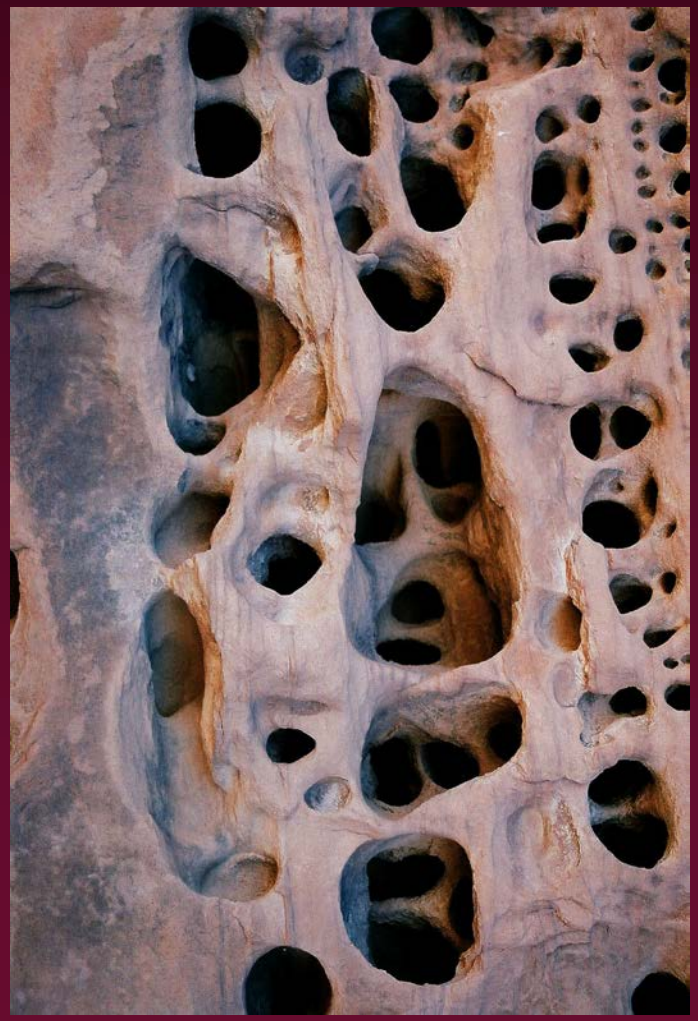
Differential Diagnosis of Radiolucent Lesions of the Jaws

Multilocular



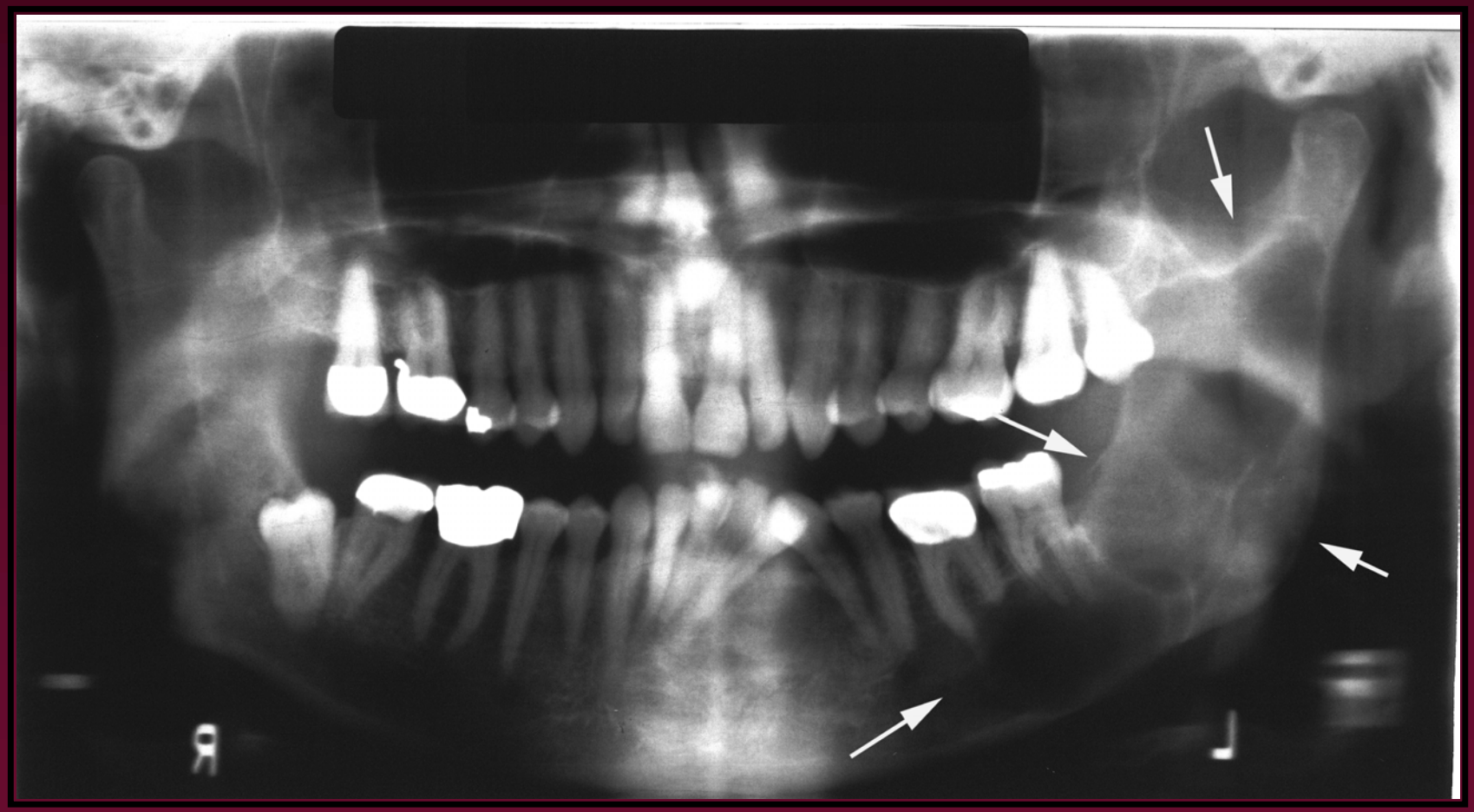
Multilocular Radiolucencies

- Odontogenic Keratocyst
- Botryoid Odontogenic Cyst
- Glandular odontogenic Cyst
- Invasive Ameloblastoma
- Central Giant Cell Granuloma
- Brown Tumor (Hyperparathyroidism)
- Aneurysmal Bone Cyst
- Odontogenic Myxoma
- Central Arteriovenous Malformations
- Fibromatosis/Myofibromatosis
- Nerve Sheath Tumors
- Thalassemia (Mediterranian Anemia)

Odontogenic Keratocyst

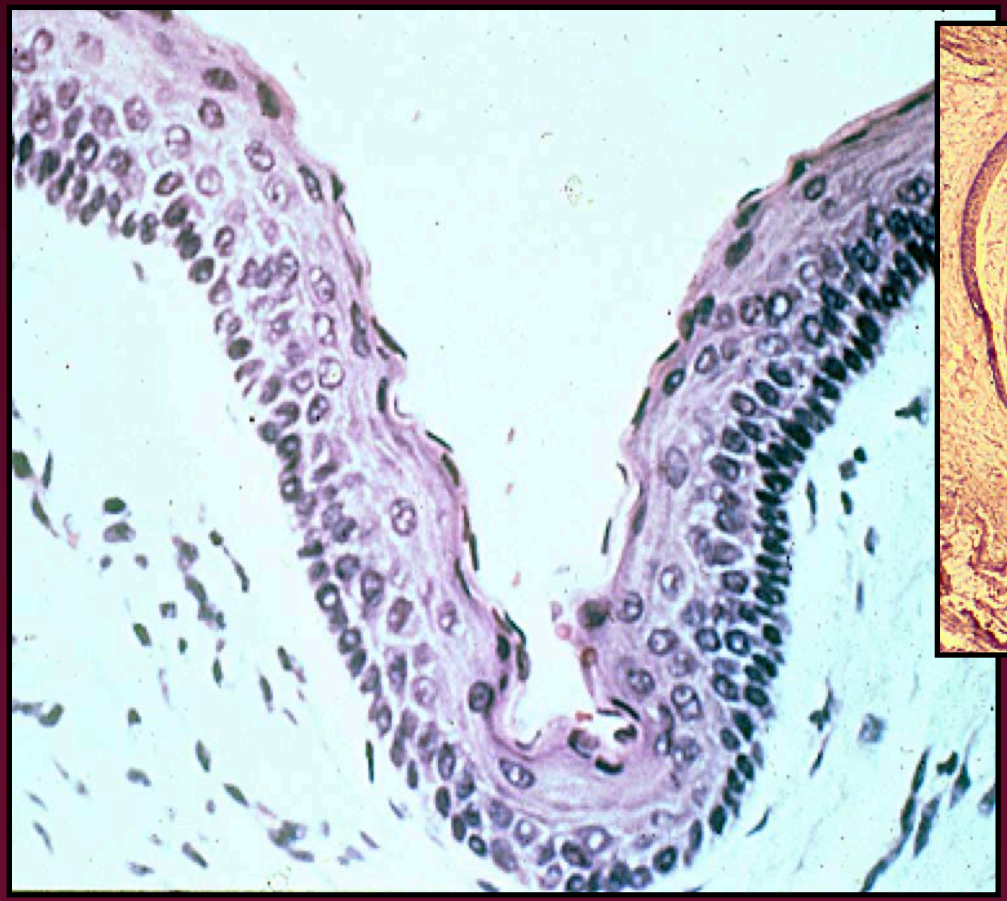
- Mandible > Maxilla
- Aggressive, expansile
- May perforate cortex
- <2cm – recurrence low (>20%)
- >2cm – recurrence may reach 50%
- Tx is Curettage, Marsupialization
- Soft tissue invasion may require resection
- Multiple OKCs – R/O Gorlin syndrome

