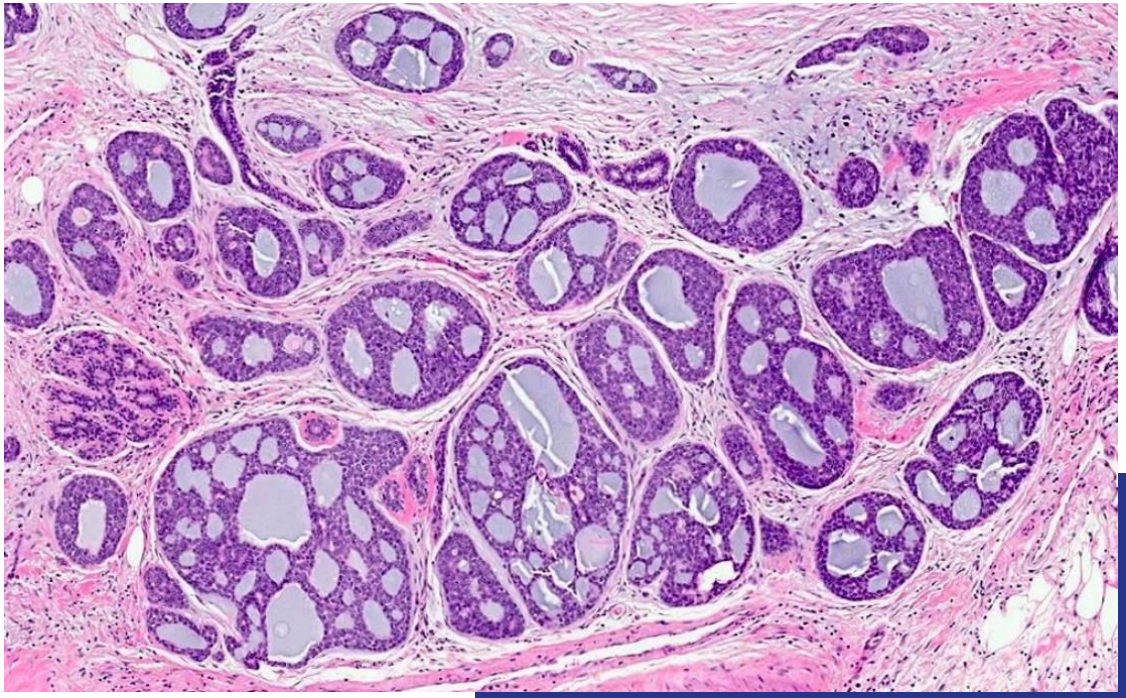


THE UNIVERSITY OF WESTERN AUSTRALIA

Oral Pathology module

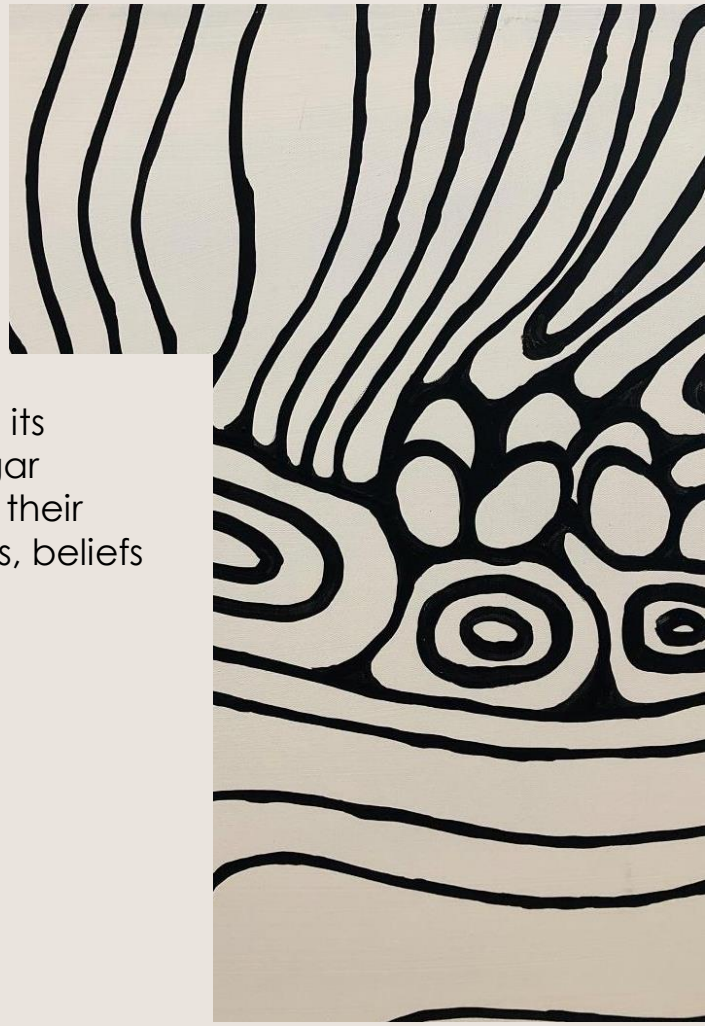
Salivary gland diseases

A/Prof Omar Kujan

BDS DipOPath MDSc MFDS RCPS FHEA FRCPath PhD

Acknowledgement
of country

The University of Western Australia acknowledges that its campus is situated on Noongar land, and that Noongar people remain the spiritual and cultural custodians of their land, and continue to practise their values, languages, beliefs and knowledge.



Artist: Dr Richard Barry Walley OAM

Learning outcomes

1. Learn salivary gland disorders, benign and malignant neoplasms

CLASSIFICATION OF SALIVARY GLAND DISEASES

A.DEVELOPMENTAL

- Congenital aplasia/agenesis
- Congenital hypoplasia
- Atresia
- Aberrance / ectopic gland
- Diverticuli
- Accessory duct
- Congenital fistula

B.INFLAMMATORY

- ACUTE OR CHRONIC

STAPHYLOCOCCAL

STREPTOCOCCAL

ACTINOMYCOSIS

TUBERCULOSIS

- VIRAL INFECTION

MUMPS

CYTOMEGALO VIRUS INFECTION

PARAINFLUENZA

- SARCOIDOSIS
- MELKERSON-ROSENTHAL SYNDROME
- ALLERGY
- SALIVARY FISTULA
- POST IRRADIATION TO ORAL TUMOUR

C.SIALOLITHIASIS

- **DUE TO STRICTURE OF DUCT**
- **DUE TO TRAUMA OR INFECTION**
- **DUE TO SALIVARY STONE**
- **MUCOUS PLUG**

D.CYSTS

- **MUCOCELE**
- **RANULA**
- **LYMPHO EPITHELIAL CYST**
- **BRANCHIAL CYST**

E. F.SIALADENOSIS

G.SJOGRENS SYNDROME

I.NEOPLASMS

BENIGN EPITHELIAL

- ADENOMA
- ONCOCYTOMA
- WARTHINS TUMOUR
- PLEOMORPHIC ADENOMA

MALIGNANT EPITHELIAL

- ADENOCARCINOMA
- MUCOEPIDERMOID CARCINOMA
- ADENOCYSTIC CARCINOMA
- ACINIC CELL CARCINOMA
- MALIGNANT PLEOMORPHIC ADENOMA

