

Financial Disclosure

- Speaker Name: Nadim M. Islam DDS, BDS
- Name of Institution: University of Florida, College of Dentistry
- Relationship to Institution: Full time faculty member

- Neither I nor members of my immediate family have any financial interests to disclose relating to the content of this presentation.

SALIVARY GLAND PATHOLOGY



Nadim M. Islam
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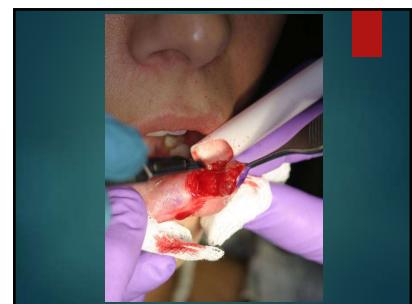
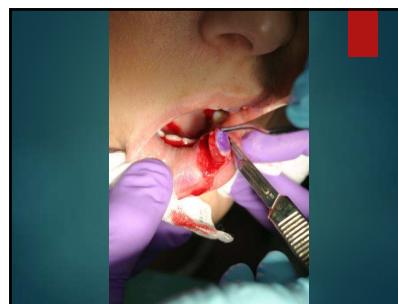
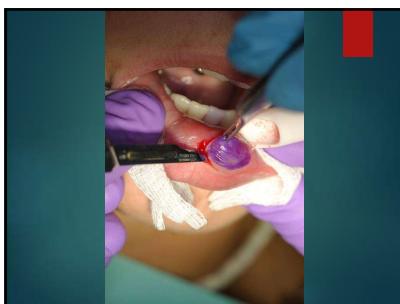
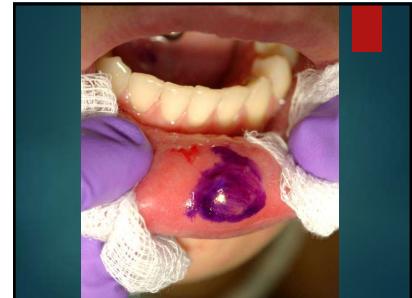
Lecture goals and objectives

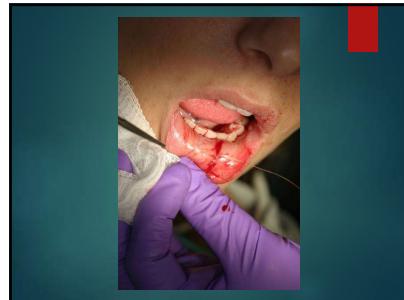
Upon completion of this course,

- The attendees will be able to clearly understand various categories of Salivary gland pathology that commonly affects the head and neck region.
- Dilemmas in diagnosis of some of the complex entities shall be discussed and clues to differentiate shall be put forth.
- Identify, rationalize, understand and build a rational diagnostic differential will be the bottom line.
- The alert pathologist shall be able to enhance their knowledge as to the approach when facing a specifically challenging case or lesion.
- A very open ended discussion based on experiences and practical knowledge sharing will be the main essence of this presentation.

MUCOCELE

- Mucus extravasation phenomenon/ mucus escape reaction
- Rupture of duct-
 - Common lesion due to spillage of mucin
 - Often result of local trauma/ no trauma sometimes
- Not a true cyst: no epithelial lining (unlike salivary duct cyst)
- Dome-shaped: 1-2 mm to several cms
- Most common: children, young adults
- Reported in all ages





INTERESTING CASE

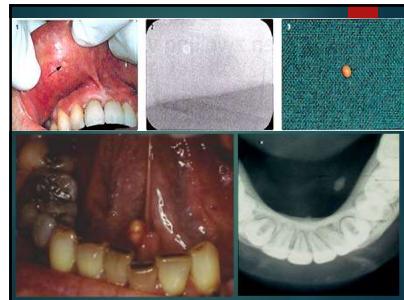
- ▶ An 88 Year old Caucasian/white female presented to the oral surgeon with a lip lesion. First biopsy was proven to be sialadenitis. After 3 months a mucocle - like lesion was noted.
- ▶ Excisional biopsy was performed.