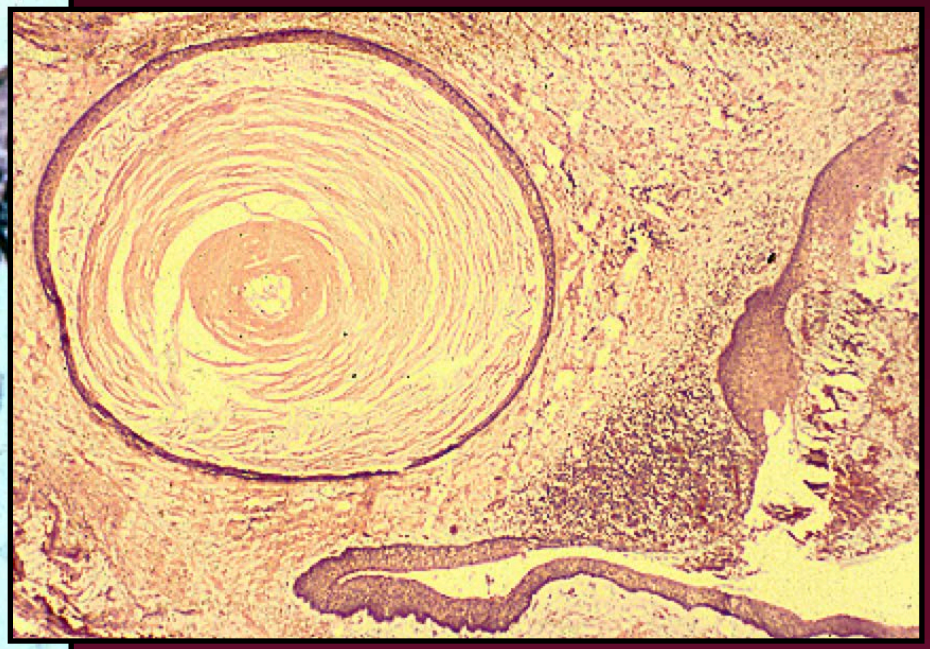
Odontogenic Keratocyst



Odontogenic Keratocyst

- Histopathology





Botryoid Odontogenic Cyst

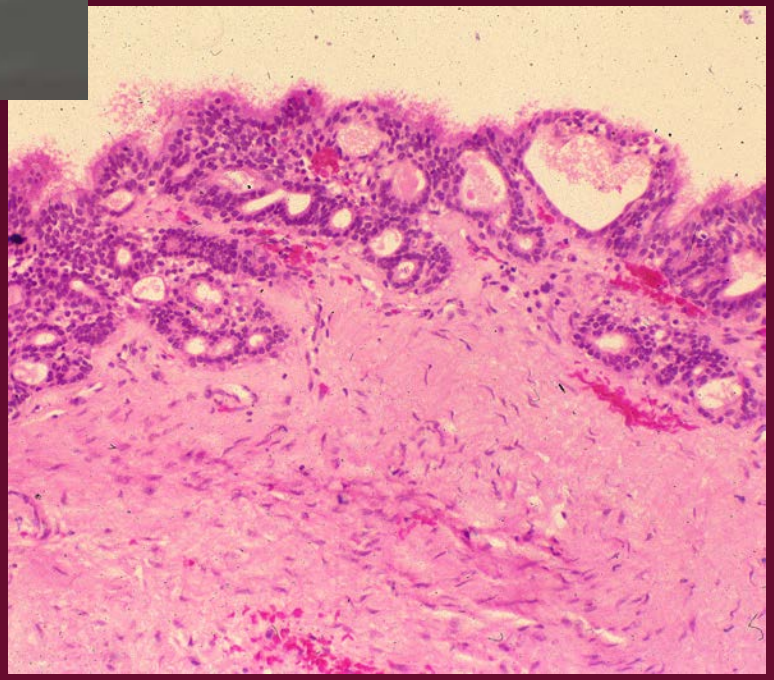
- Variant of the Lateral Periodontal Cyst
- Mandible>Maxilla
- Anterior to premolars
- Nonaggressive Behavior, yet may recur after curettage
- Thin lining with focal clear cell acanthomatous nodules

Botryoid Odontogenic Cyst

Glandular (Sialo-Odontogenic) Cyst

- Anterior Jaws
- Pericoronal or Multilocular
- Adults
- Tendency for Recurrence after curettage
- Stratified Squamous lining with mucous metaplasia, forming acinar-like clusters.

Sialo-odontogenic Cyst

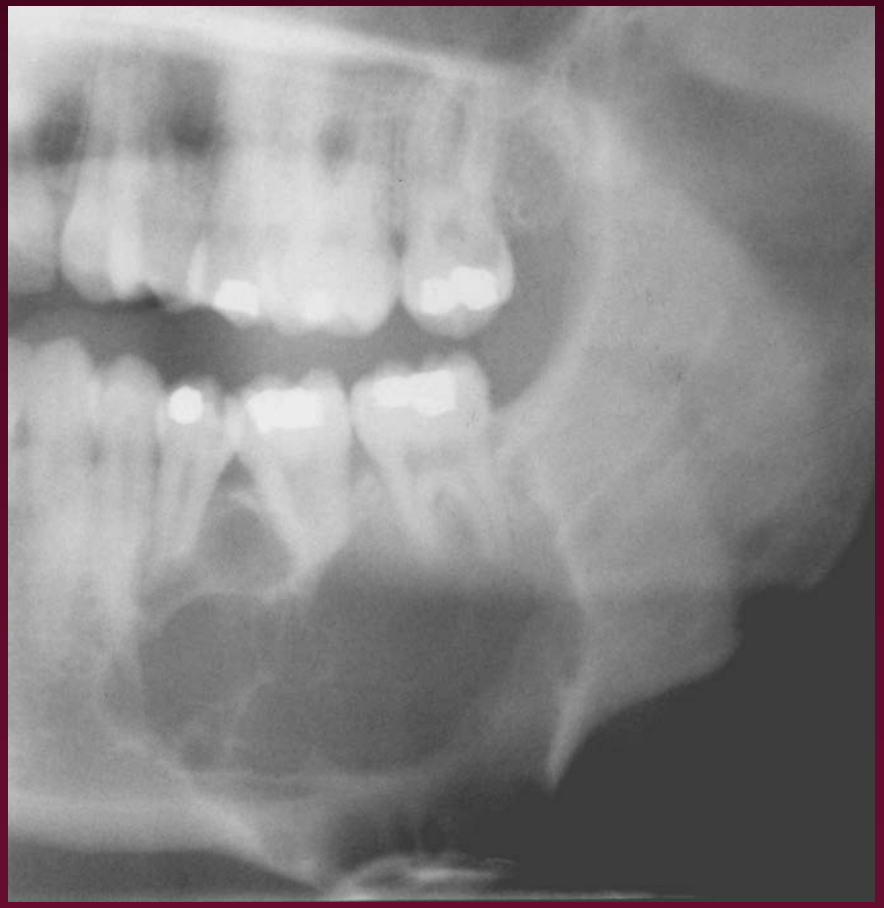


Ameloblastoma (Invasive)

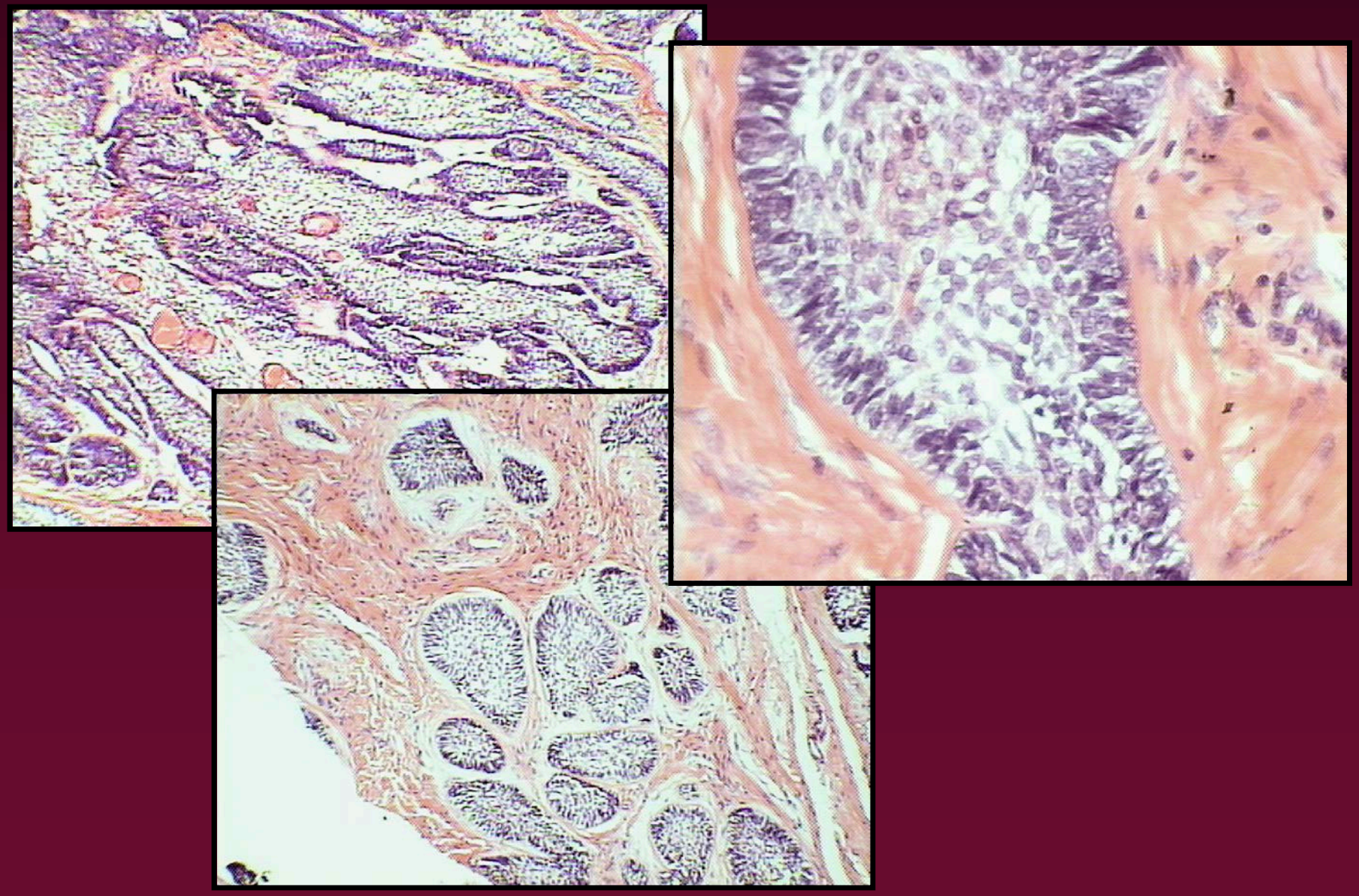
- Unicystic type may be scalloped
- Invasive type “soap bubble”
- Mandible > Maxilla (both posterior)
- Adult Onset
- Histologic Subtypes are not prognostic
  - Follicular, acanthomatous, granular cell
- Mandible -- curettage, resection
- Maxilla -- resection