- BENIGN MESENCHYMAL

HEMANGIOMA

LYMPHANGIOMA

NEUROFIBROMA

SCHWANNOMA

LIPOMA

- MALIGNANT MESENCHYMAL

RHABDOMYOSARCOMA

HEMANGIOENDOTHELIOMA

- OTHERS

LYMPHOMA-HODGKINS & NON HODGKINS

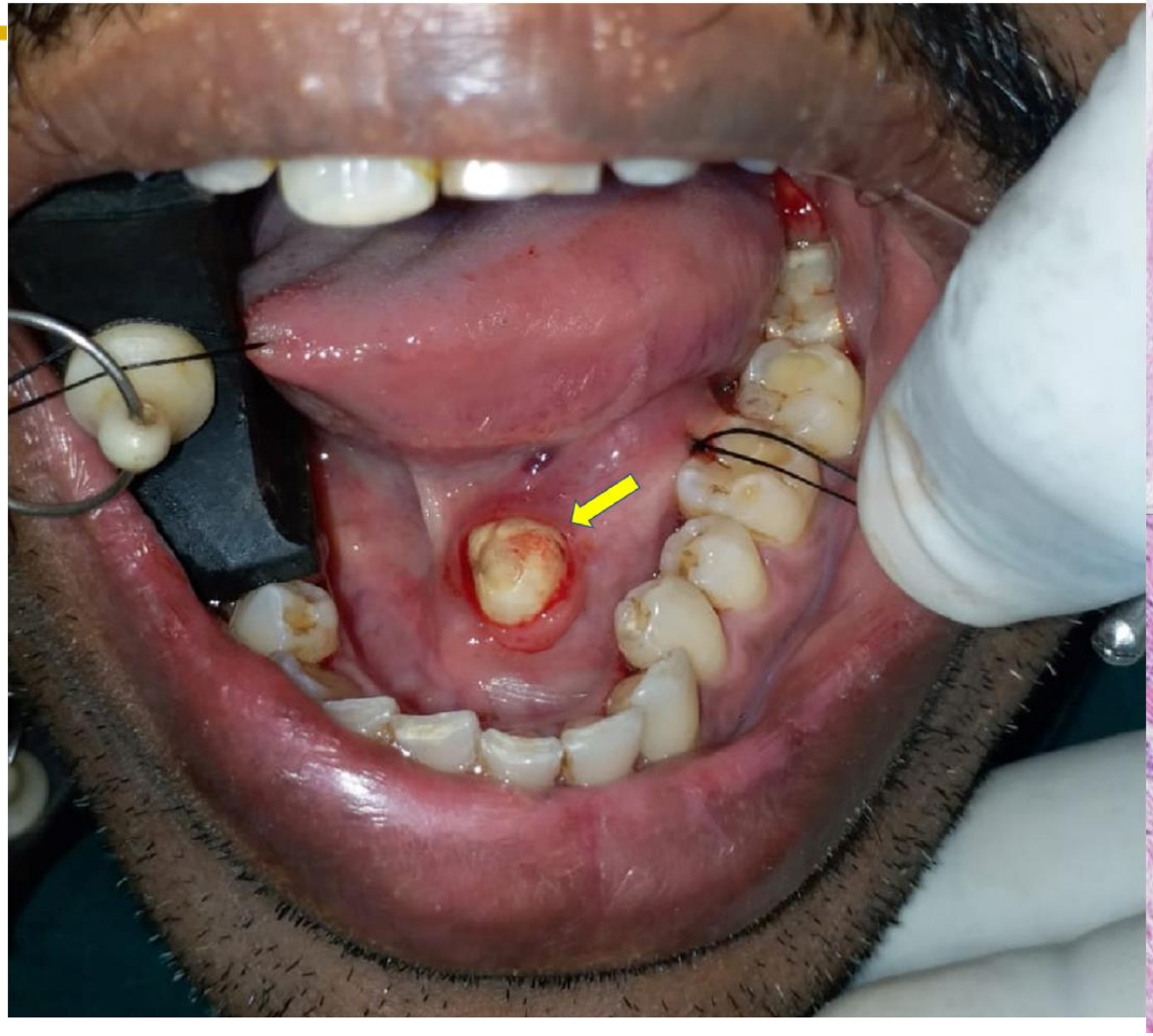
METASTATIC

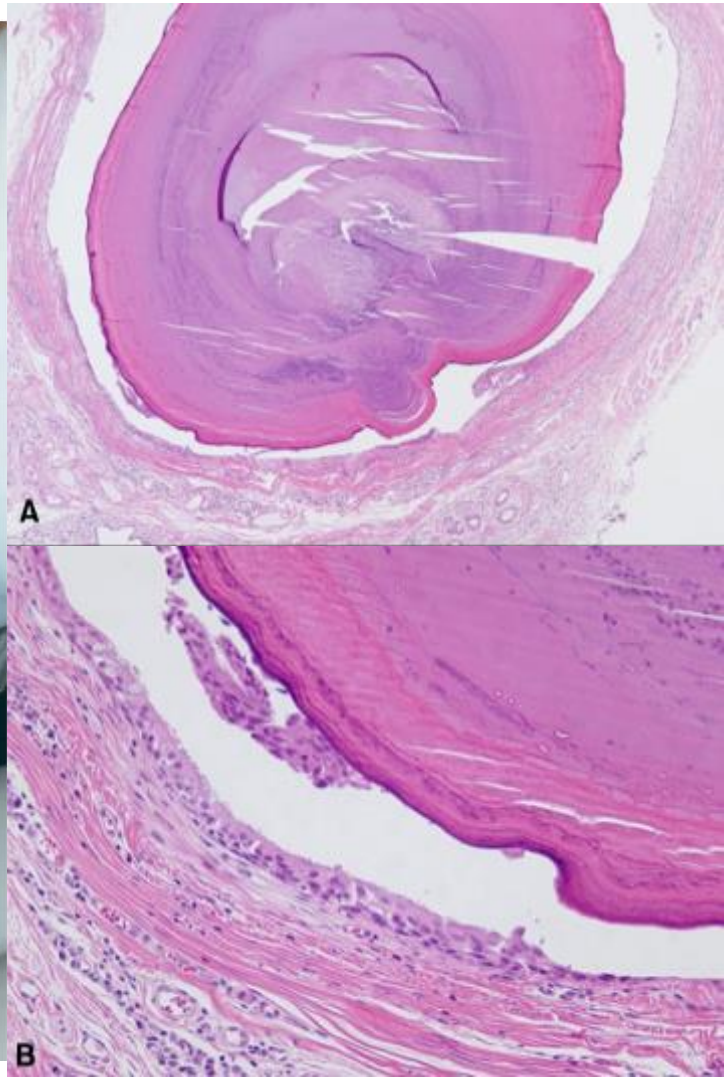
Sialolithiasis (Salivary Stones)

- Sialoliths are calcified and organic matter that form within the secretory system of the major salivary glands. The etiology of sialolith formation is still unknown;
- however, several factors contribute to stone formation. Inflammation, irregularities in the duct system, local irritants, and anti-cholinergic medications may cause pooling of saliva within the duct, which is thought to promote stone formation.
- It is believed that a nidus of salivary organic material becomes calcified and gradually forms a sialolith.

- **The submandibular gland is the most common site of involvement, and 80 to 90% of sialoliths occur in this gland.**

This is a sialogram of the submandibular gland demonstrating an uncalcified sialolithiasis in Wharton's duct.





A) Lamellated calculi were found within the lumen of a dilated minor salivary duct B) Squamous metaplasia of the excretory ductal epithelium and exfoliated epithelium were observed in the minor salivary glands

Mucocele

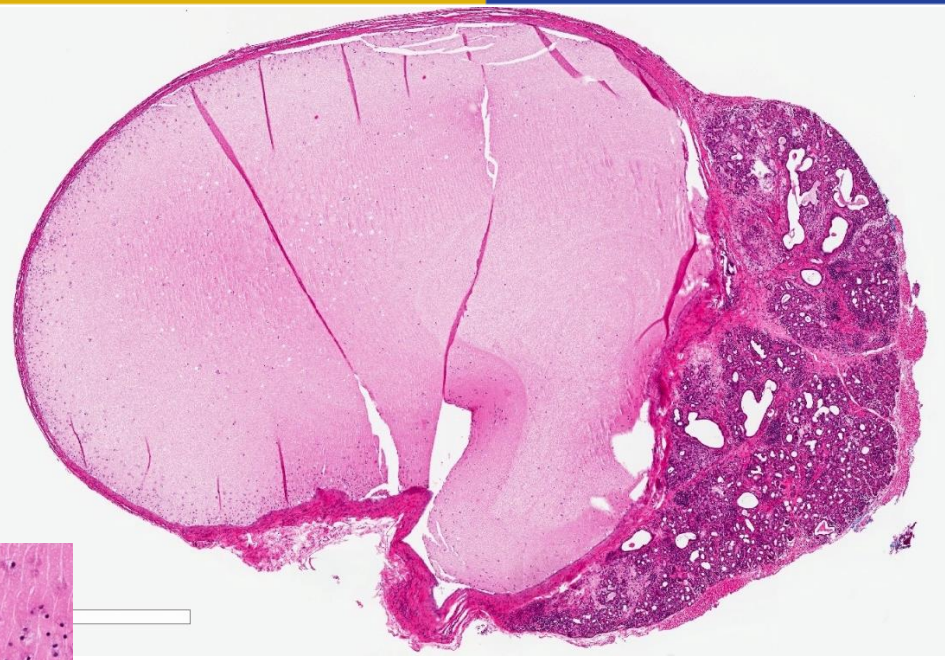
"Mucocele" is a clinical term that describes swelling caused by obstructed minor salivary gland duct. Mucoceles are classified as