►DX MERKEL CELL CARCINOMA

SIALOLITHIASIS

- ▶ Calcified structures within salivary ducts
- ▶ Build-up of Ca++ around a nidus of debris
- ▶ Debris: inspissated mucus, bacteria, ep cells, or foreign bodies
- ▶ Most common in the submandibular, less in parotid
 - ▶ Long, tortuous path of the Wharton's duct
 - ▶ Thicker, mucoid secretions of the gland
- ▶ Present with **episodic pain or swelling of the affected gland, especially at mealtime & Radiopacity**



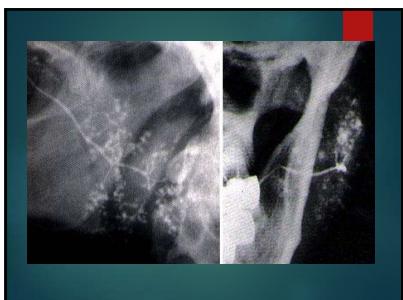
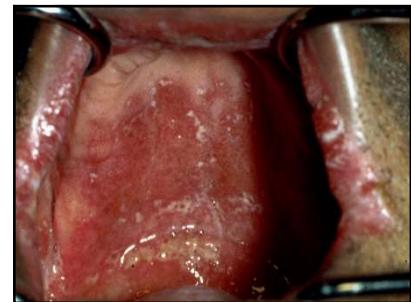


SJÖGREN'S SYNDROME

- ▶ Chronic, systemic autoimmune disorder
 - ▶ Salivary gland-xerostomia (dry mouth)
 - ▶ Lacrimal glands -xerophthalmia (dry eyes)
- ▶ Eye effects - keratoconjunctivitis sicca (sicca=dry)
- ▶ Xerostomia & xerophthalmia - sicca syndrome - primary sjögren
- ▶ With Rh arthritis, scleroderma, SLE- Secondary Sjögren Syndrome

SJOGREN'S SYNDROME

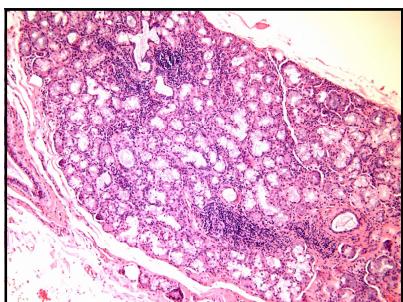
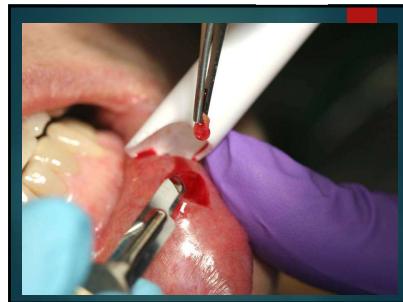
- ▶ +ve schirmer test (<5mm wetting /5min of sterile absorbent paper strips)
 - ▶ SAN-DIEGO CRITERIA
- ▶ Increased levels of IgG
- ▶ +ve -Rheumatoid factor, 60% cases
- ▶ 75-85% cases have, two nuclear autoantibodies - anti-SS-A & anti-SS-B, in primary sjögren's
- ▶ Anti Ro & anti La



Lip Biopsy

- Purpose
 - Evaluate for Sjögren's syndrome
 - Harvest 5/more minor salivary glands (>4mm²)
 - Biopsy of the minor SG of lower lip
- Lymphocytic infiltration of the glands with destruction (1 or > focus of 50/more lymphocytes, plasma cells)
- ▶ **Labial salivary gland biopsies in Sjögren's syndrome: still the gold standard?** *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2008 Sep;106(3):592-602. Epub 2008 Jul 7. Stewart CM, Bhattacharya I, Berg K, Cohen DM, Orlando G, Drew P, [Suman NH](#), Ojha J, Reeves W.