Ameloblastoma

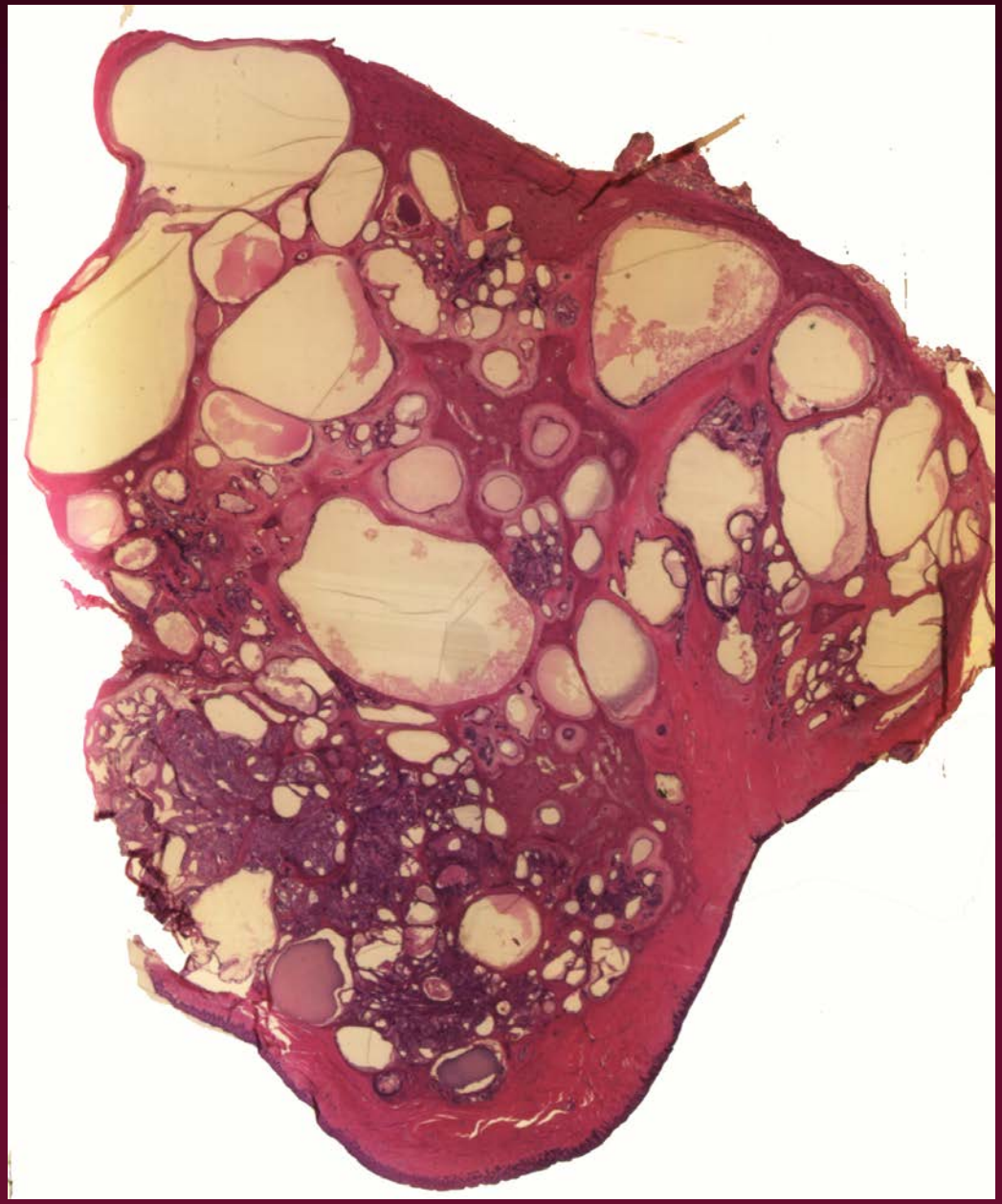
Invasive Ameloblastoma



Ameloblastoma Microscopic Patterns



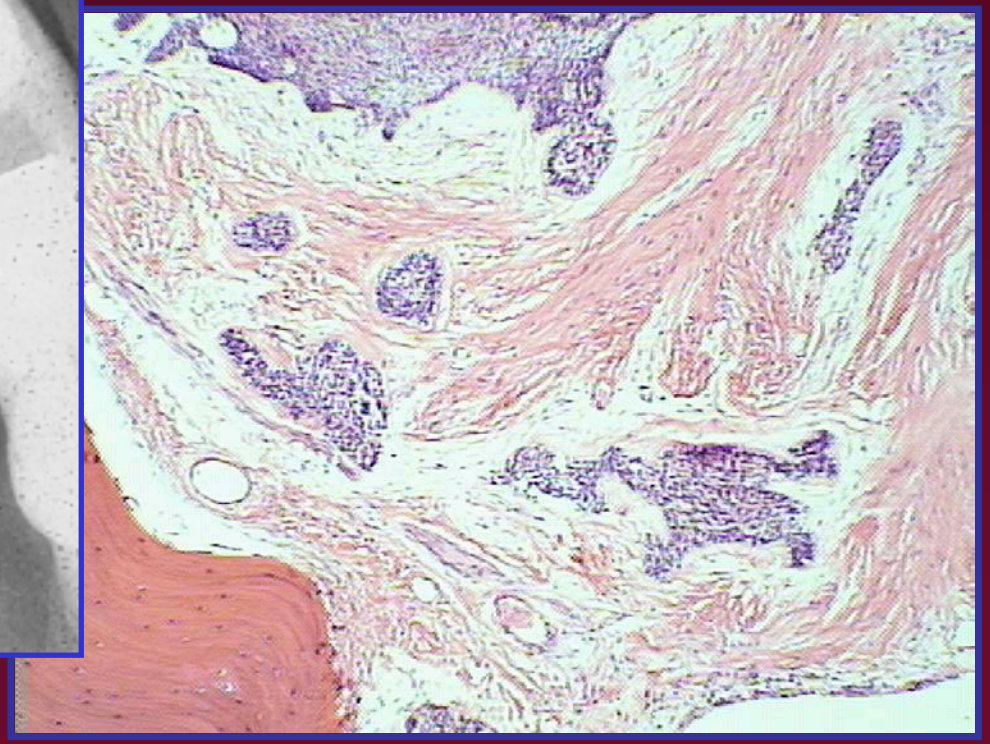
Ameloblastoma Multilocular Histology



Desmoplastic Ameloblastoma

- Histologic Variant with unique clinical features.
- Multilocular with diffuse opacification ("fibro-osseous radiography")
- Adult onset
- Anterior Mandible
- Resection is usually required

Desmoplasic Ameloblastoma

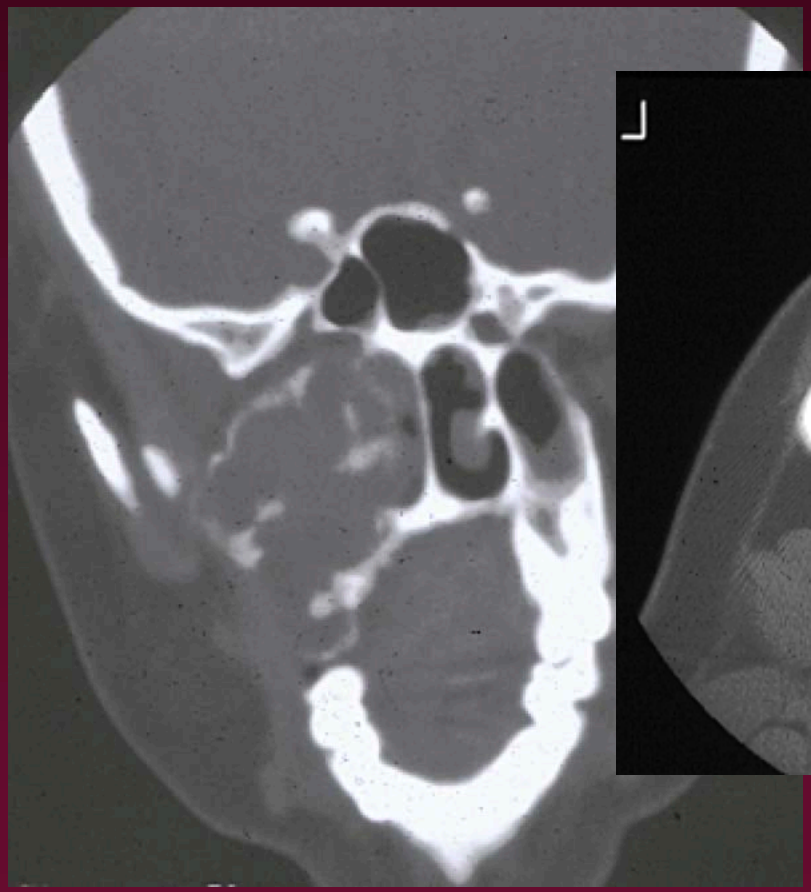


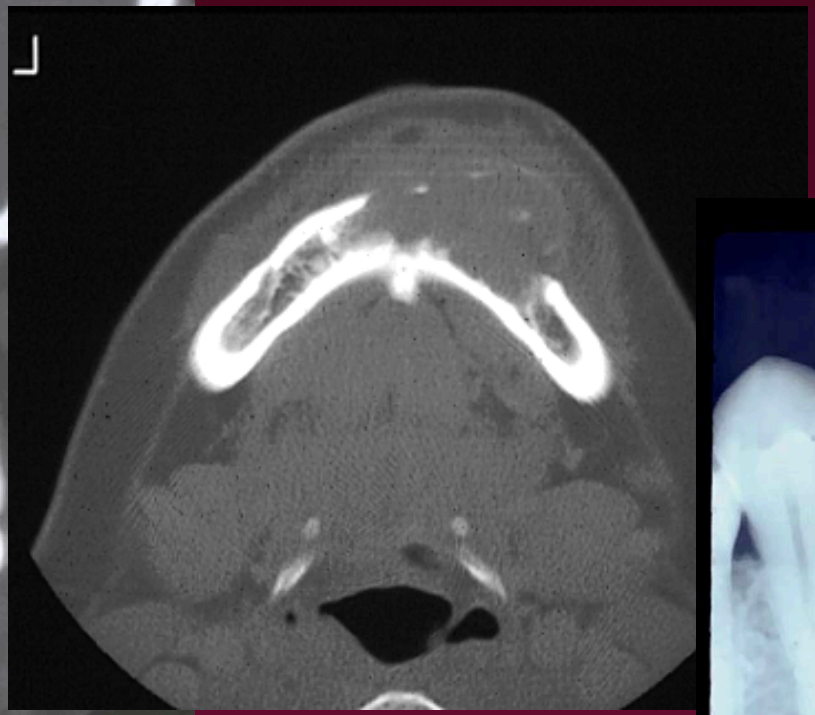
Central Giant Cell Granuloma

- Anterior to First Molars
- Mandible > Maxilla
- Expansile
- Teens, Adults
- Periapical location, tooth bearing regions
- Treatment
  - Intralesional Steroids
  - Curettage
- Aggressive Variants recur
- R/O Hyperparathyroidism