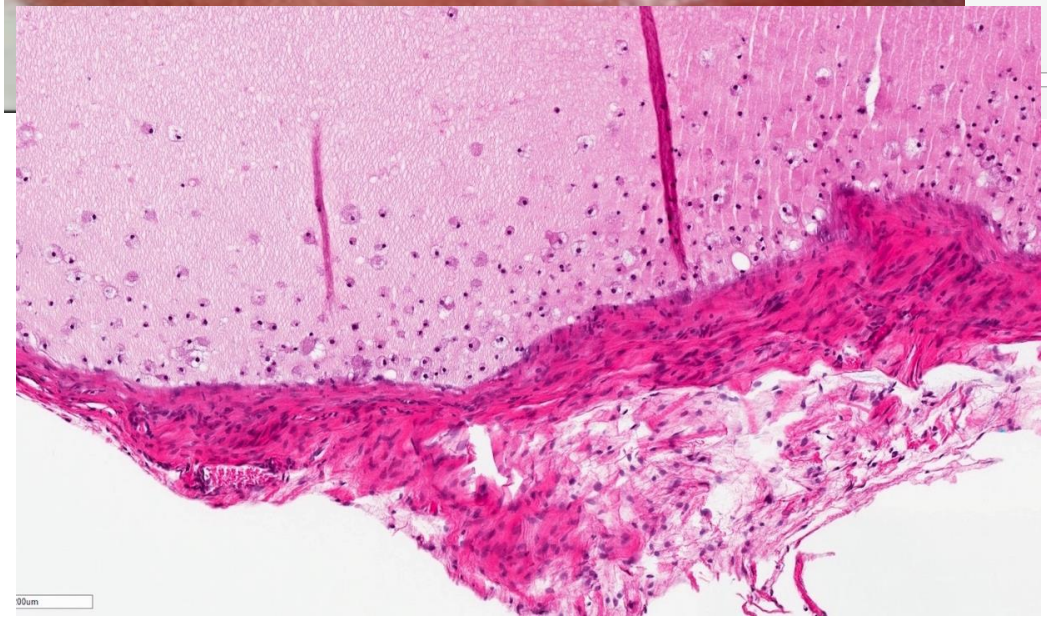
1. Extravasation
2. Retention types.
3. A large form of mucocele located in the floor of the mouth is known as a RANULA.

Clinical Presentation

Extravasation mucoceles most frequently occur on the lower lip, where trauma is common. Buccal mucosa, tongue, floor of the mouth, and retro molar region are other commonly traumatized areas where mucous extravasation may be found. Mucous retention cysts are more commonly located on the palate or the floor of the mouth.

Mucous extravasation cyst





Epithelioid macrophages forming a pseudocyst around the extravasated mucin, no true epithelium is present.

XEROSTOMIA

CAUSES OF XEROSTOMIA-

1. **TEMPORARY-**psychological (anxiety), duct calculi, sialoadenitis, drug therapy(anticholinergic, sympathomimetic, etc.)
2. **PERMANENT-**

   Salivary gland aplasia, sjogrens syndrome, following radio therapy, surgical desalivation

XEROSTOMIA

Common

Especially in middle to late life

USA: 17% of 65-84 year olds had symptoms of oral dryness

Europe: 29% of persons in a may have symptoms of dry mouth

BUT little correlation with objective measurements

XEROSTOMIA

Common

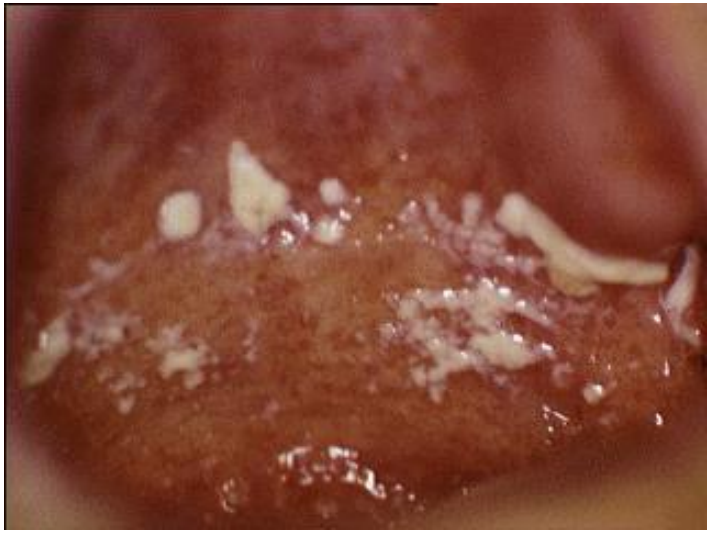
- Drugs
- Radiotherapy to head and neck
- Sjogren's syndrome
- Psychogenic?
- HCV disease?
- HIV disease?

Uncommon

- Chronic graft versus host disease
- Sarcoidosis
- Cystic fibrosis
- Diabetes mellitus
- Amyloidosis
- Haemochromatosis
- Wegener's disease
- Salivary gland agenesis
- Triple A syndrome
- Cholinergic dysautonomia
- Others

XEROSTOMIA

Dysarthria
Dysphagia
Mucosal adhesion
"Stringy saliva"
Caries



Discrete swelling in gland

- Define location – clinical, imaging MRI – is it in the gland?
- Exclude infectious causes
- Fine needle aspiration
- Excisional biopsy if thought benign
- Incisional biopsy if thought malignant

Discrete swelling in gland

- Define location – clinical, imaging MRI – is it in the gland?
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Classification of salivary tumours

Benign:

Pleomorphic adenoma

Warthin's tumour

Malignant:

Mucoepidermoid carcinoma

Polymorphous low-grade adenocarcinoma

Adenoid cystic carcinoma

Carcinoma ex pleomorphic adenoma

Site prevalence of salivary neoplasms

Parotid

probably benign (85%)

Submandibular

probably benign (70%)

Minor glands

palate 45% malignant

sublingual almost certainly malignant

What features suggest malignancy?

Benign	Malignant
Circumscribed Mobile Slow-growing Painless Symptoms only cosmetic or pressure	Poorly circumscribed Fixed Induration (difficult) Ulceration Pain Metastasis Nerve signs Sometimes rapid growth

Pleomorphic (salivary) adenoma

So-called ‘mixed tumour”
Commonest salivary neoplasm
Most in major glands but common in minor
Benign (but may transform to malignancy)
Encapsulated (but must not be enucleated)
Painless, slow-growing