TYPICAL SJOGREN SIGNOUT

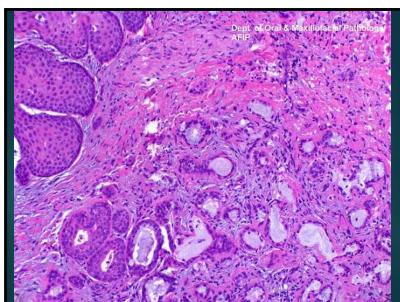
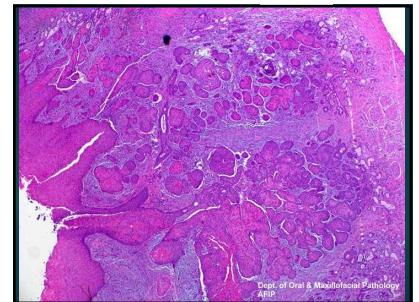
- ▶ MULTIFOCAL (>2) PLASMACYTIC/LYMPHOCYTIC SIALADENITIS SUPPORTIVE OF SJOGREN'S SYNDROME

COMMENTS:

- ▶ The accessory salivary gland lobules (>5 in number) fulfilled the minimum criteria of greater than 4 sqmm area.
- ▶ The histologic confirmation of Sjögren's syndrome has its limitation and the diagnostic value of minor salivary gland biopsy is achieved in about 70% of the cases. In such cases however, other clinical and laboratory parameters should be taken into consideration to confirm the final diagnosis.

NECROTIZING SIALOMETAPLASIA

- ▶ Uncommon, locally destructive inflammatory condition
- ▶ Results from ischemia leading to infarction
- ▶ Mimics SCCa both clinically and microscopically
- ▶ Most frequent in the palate >75% posterior



SALIVARY GLAND TUMORS

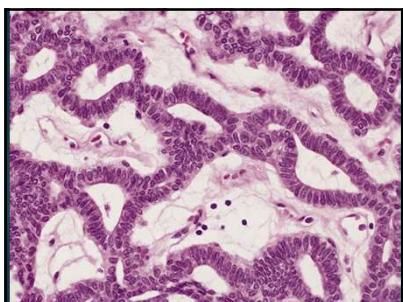
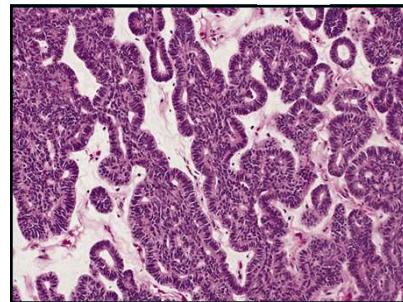
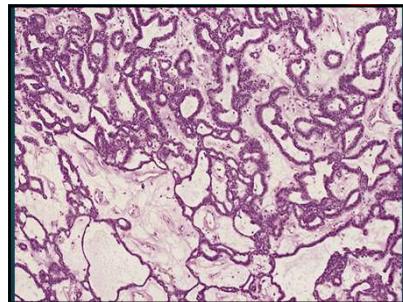
- ▶ Uncommon but not rare
- ▶ Most common site - parotid 64-80%
- ▶ Overall 2/3rds to 3/4ths of all tumors
- ▶ 2/3rds to 3/4ths benign
- ▶ 8-11% in submandibular gland, but malignancy almost double 37-43%
- ▶ Sublingual gland tumors rare but 70-90% malignant

MINOR SALIVARY GLAND TUMORS

- ▶ 9 to 23%
- ▶ Second most common site
- ▶ Almost 50% malignant
- ▶ ***"Smaller the gland, the greater the chances of malignancy"***
- ▶ Palate - most frequent site (42 to 54%)
- ▶ Most on the posterior lateral hard or soft palate
- ▶ Lips- second most common

MONOMORPHIC ADENOMA

- ▶ Canalicular Adenoma
 - Almost exclusively in minor SG
 - Striking predilection for upper lip (>75%)
 - Nearly always occurs in older adults
 - Slowly growing, painless mass
- ▶ 50+ years old
- ▶ Bilayered ribbons of columnar cells with vascularized stroma
- ▶ Basaloid cells
- ▶ Cystic change, vascular stroma