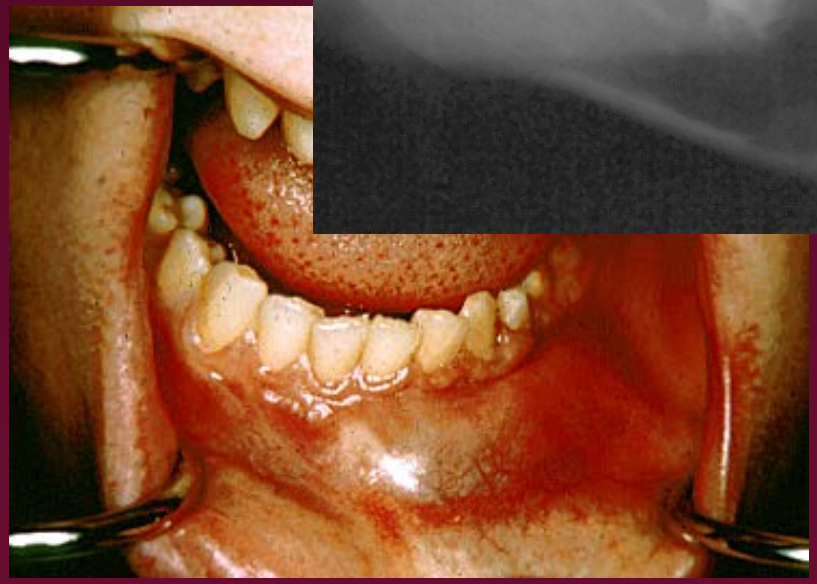
Central Giant Cell Granuloma

- Radiographic

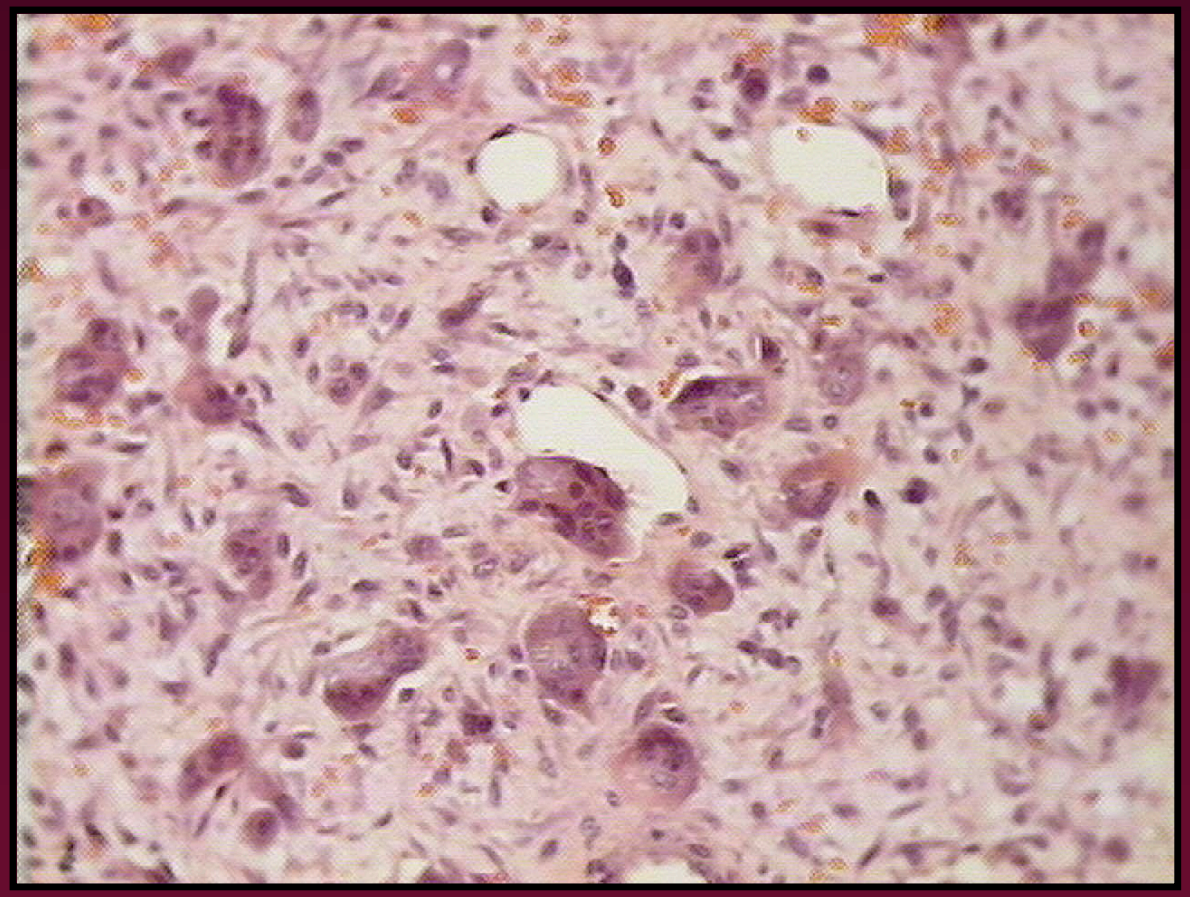




CGCG



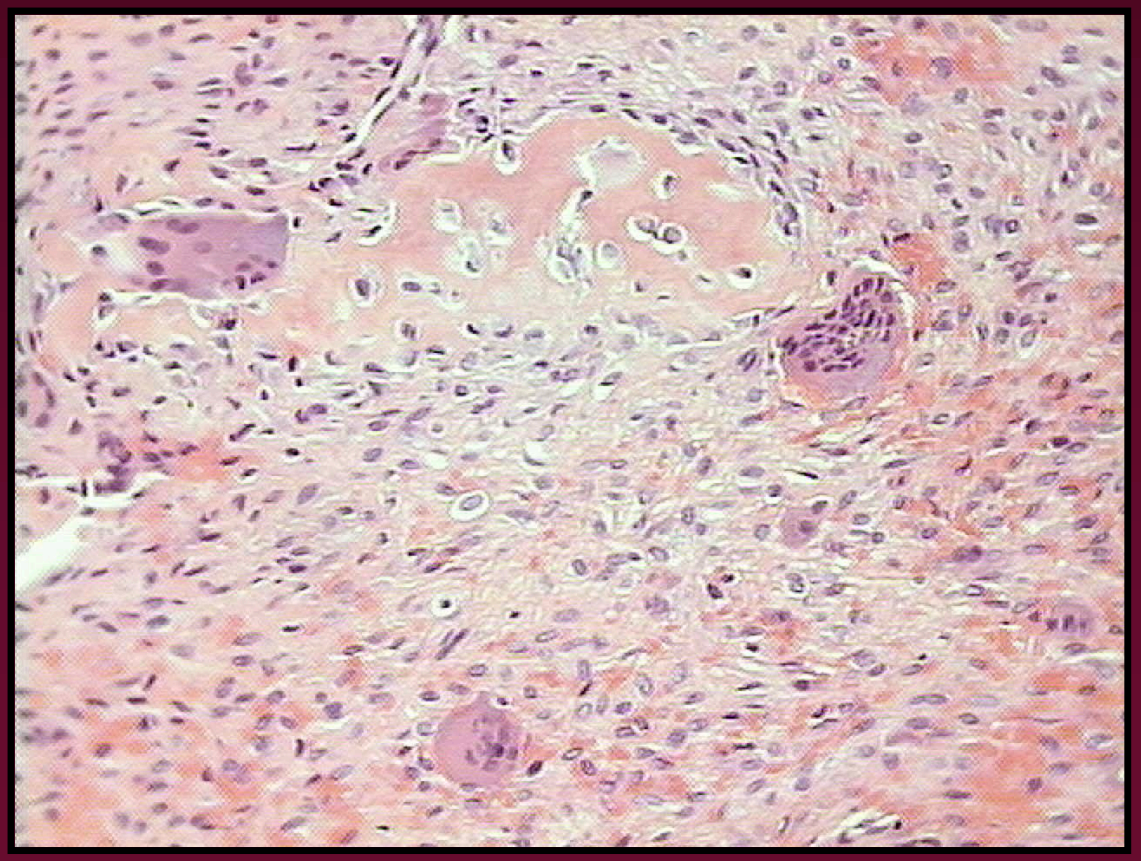
Central Giant Cell Granuloma



Brown Tumor, Hyperparathyroidism

Gross Specimen

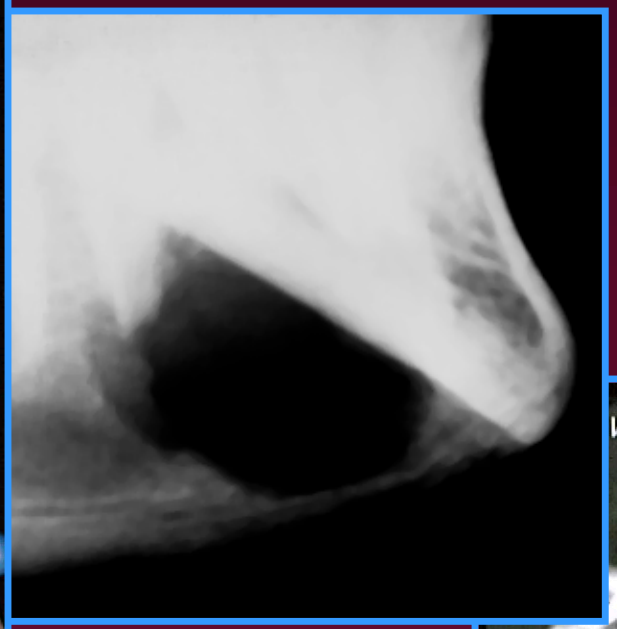
Histopathology

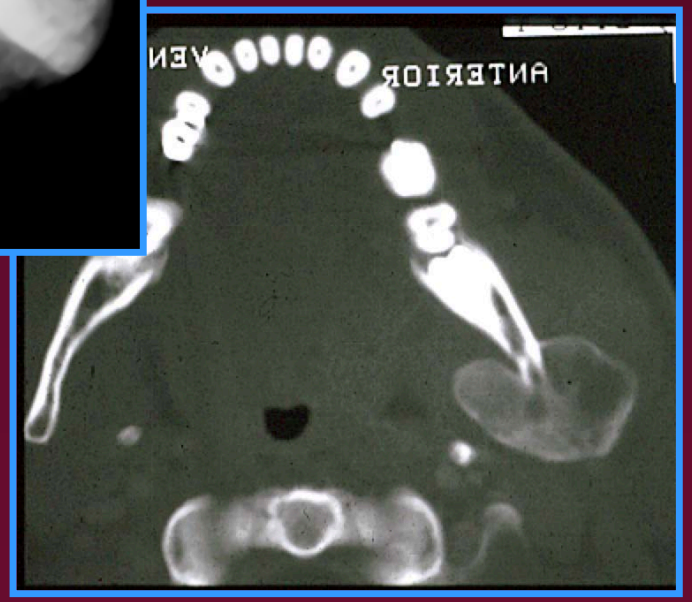


Aneurysmal Bone Cyst

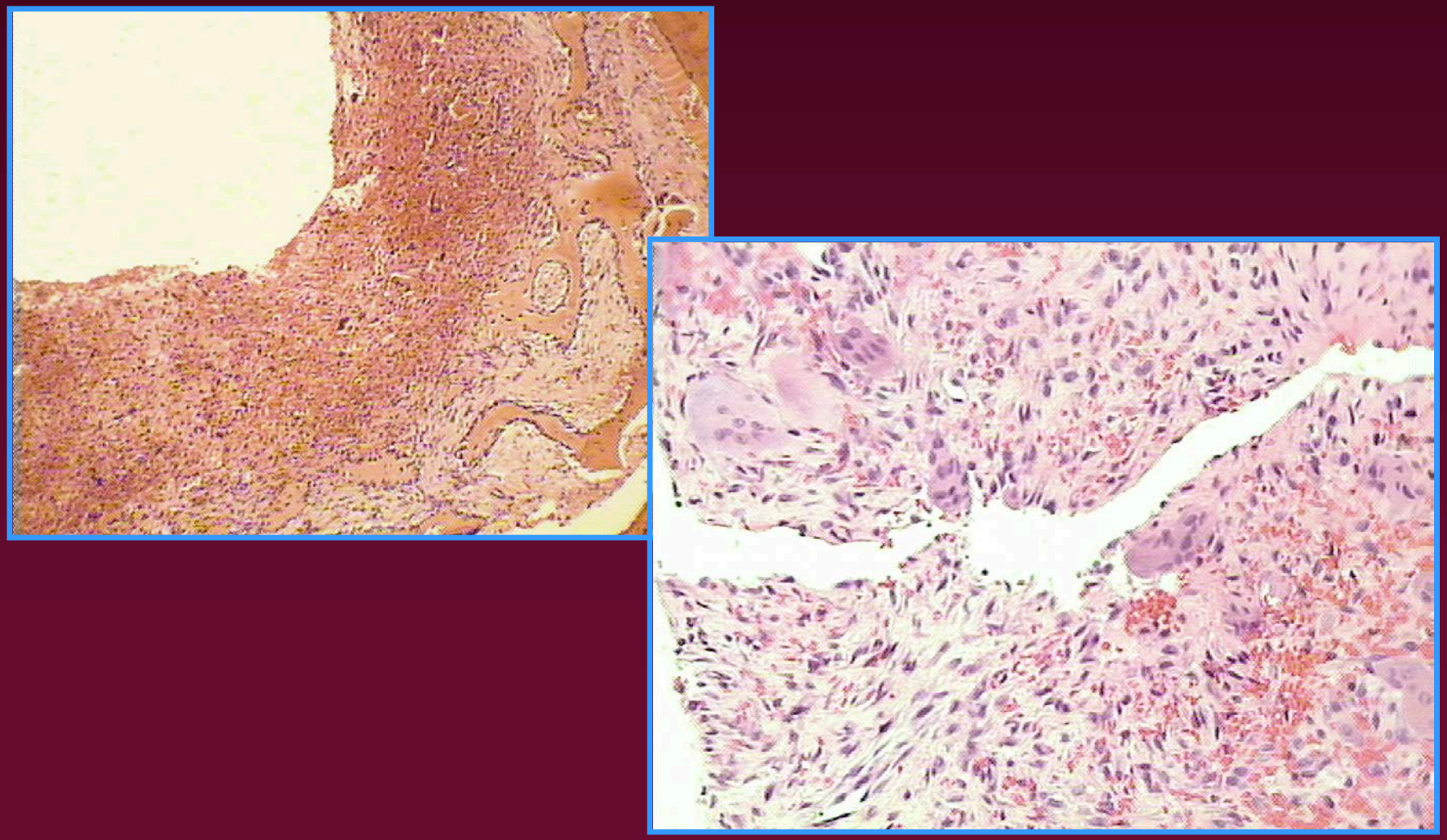
- Expansile, Balloon-like appearance
- May accompany other osteogenic and fibro-osseous lesions