Clinical features

†Mean age – 40 yrs

†Slight female predilection; 2:1

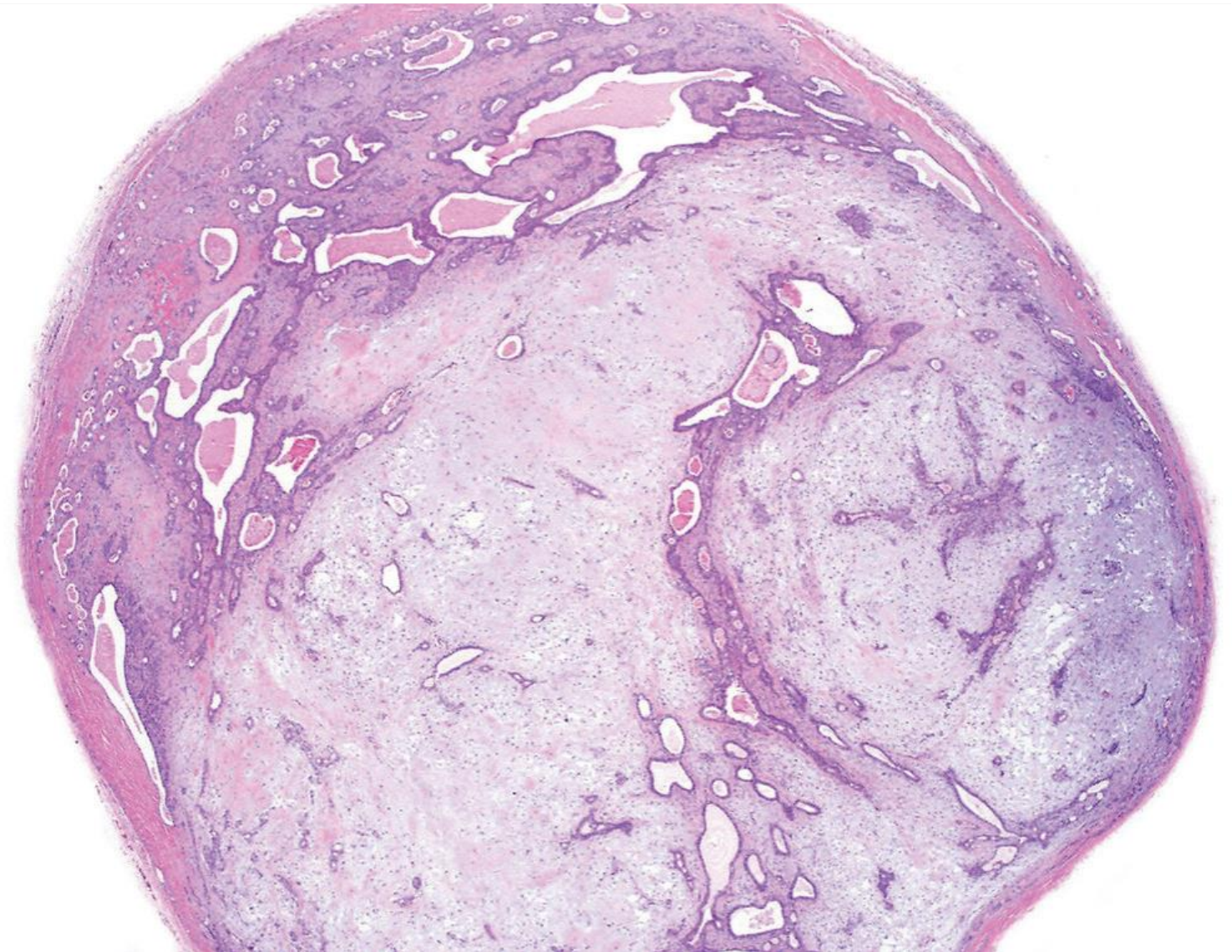
Incidence in major and minor salivary glands is 10:1,