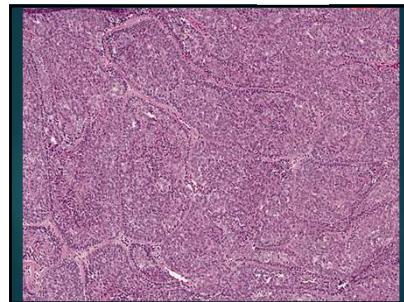
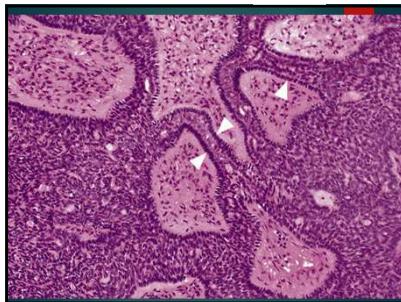
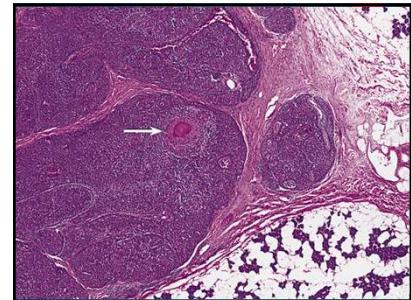
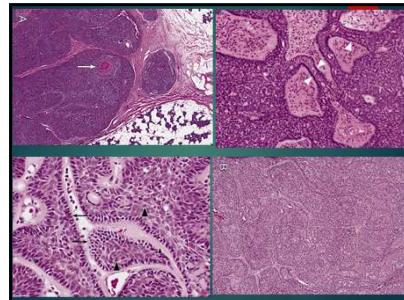
Basal Cell Adenoma

- ▶ Basaloid appearance of the tumor cells
- ▶ Primarily parotid lesion
- ▶ 2% of all salivary tumors
- ▶ F > M, adults
- ▶ Encapsulated, cystic
- ▶ Tx: Local excision
- ▶ DDX: Basal cell adenocarcinoma, adenoid cystic carcinoma, pleomorphic adenoma



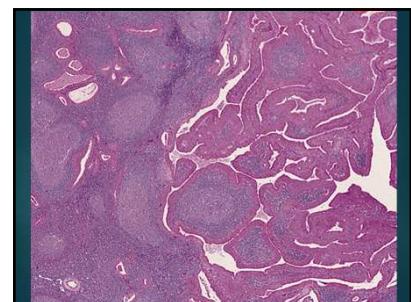
Basal Cell Adenoma

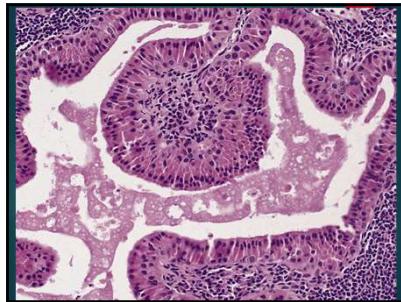
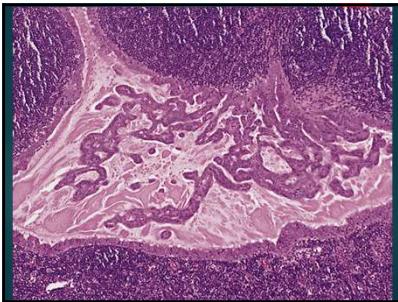
- ▶ Peripheral palisading (i.e. basaloid)
- ▶ Fibrous stroma
- ▶ Acinar cells, squamous whorls and keratinization
- ▶ No myoepithelial component (by histology), myxoid matrix, or cribriform pattern



WARTHIN'S TUMOR-PAPILLARY CYSTADENOMA LYMPHOMATOSUM

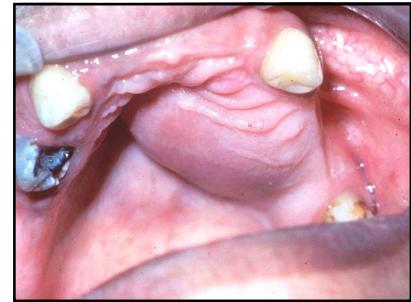
- ▶ Benign neoplasm almost exclusively parotid
- ▶ Smokers - 8 X risk than nonsmokers
- ▶ Slow growing, painless, nodular mass
- ▶ Unique -tendency to occur bilaterally
- ▶ Male predilection
- ▶ Although the name is cumbersome, it accurately describes microscopic features