- Teens, Adults
- Sinusoidal spaces under low pressure
  - Positive bloody aspirate
  - Angiography, low flow
- Giant cells are present
- Curettage

Aneurysmal Bone Cyst





Aneurysmal Bone Cyst



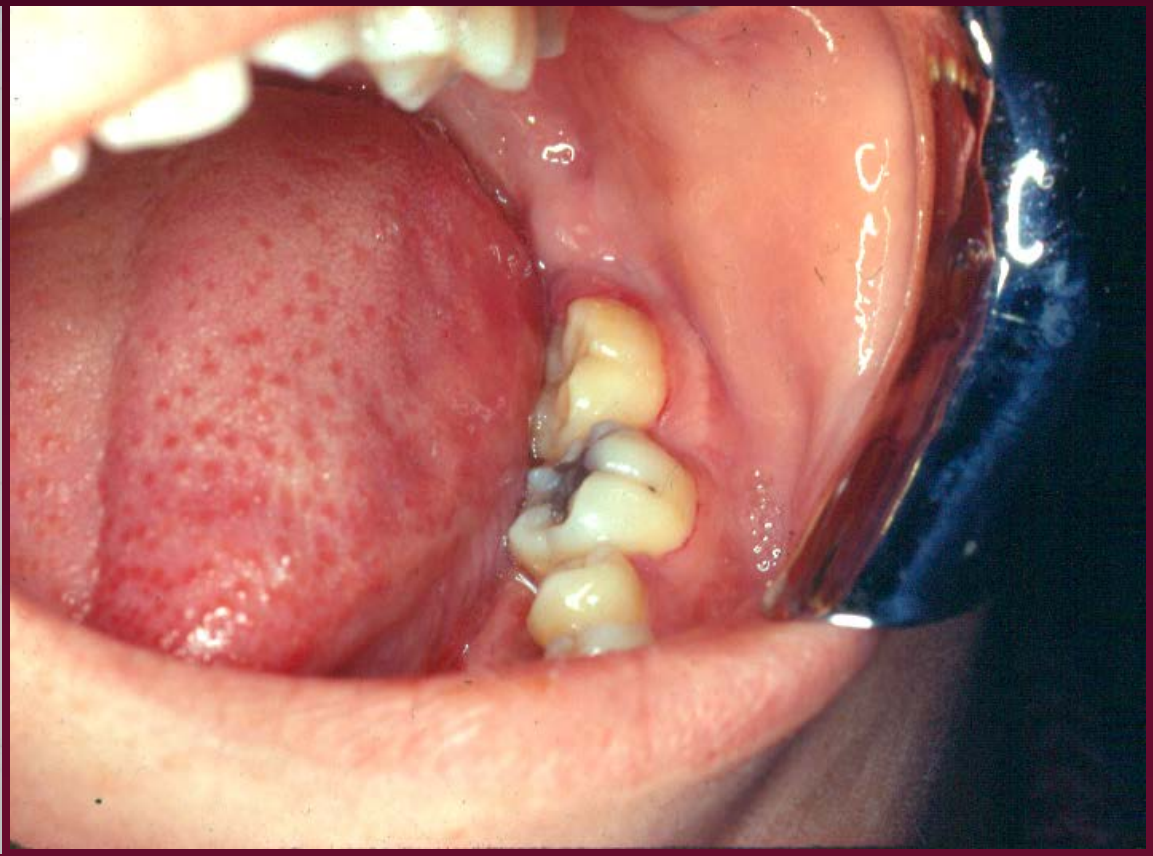
Central Arteriovenous Malformation

- Expansile, Microloculations
  - "worm-hole appearance"
- Loosening of teeth, crevicular bleeds
- Feeder vessels
  - Bilateral carotids
  - Bilateral vertebrals
- Bloody Aspirate
- Angiography, high flow
- Embolization