Appears as a painless, slowly growing, smooth surfaced, dome shaped, firm mass

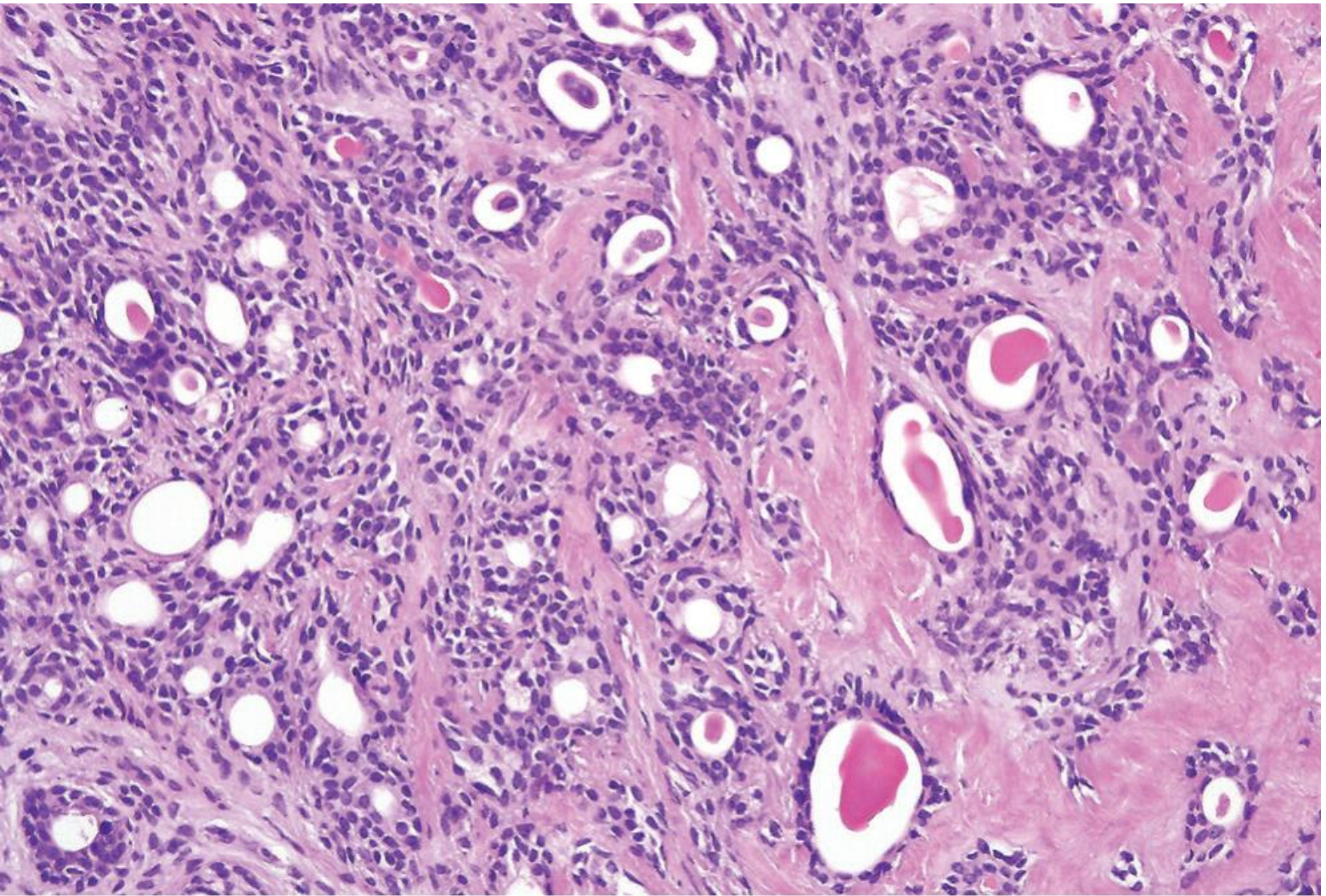

1
2
3
4
5
6

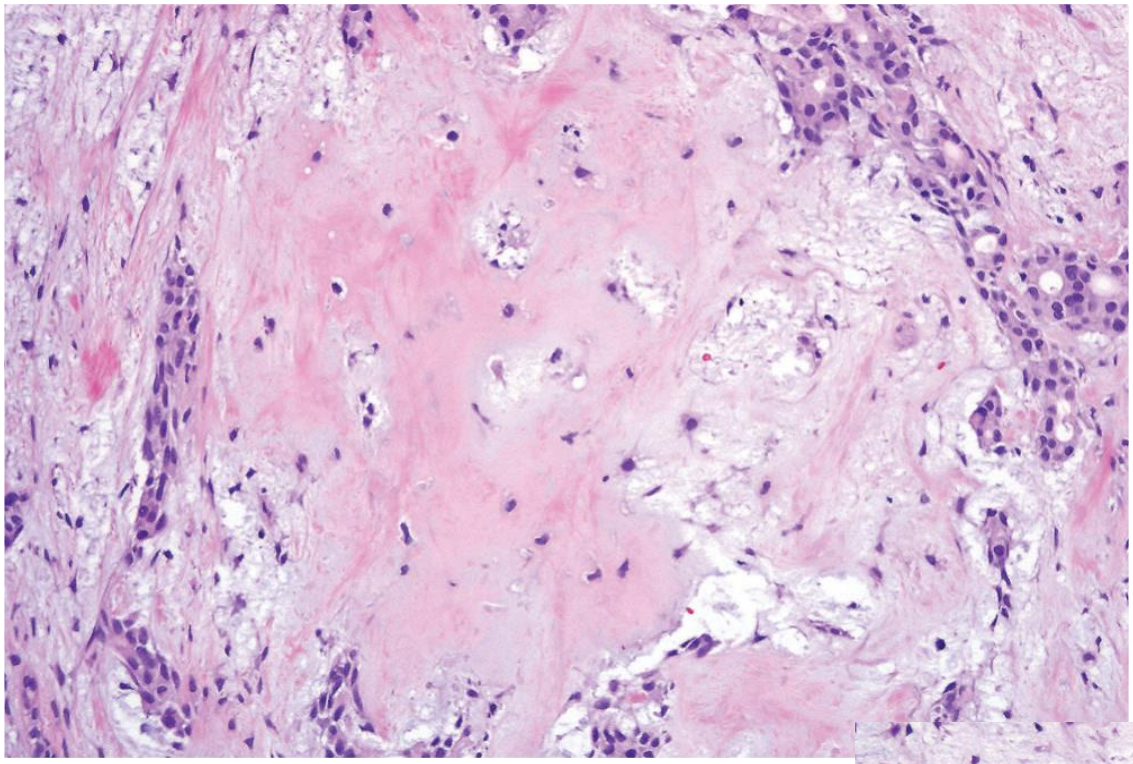

92©

encapsulated tumour with many ducts and prominent myxochondroid areas.



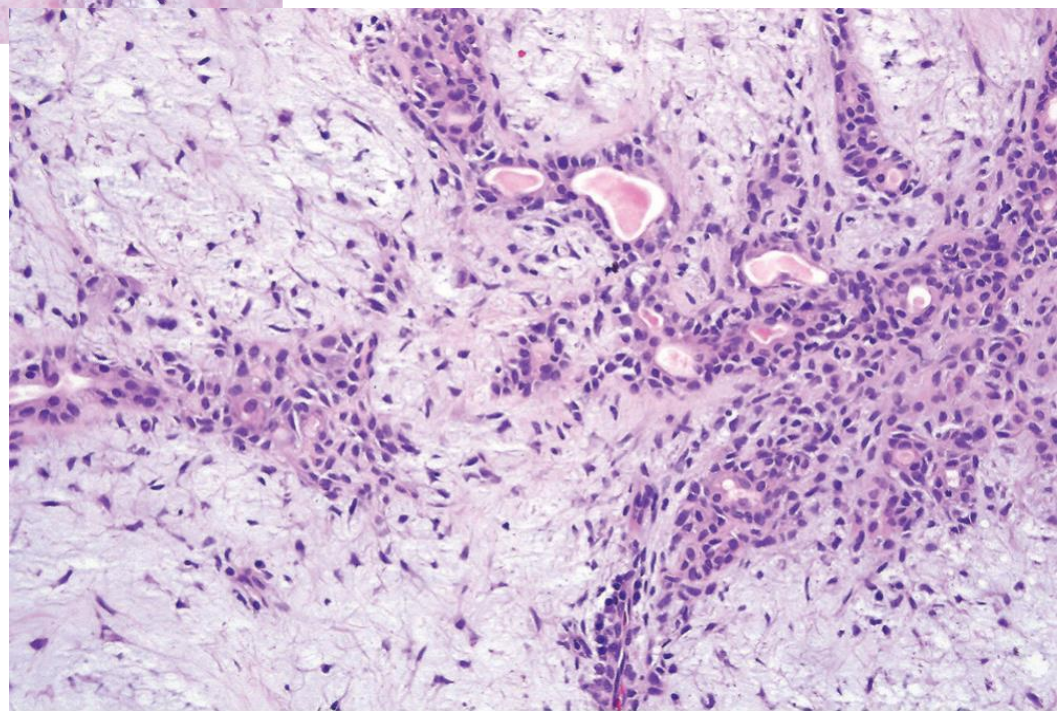
Ducts surrounded by myoepithelial cells that merge into hyalinized stroma.





Myxochondroid areas within the stroma.

Ducts with surrounding epithelioid myoepithelial cells that merge into myxoid stroma that contains spindled myoepithelial cells.



Warthin's tumour

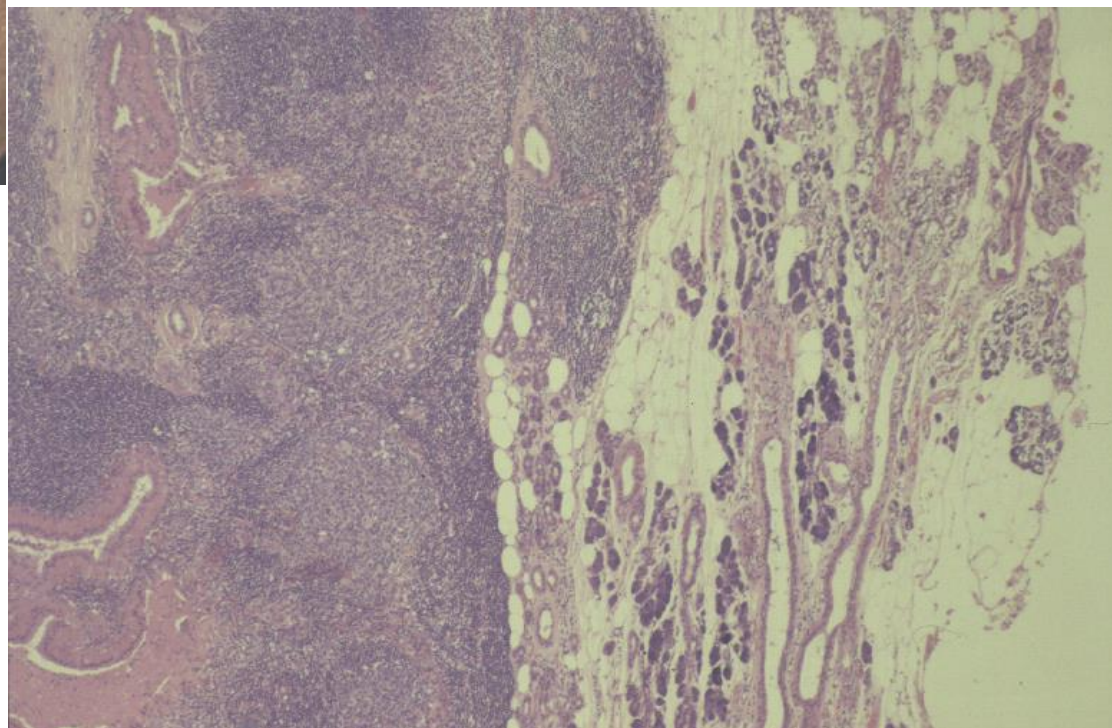
'Adenolymphoma' not a lymphoma!!
Almost all in parotid gland
Elderly patients
Benign, mobile, firm to fluctuant
Sometimes multiple