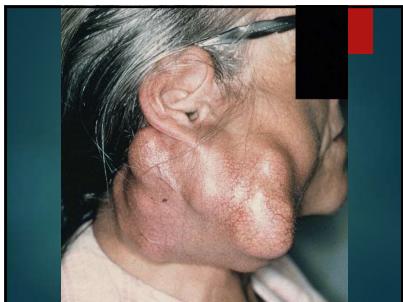




PLEOMORPHIC ADENOMA

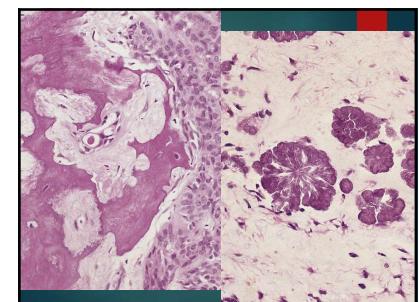
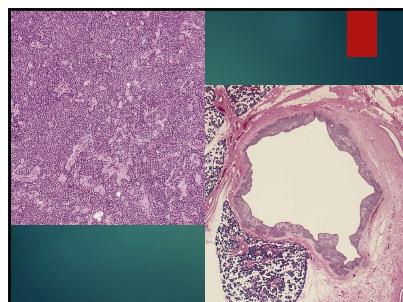
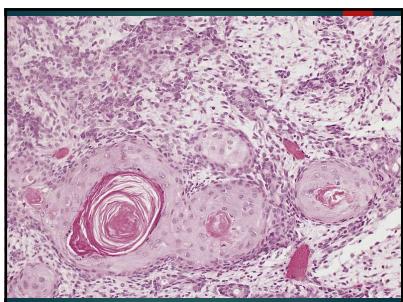
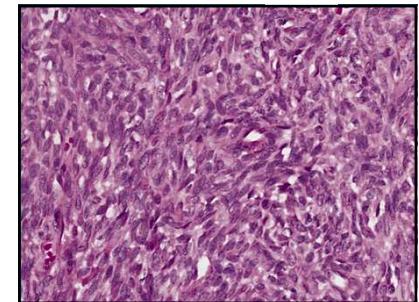
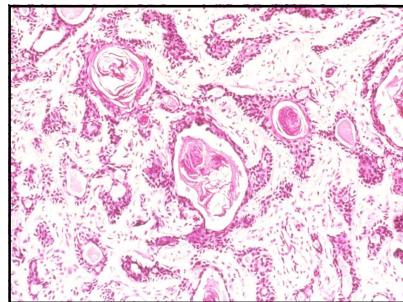
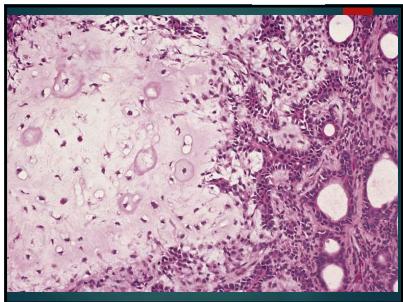
- Benign Mixed Tumor
- Most common salivary neoplasm
- 2/3rds to 3/4ths of parotid tumors
- Painless, slowly growing, firm mass
- Young adults 30 to 50
- Slight female predilection
- Best treated by surgical excision
- Malignant degeneration possible in long standing lesions - about 5%