Arteriovenous Malformation

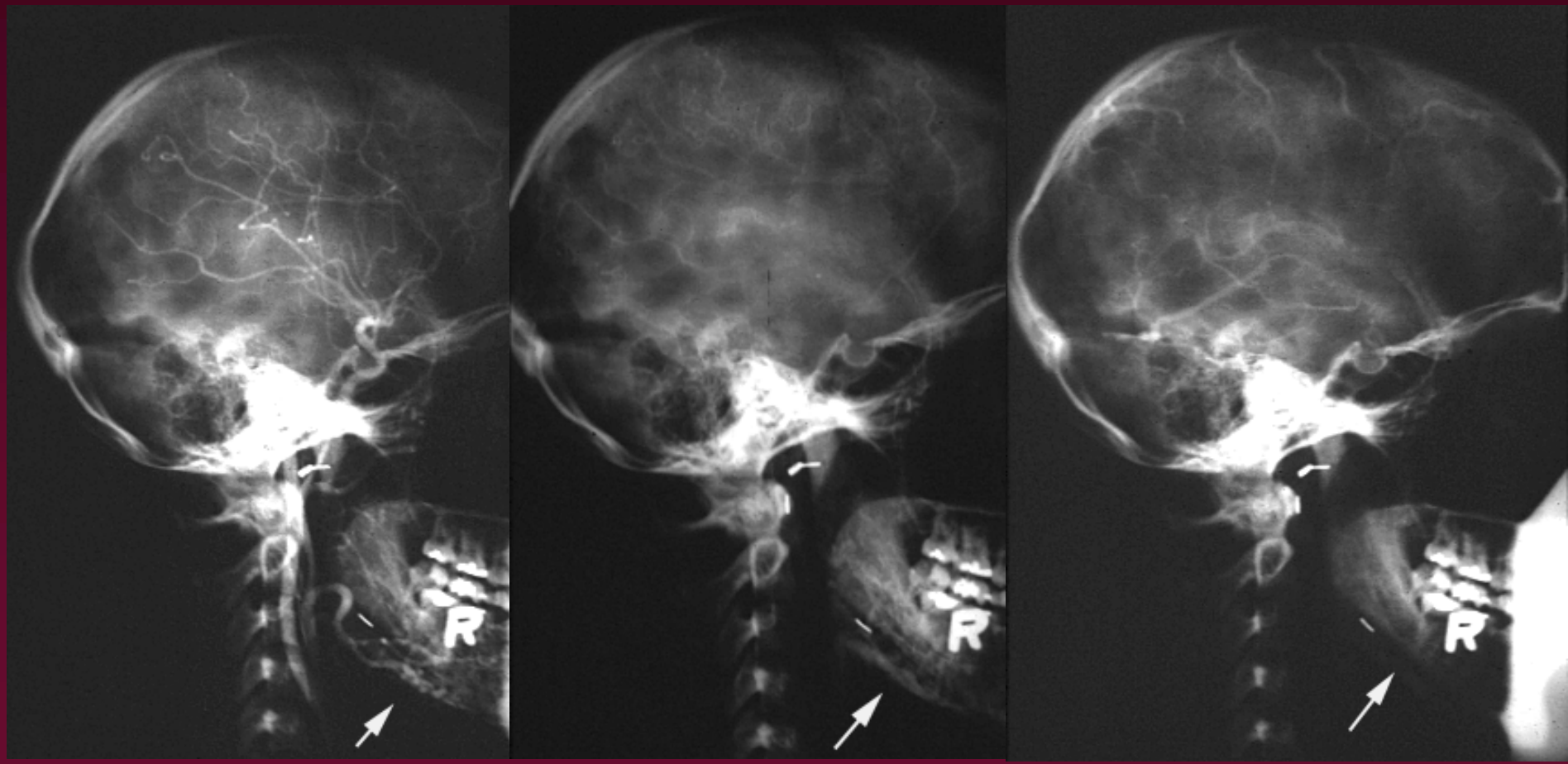
Radiograph and Angiogram

Aspiration of AV Malformation

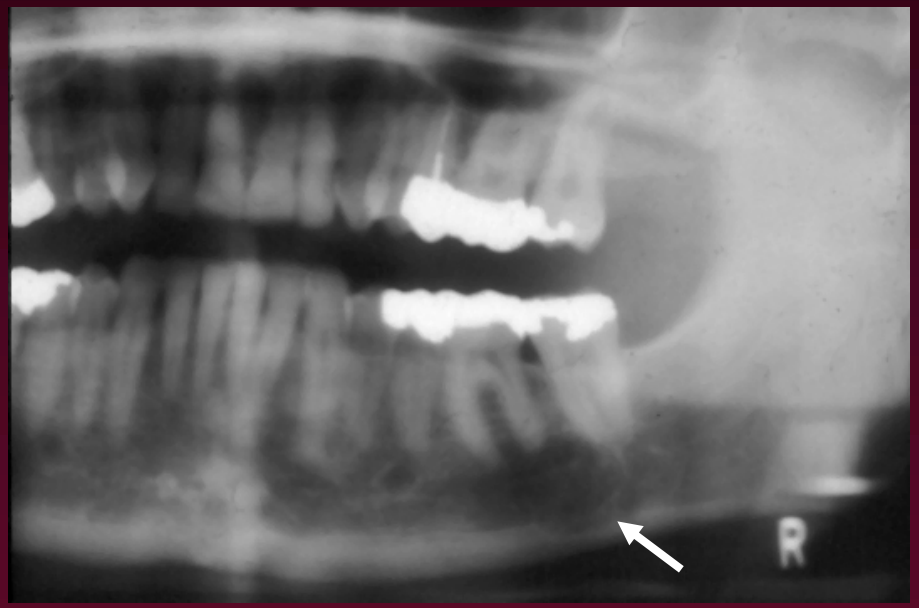


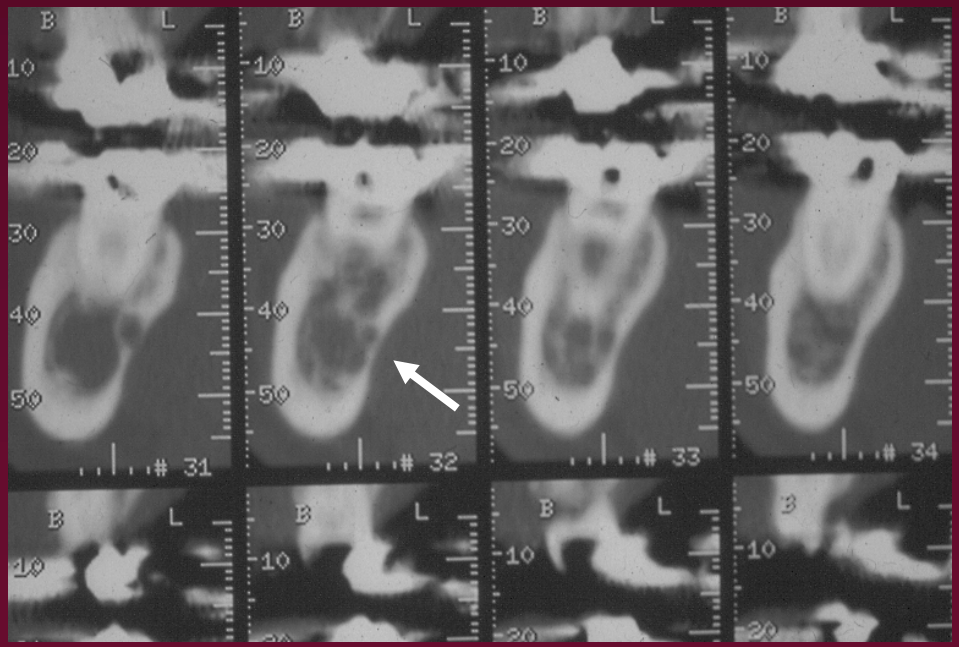
Time Lapse Angiography

Arterial Capillary Venous



Central Hemagioma(low pressure)