Encapsulated neoplasm

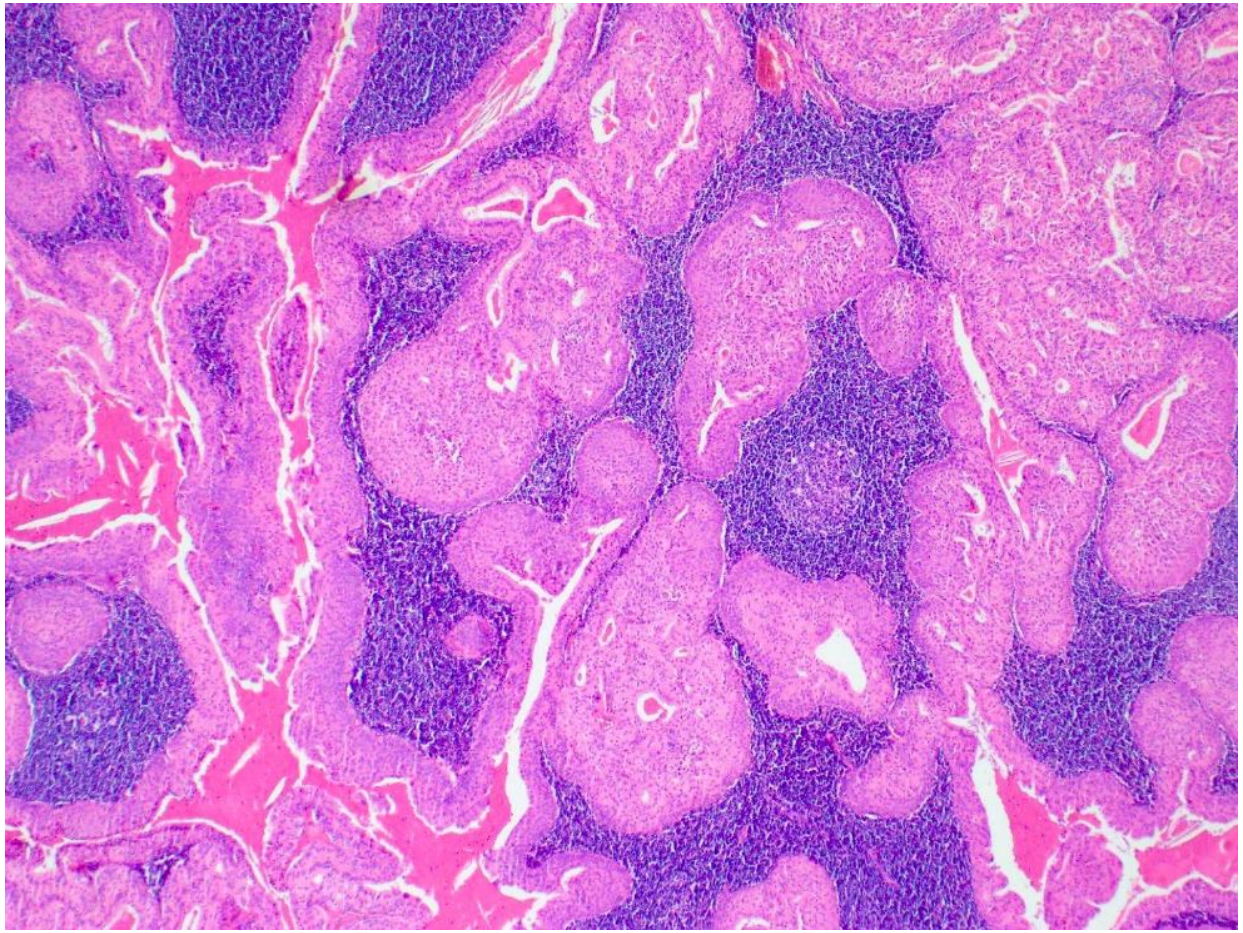
Warthin's tumour

- Synonym: Papillary cystadenoma lymphomatosum
- Site: Tail of parotid
- Bilateral occurrence
- Age: 6^{th} –7^{th} decade
- Male predominance
- Associated with smoking

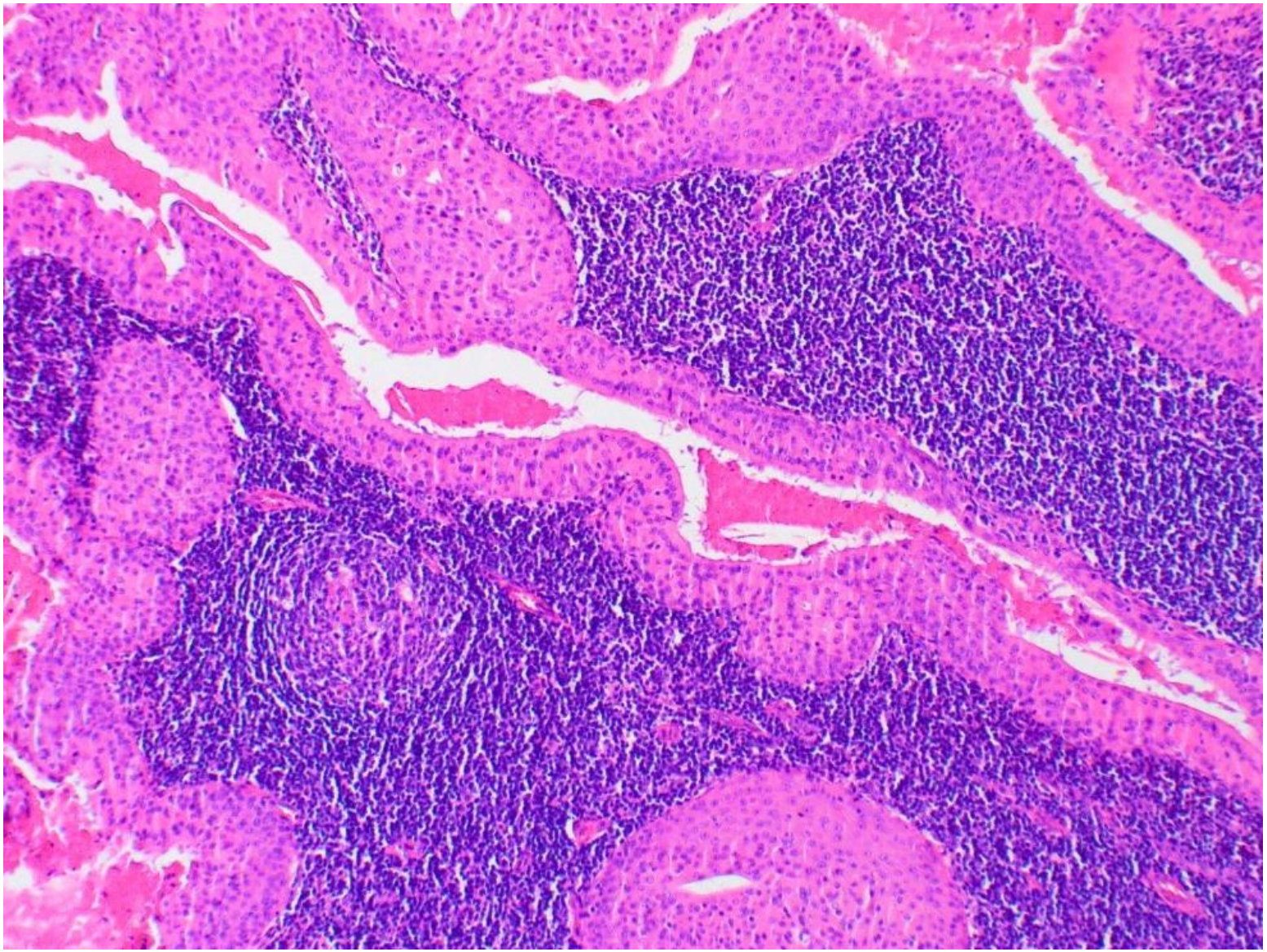
Warthin's tumour



•Varying proportions of papillary cystic structures lined by bilayered oncocytic epithelial cells and surrounded by a lymphoid stroma including germinal centers



High power view showing papillary structures lined by bilayered oncocytic epithelial cells, surrounded by a lymphoid stroma



Mucoepidermoid carcinoma

- Most common
- Site: Major & minor salivary glands
- 2nd to 7th decade
- Female predilection
- *Site: Palate*
  - *Tuberosity*
  - *Retromolar region*
  - *Tongue*
  - *Floor of the mouth*
- Asymptomatic swelling + pain + facial nerve palsy