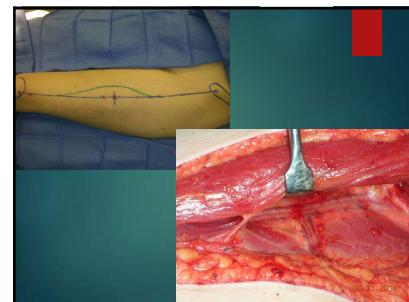
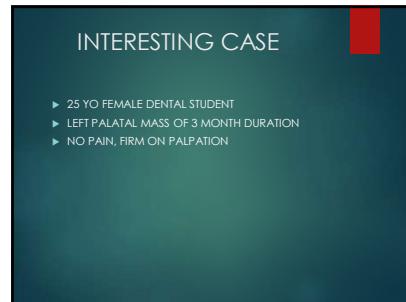
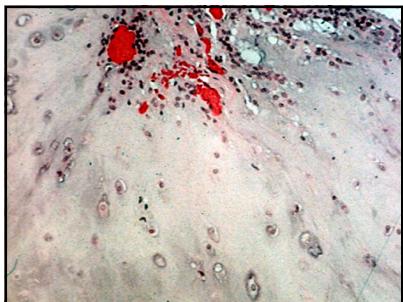




Histologic Features

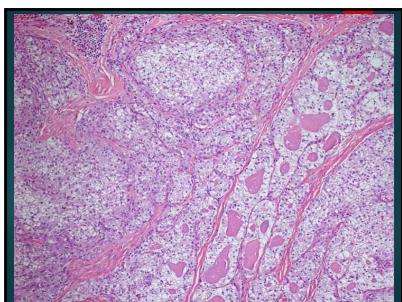
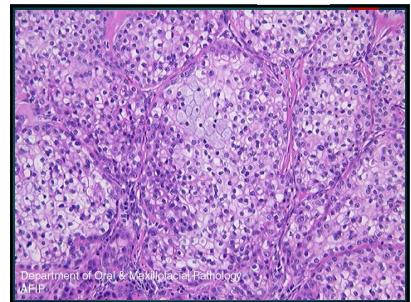
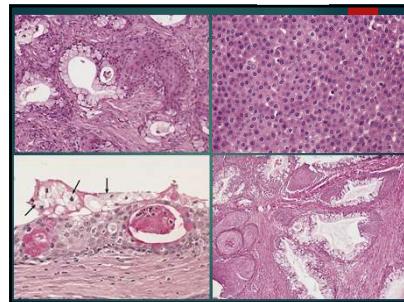
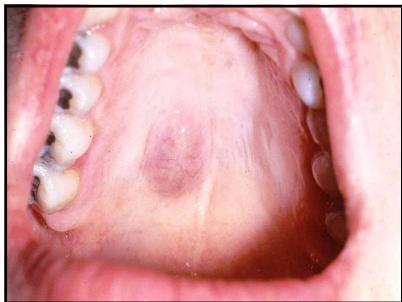
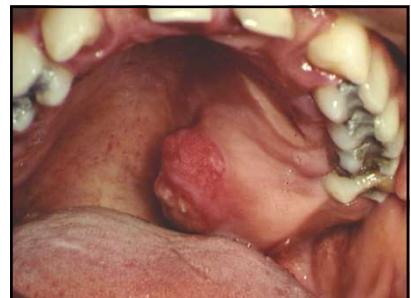
- Highly variable pattern
- Epithelial and mesenchymal differentiation
- Tongue like protrusions/hobnailing into adjacent gland
- No mitoses, necrosis