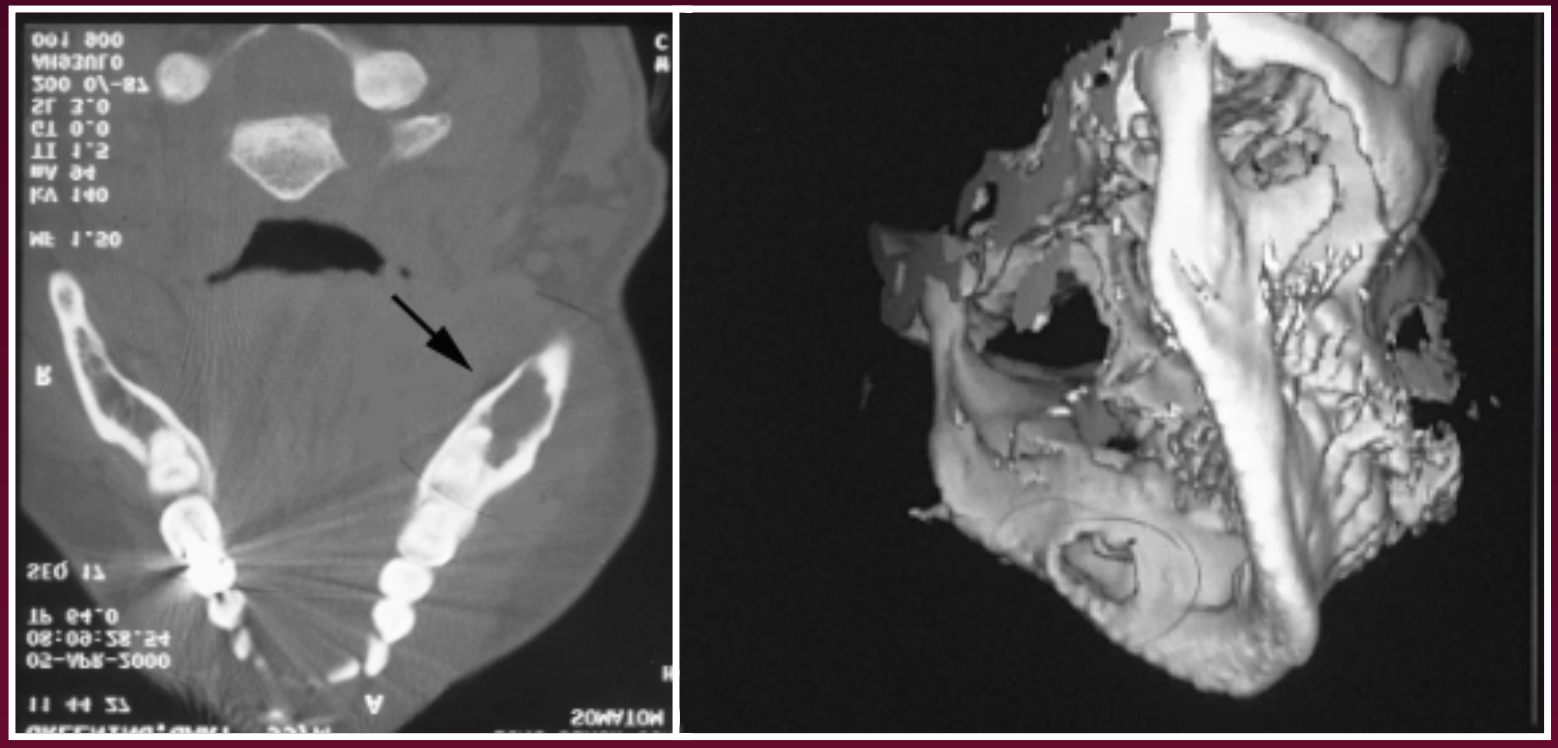


Odontogenic Myxoma

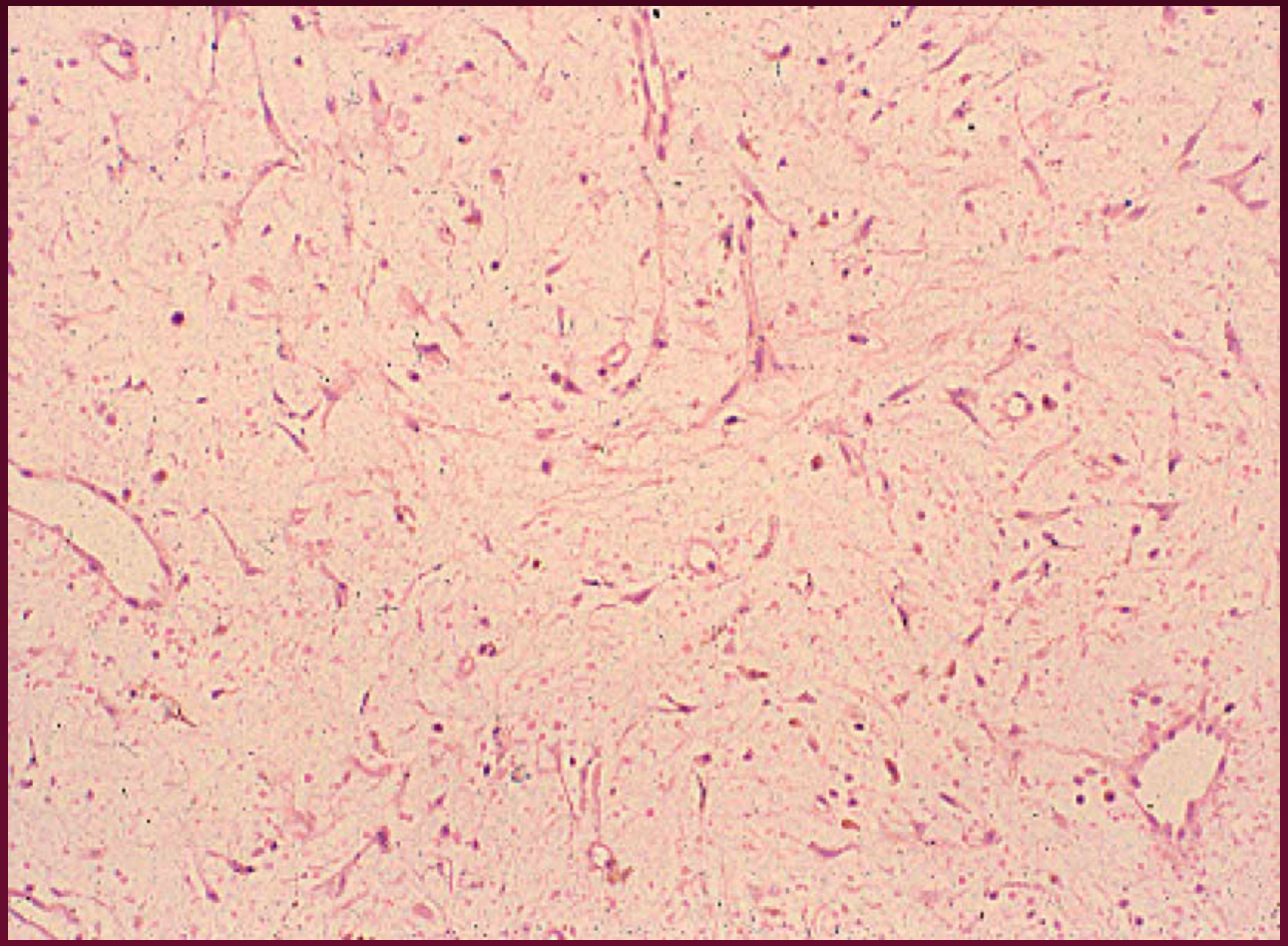
- Expansile
- Loculations: fine mesh, “icicle-like” septations
- Adults
- Mandibular body
- Connective tissue consistency
  - Mucoid – higher recurrence
  - Fibrous – lower recurrence
- Resection

Odontogenic Myxoma

Odontogenic Myxoma



Odontogenic Myxoma



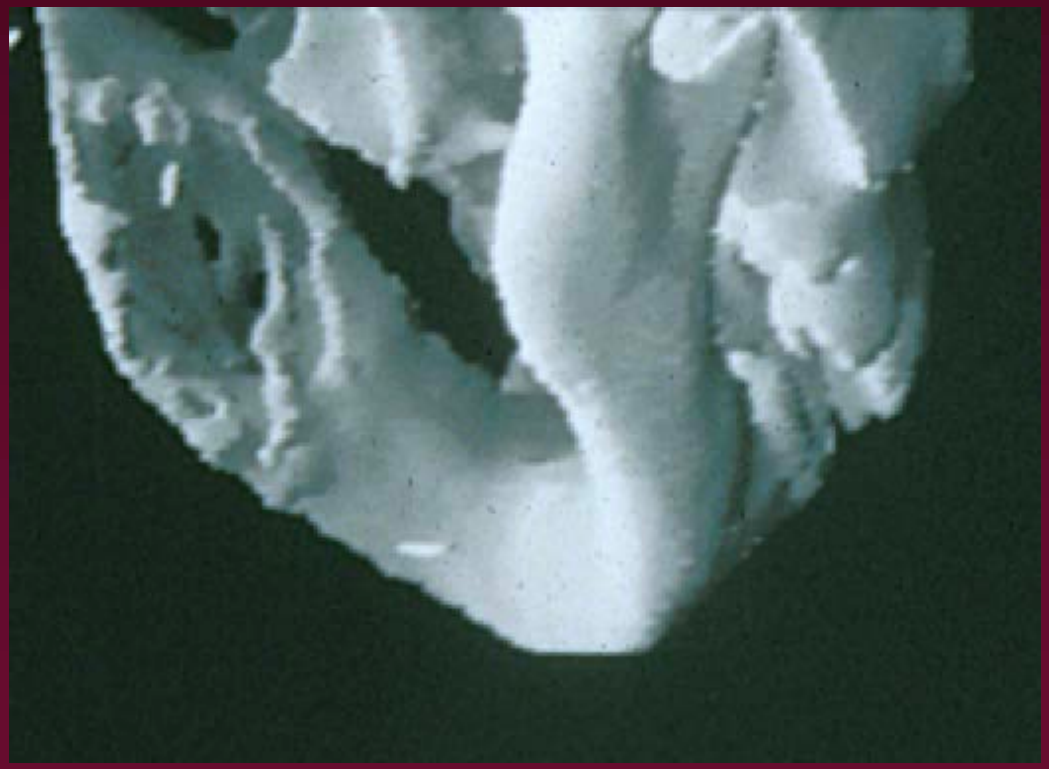
Desmoplastic Fibroma

- “Fibromatosis”, “Myofibromatosis”
- Early childhood
- Posterior Inferior Mandible
- Expansile, scalloped appearance
- Fasiculated Fibroblastic
  - IHC: smooth muscle actin
- Curettage vrs. Resection