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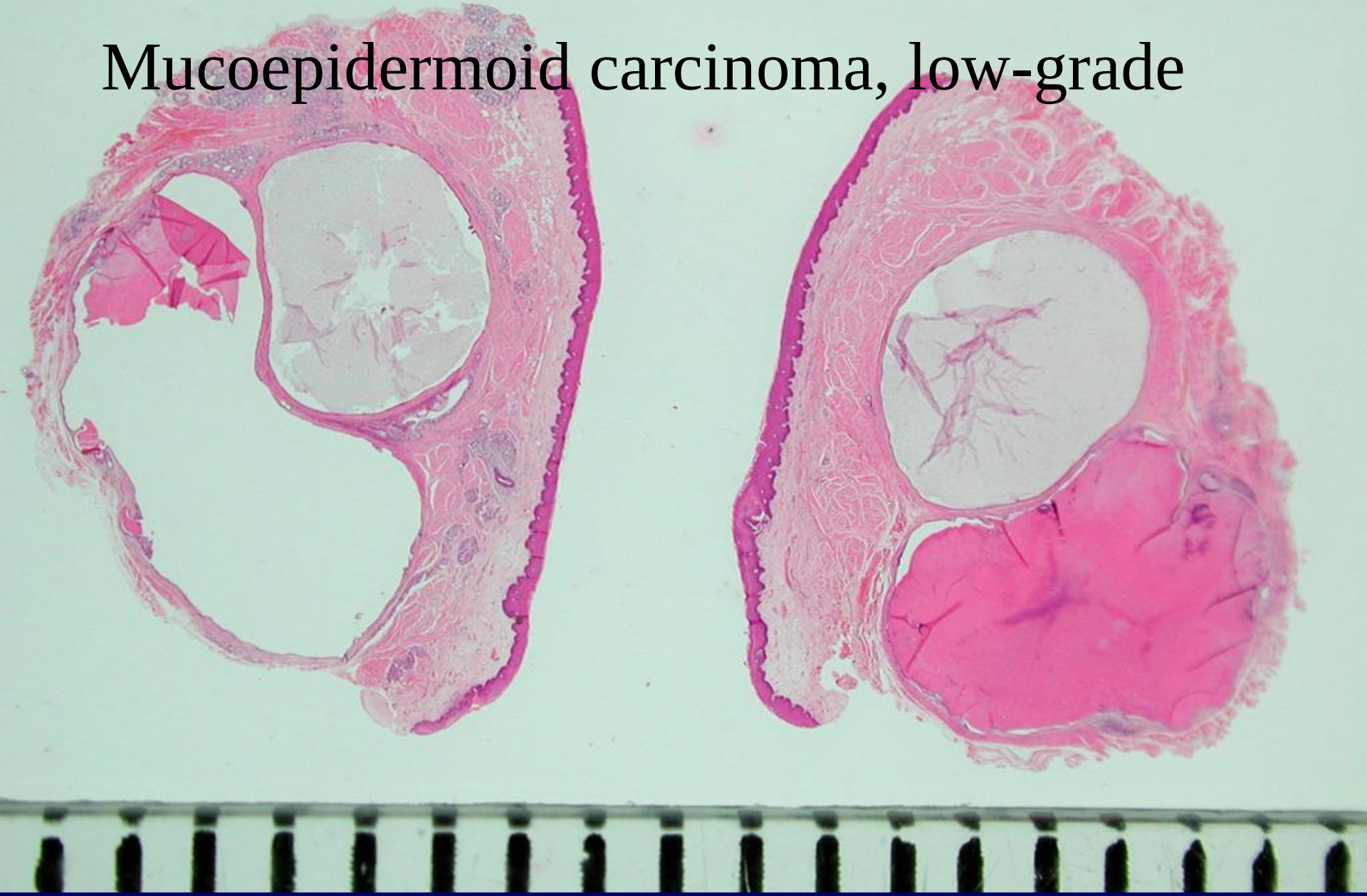
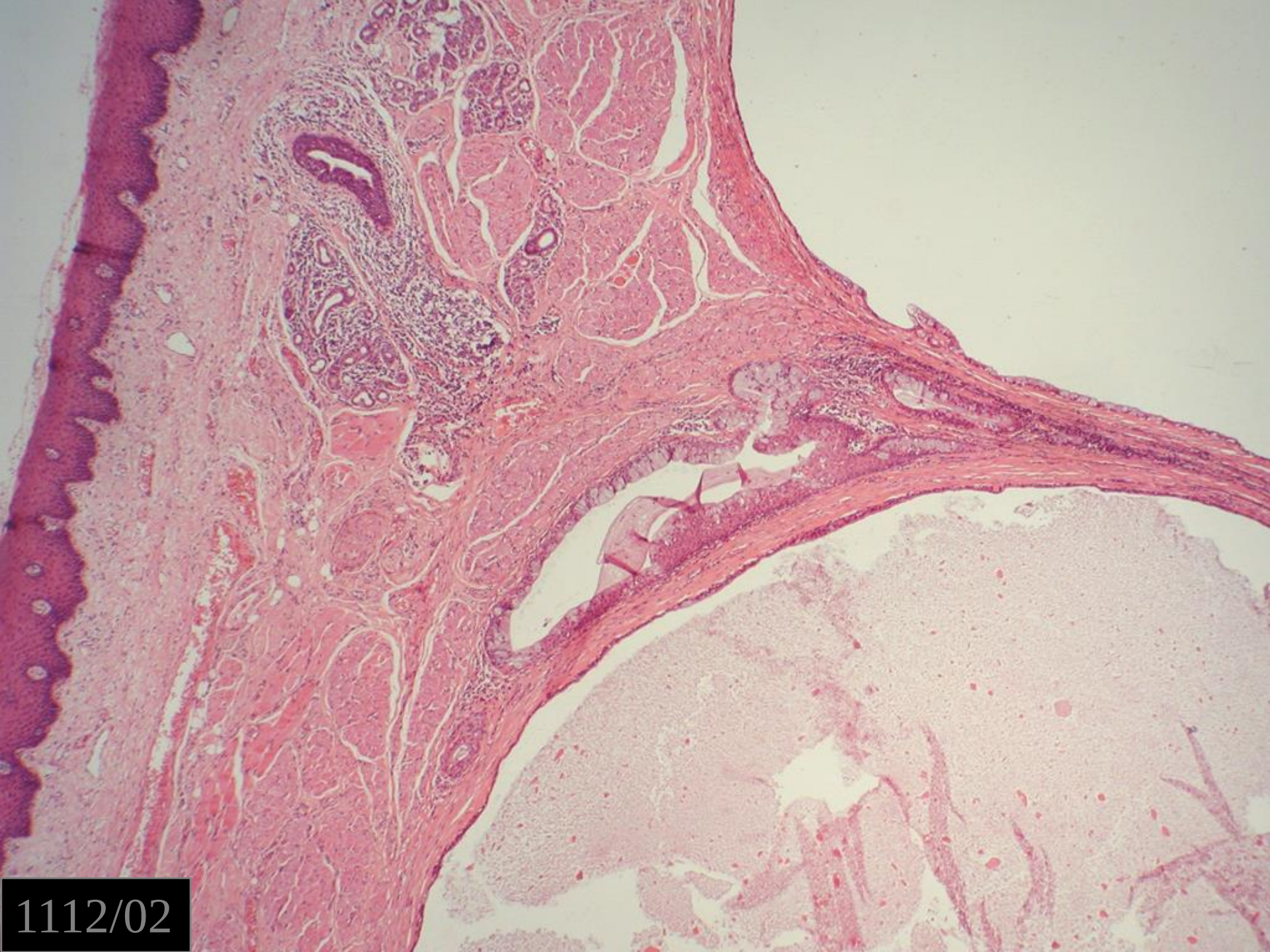
Mucoepidermoid carcinoma, low-grade