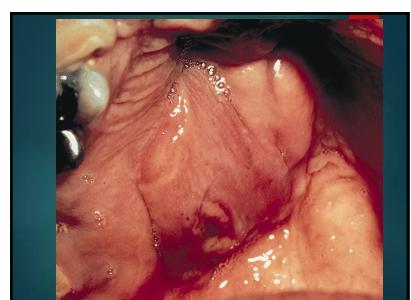
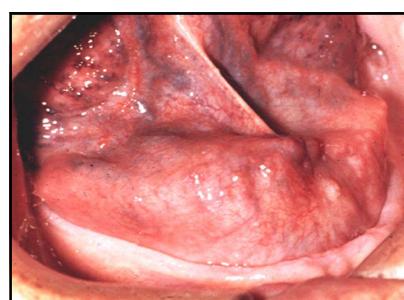
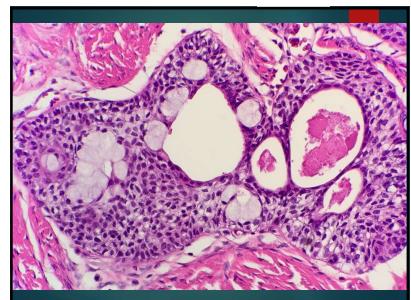
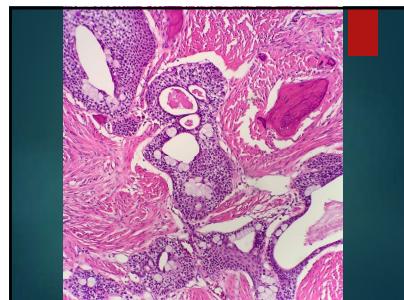
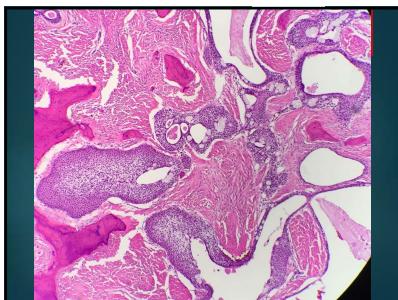
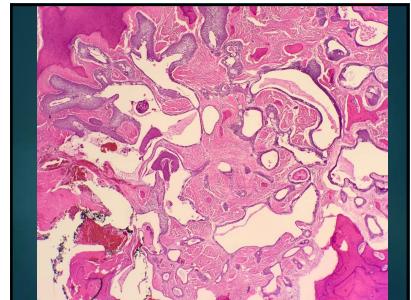
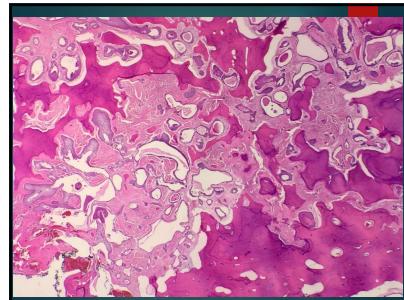
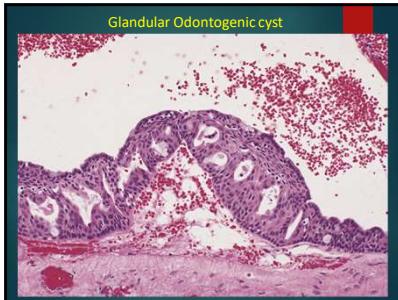


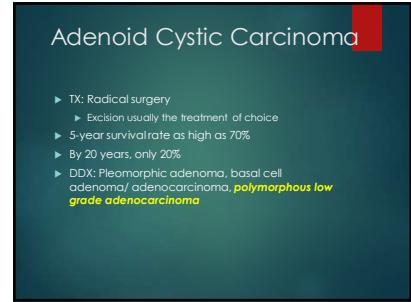
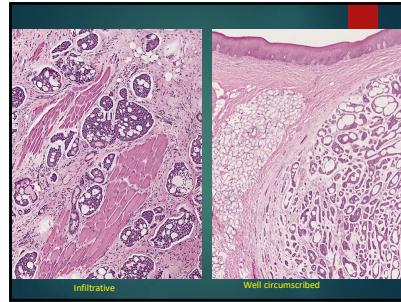
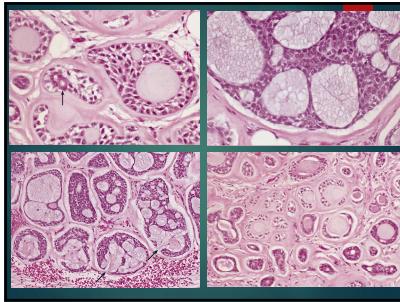
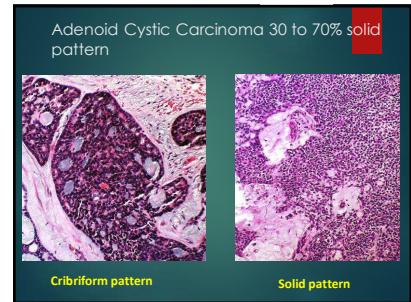
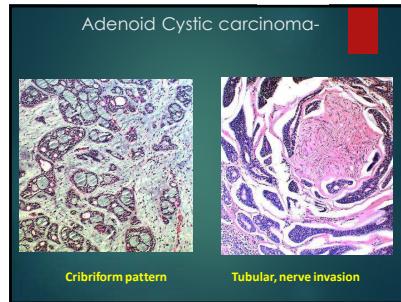