Myofibromatosis

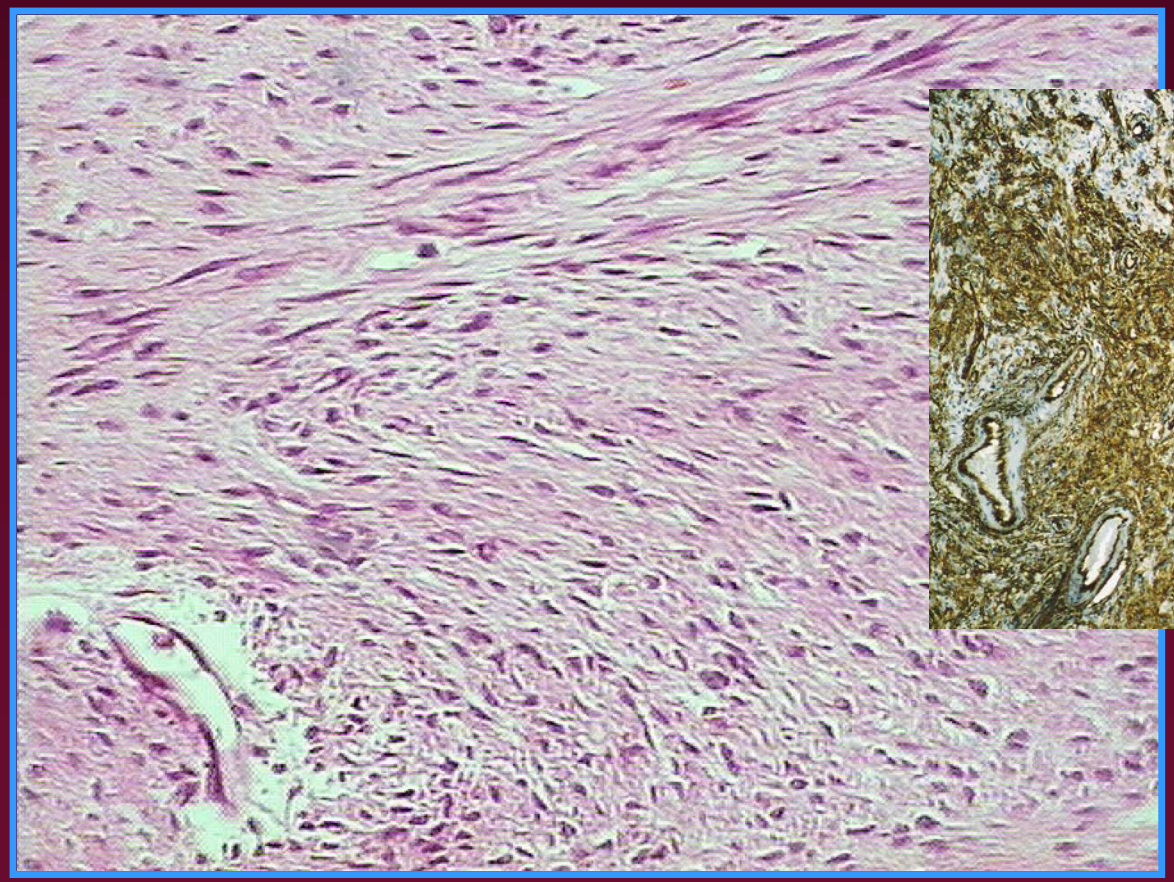
Radiographic

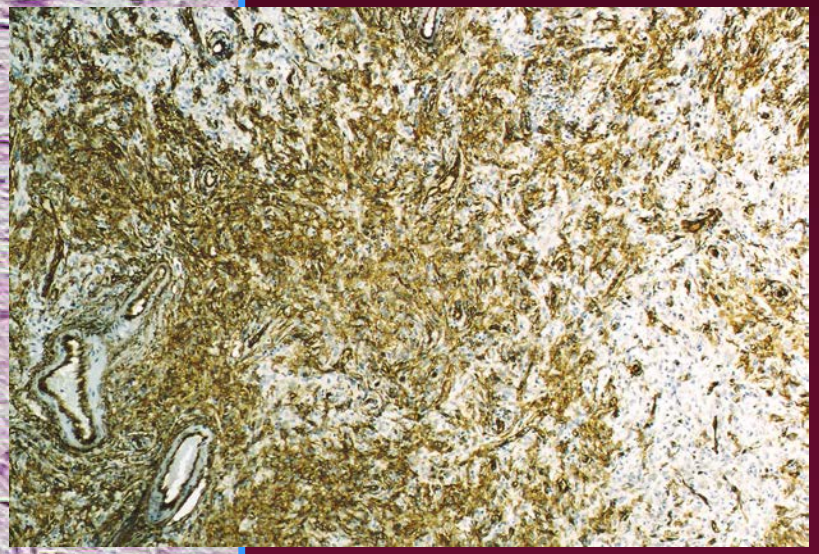
3D CT Image



Myofibromatosis

Histopathology



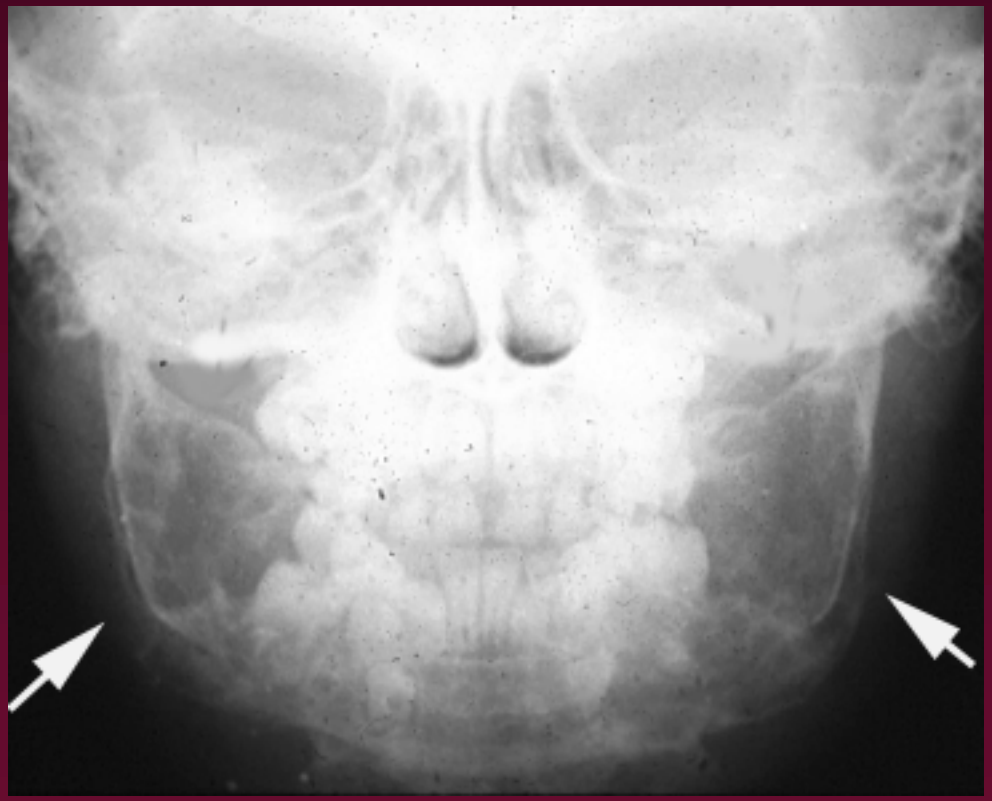


Smooth Muscle Actin

Familial Fibrous Dysplasia (Cherubism)

- Autosomal dominant
- Childhood onset
- Bilateral multilocular lucencies of body and ramus of mandible, maxilla occasionally involved
- Multiple unerupted teeth
- Treatment
  - Mild cases: none, lesions fill with mature bone
  - Severe cases: cosmetic contouring
  - Orthodontic therapy

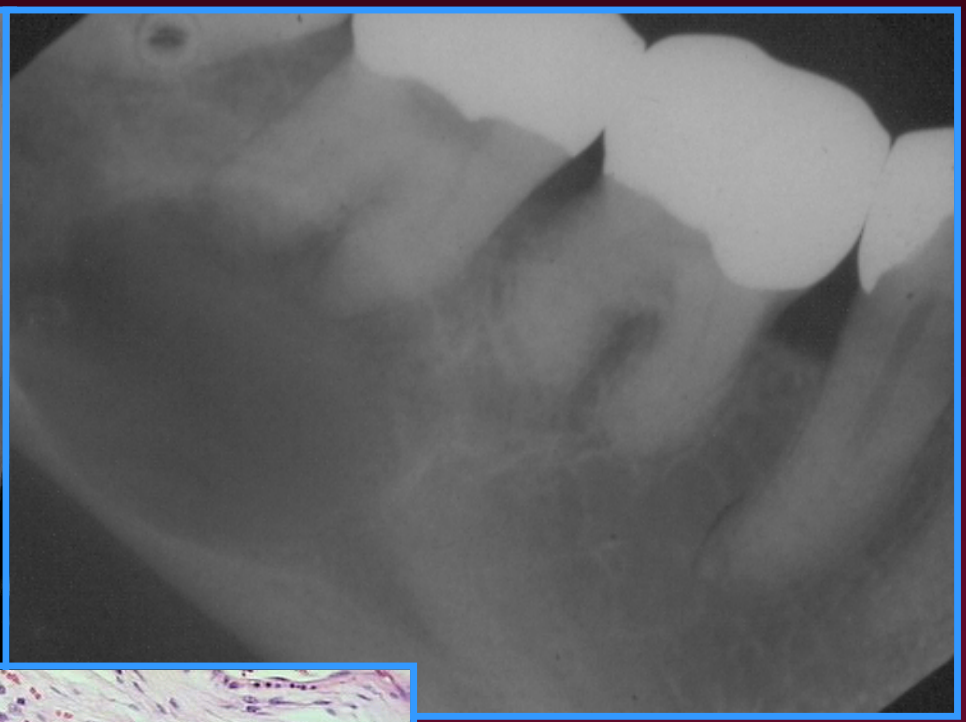
Cherubism

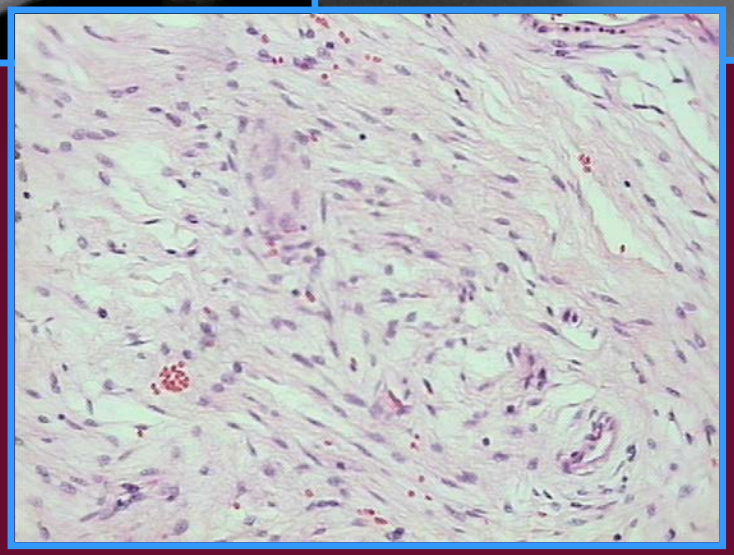


Central Neurogenous Tumors

- Most often Solitary
- Rarely component of neurofibromatosis
- Mandible, posterior body
  - Emerging from canal
- Neurilemmoma vrs. Neurofibroma
  - IHC: S100 protein (cytoplasmic & nuclear)
- Curettage
- PO hypoesthesia

Nerve Sheath Neoplasms

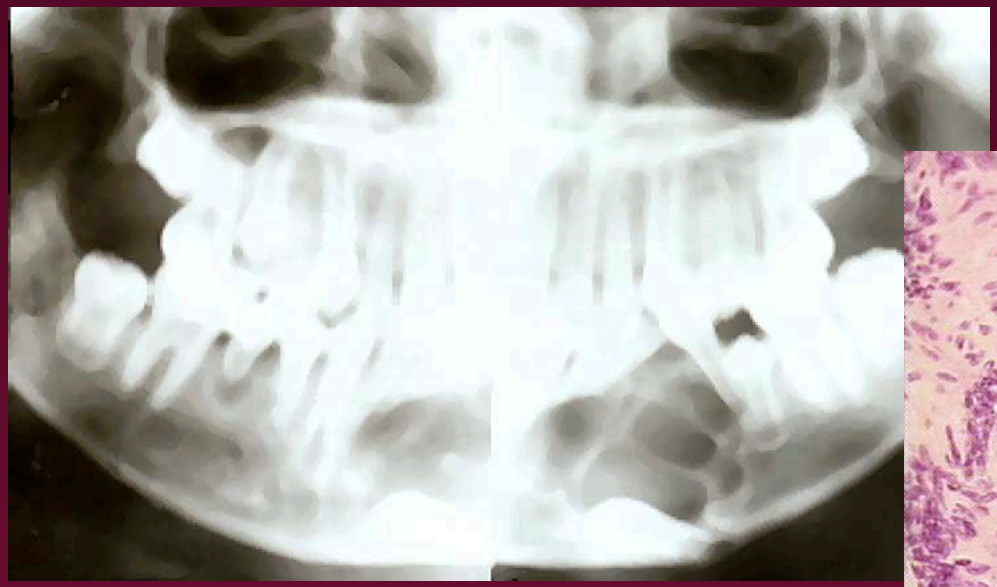




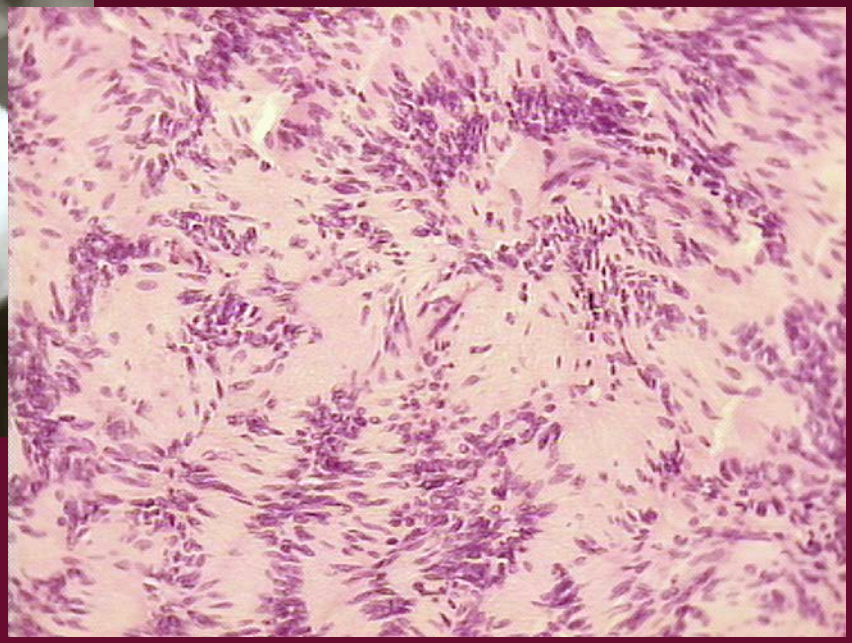
Neurofibroma

Nerve Sheath Neoplasms

Radiographic



Neurilemmoma



Thalassemia (Mediterranian Anemia)

- Genetically inherited defect with mutations in the α or β peptide chains of hemoglobin
- Slight clinical evidence of osseous expansion
- Radiolucencies in all four quadrants
  - Multiloculated
  - "icicle" septate trabeculae

Thalassemia Jaw Changes