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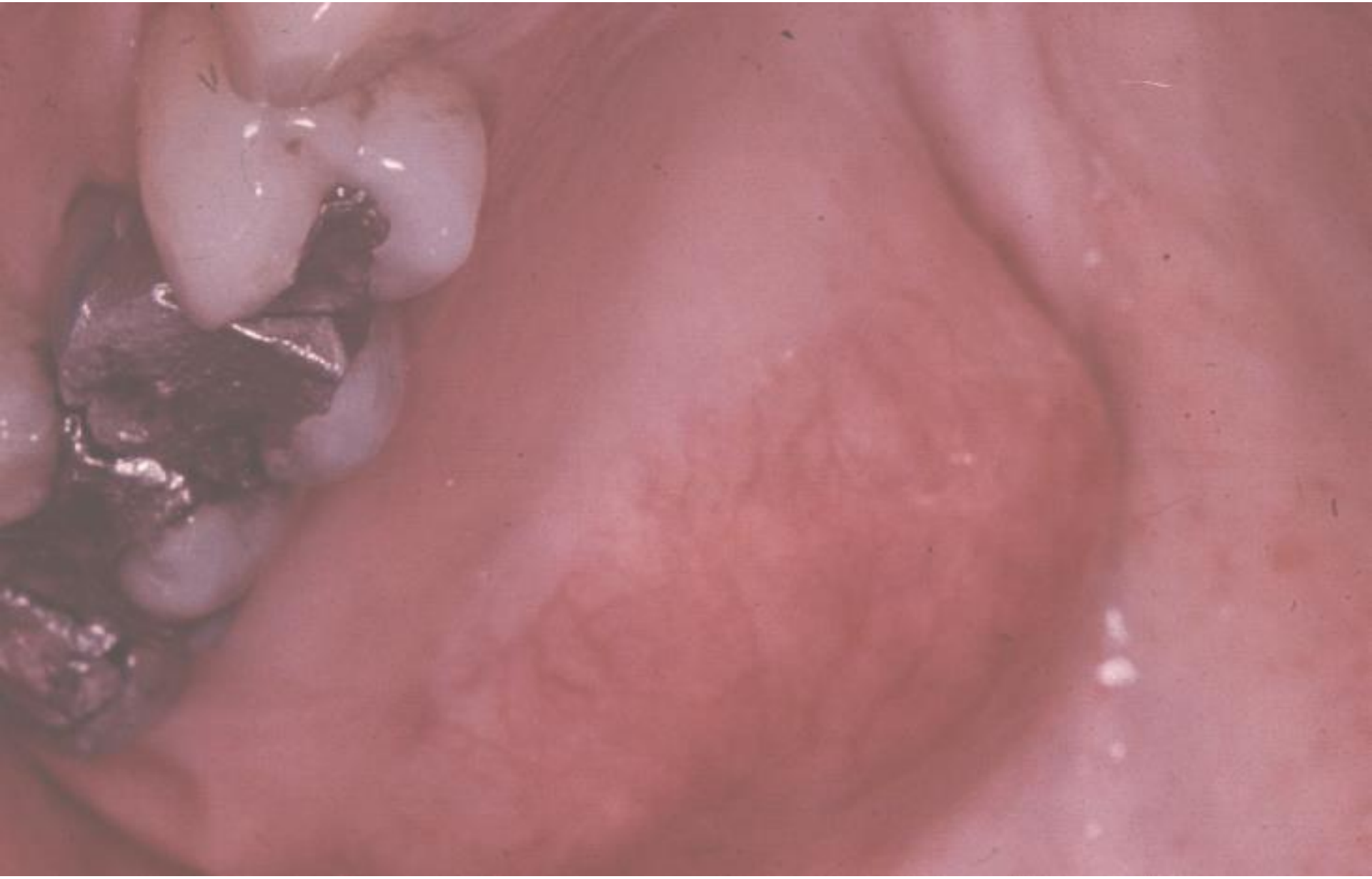
Adenoid cystic carcinoma

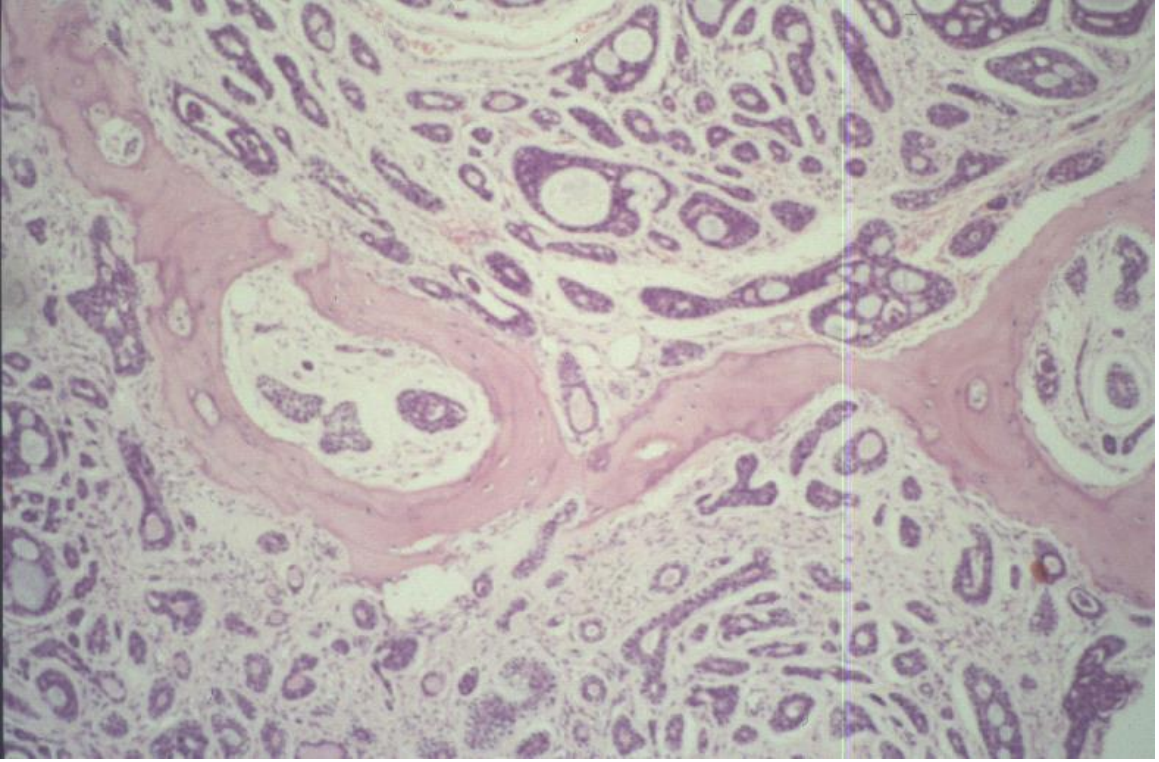
Infrequent but very important
May arise in any salivary gland
Vague presenting symptoms (eg ‘funny feeling’)
Slow-growing but highly infiltrative
Late diagnosis common
Good 5-year prognosis, very poor 15-year

Adenoid cystic carcinoma

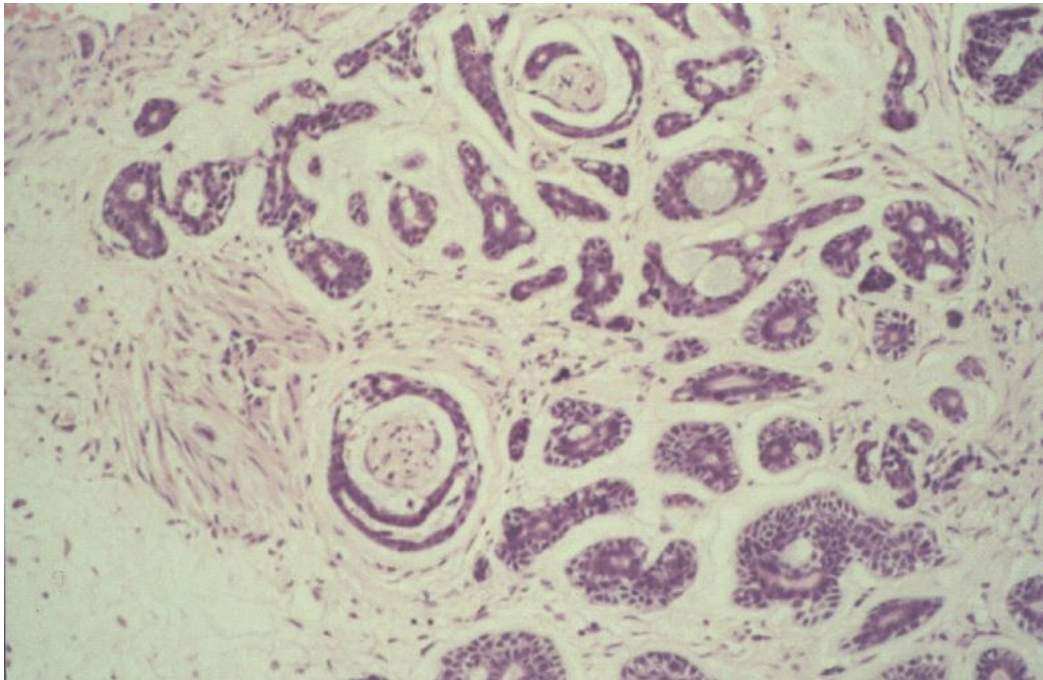
- Synonym: Cylindroma
- Site: Minor salivary gland
- Mid aged adults, 5^{th} –7^{th} decade
- Slow growing swelling
- Swelling + dull ache + facial nerve paralysis
- Late metastasis
- Prognosis : Worse
- Complications :

  CNS involvement





Adenoid cystic carcinoma



Questions