DX-MUCOEPIDERMOID CARCINOMA

- Most common SG malignancy
- Most common malignant SG tumor in children
- Most common in parotid
- Minor SG – palate 2nd
- Minor gland - asymptomatic fluctuant swellings blue or red
- May arise within jaws from odontogenic ep of dentigerous cysts
 - More common in the mandible than maxilla
 - Molar-ramus area
- Overall prognosis is fairly good
- 10% of patients die, due to local recurrence





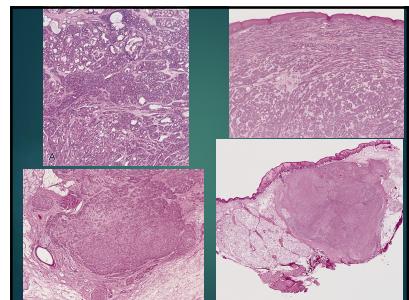
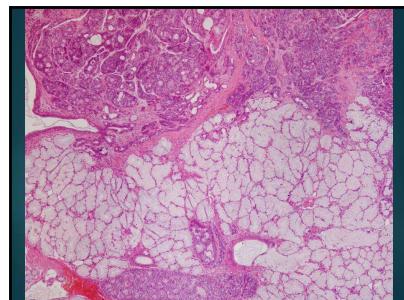


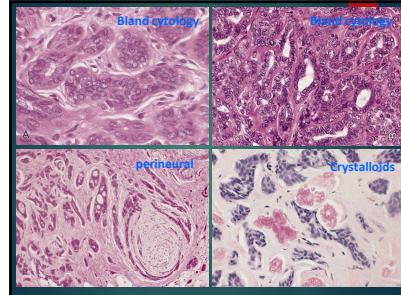
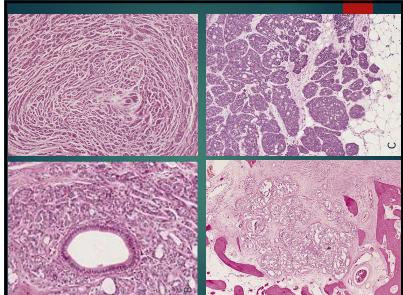
**POLYMORPHOUS (LOW GRADE)
ADENOCARCINOMA**

- ▶ Relatively recently recognized - 1983
- ▶ Almost exclusively in the minor SG
- ▶ 60% on the hard or soft palate
- ▶ 2/3rds in females
- ▶ Tumor cells have deceptively uniform appearance

**POLYMORPHOUS (LOW GRADE)
ADENOCARCINOMA**

- ▶ Different growth patterns hence, "polymorphous"
- ▶ Perineural invasion common
- ▶ Wide surgical excision
- ▶ 12-30% recur, 10-15% metastasis (regional)
- ▶ Overall prognosis relatively good, with 80% cure rate





Frequency Of Salivary Gland Tumors By Location

- ▶ Palate
 - ▶ Pleomorphic adenoma
 - ▶ Adenoid cystic ca
 - ▶ Mucoepidermoid ca
 - ▶ PLGA
 - ▶ Monomorphic adenoma
- ▶ Parotid
 - ▶ Pleomorphic adenoma
 - ▶ Warthin's tumor
 - ▶ Basal cell adenoma
 - ▶ Mucoepidermoid ca
 - ▶ Acinic cell ca
 - ▶ Adenoid cystic ca
 - ▶ Ca ex mixed tumor

Frequency Of Salivary Gland Lesions By Location

- | | |
|-----------------------|-----------------------|
| ▶ Upper Lip | ▶ Lower Lip |
| ▶ Canicular Adenoma | ▶ Mucocelle |
| ▶ Salivary Duct Cyst | ▶ Mucoepidermoid Ca |
| ▶ Pleomorphic Adenoma | ▶ Pleomorphic Adenoma |