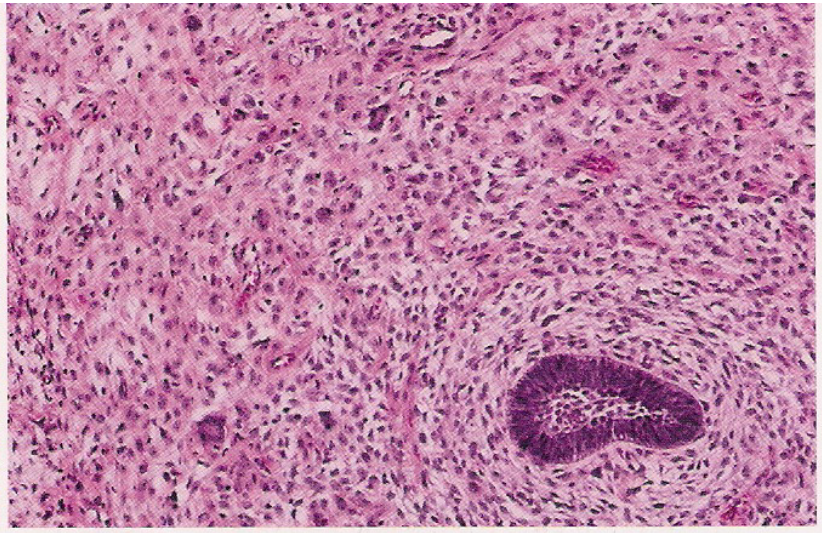
- Diffuse honey-comb radiolucency.

Histologically:

- Epithelial structures with malignant features are usually surrounded by zone of myxomatous connective tissue.

Behavior:

- **Very infiltrative & has a high recurrence rate.**



15. Ameloblastic Fibrosarcoma

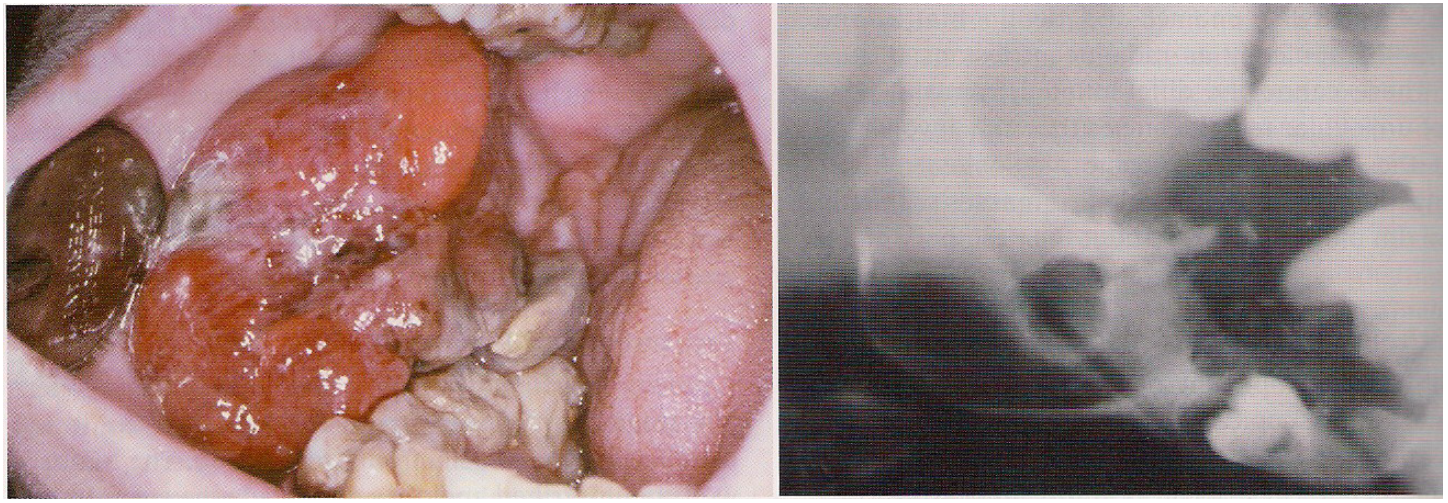
- Malignant counterpart of AF or arise *de novo*
- Only mesenchyml portion shows features of malignancy
- Affects young males , mostly in the mandible as rapid clinical growth.
- Pain , swellin and rapid growth with Ill-defined destructive RL

Microscopically:

- Epith. Components similar to that of AF
- Mesenchymal portion: Hyperchromatic, with bizzar pleomorphic cells & prominent mitosis

Treatment:

Radical Resection



That's all about it ??