

Level (3) - Semester (5)

# PATHOLOGY

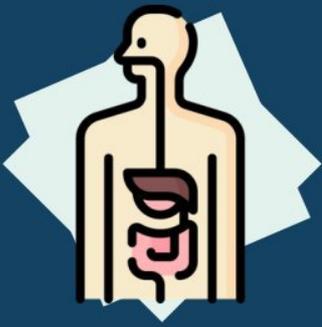


SCAN ME

*lecture (1)*

Oral Cavity & Salivary Glands

**DR M. YUSUF**



# DISEASES OF ORAL CAVITY & SALIVARY GLANDS

## DISEASES OF THE ORAL CAVITY

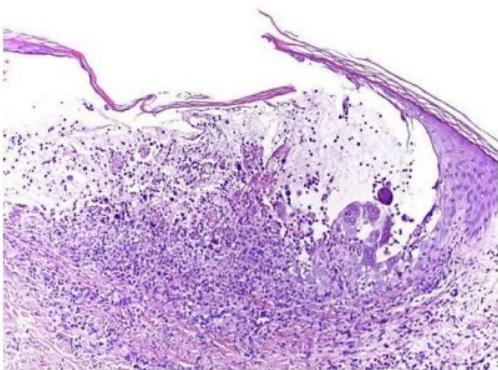
### INFLAMMATORY LESIONS (CHEILITIS)

#### ☑ Etiology:

Infective	Non infective
<ul style="list-style-type: none"> <li>▪ <b>Virus:</b> Herpes simplex</li> <li>▪ <b>Bacterial:</b> Syphilis &amp; Staph.</li> <li>▪ <b>Fungus:</b> Candida</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Vit. B</b> deficiency</li> <li>▪ <b>Iron</b> deficiency</li> </ul>

①

### HERPES SIMPLEX VIRUS (HSV I)

Types	<p>① <b>Acute (Primary) Herpes stomatitis:</b></p> <ul style="list-style-type: none"> <li>- Occur in children</li> </ul> <p>② <b>Recurrent oral herpes:</b></p> <ul style="list-style-type: none"> <li>- Occur in adults</li> <li>- As reactivation of dormant virus</li> <li>- Triggered by (Fever – Allergy – Trauma – Menstruation – Immunosuppression)</li> </ul>
Gross Picture	<ul style="list-style-type: none"> <li>▪ <b>Numerous small vesicles</b></li> <li>▪ In <b>various sites</b> in mouth</li> <li>▪ Vesicles <b>rupture</b> to form <b>multiple small shallow ulcers</b>.</li> </ul>
M/E	<ul style="list-style-type: none"> <li>▪ <b>Intraepithelial vesicles</b> formations with <b>necrotic exudates &amp; neutrophil infiltrate</b></li> <li>▪ <b>Accompanied by:</b> Epithelial cells showing nuclear hydropic degeneration</li> </ul>
Figure	 





II

## DISEASE AFFECTING THE MOUTH MUCOSA

## ① INFLAMMATORY LESIONS OF THE MOUTH (STOMATITIS)

## ☑ Etiology:

① Infective	1) Viral	HSV & Measles (koplik's spot)	
	2) Bacterial	Actinomycosis	
	3) Fungal	Candida (oral thrush)	
② Non infective Catarrhal stomatitis	1) Surface irritants as: Smoking, spirits & spices. 2) Deficiency of vitamin A, B, C 3) lack of oral hygiene.		

III

## DISEASES AFFECTING THE TEETH &amp; SUPPORTING STRUCTURES

①	Dental caries	<ul style="list-style-type: none"> <li>▪ Focal demineralization of tooth structure</li> <li>▪ Caused by acidity of the fermented of sugars by bacteria</li> </ul>	
②	Gingivitis	<ul style="list-style-type: none"> <li>▪ Inflammation involving the squamous mucosa or gingiva surround teeth.</li> </ul>	





## DISEASES AFFECTING TONGUE

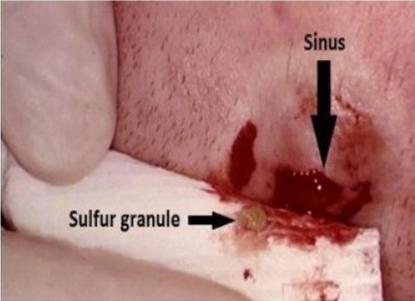
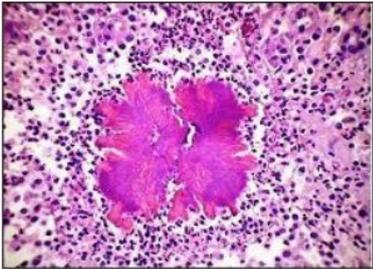
①

## INFLAMMATION OF THE TONGUE (GLOSSITIS)

<b>Acute glossitis</b>	<ul style="list-style-type: none"> <li>▪ Associates Catarrhal stomatitis.</li> </ul>
<b>Chronic glossitis</b>	<ol style="list-style-type: none"> <li>1) Granuloma as: TB &amp; Syphilis.</li> <li>2) Candidiasis</li> <li>3) Sharp tooth.</li> <li>4) Smoking.</li> <li>5) Spices.</li> </ol>
<b>Chronic atrophic glossitis</b>	<ol style="list-style-type: none"> <li>1) ↓ vit B2, B12.</li> <li>2) ↓ Iron</li> </ol>

②

## ACTINOMYCOSIS

<b>Etiology</b>	<ul style="list-style-type: none"> <li>▪ Caused by Actinomyces (<i>A. bovis</i>, <i>israeli</i>)</li> <li>- Called <b>pseudo</b>fungus because of similar cell wall</li> </ul>
<b>Mode of infection</b>	<ul style="list-style-type: none"> <li>▪ Contact</li> </ul>
<b>Site</b>	<ol style="list-style-type: none"> <li>1) Cervicofacial (66%)</li> <li>2) Abdominal</li> <li>3) Pulmonary</li> </ol>
<b>NE</b>	<ul style="list-style-type: none"> <li>▪ <b>Swelling then abscess</b> containing calcified colonies of organisms called <b>Sulphur Granules</b> with sinus or fistula formation</li> </ul> <div style="display: flex; justify-content: space-around;">   </div>
<b>M/E</b>	<ul style="list-style-type: none"> <li>▪ Characterized by “suppurative granulomatous inflammation” which includes: <ul style="list-style-type: none"> <li>- Central colonies of the organism surrounded by excess neutrophils, epithelioid histiocytes &amp; lymphocytes</li> </ul> </li> </ul> 

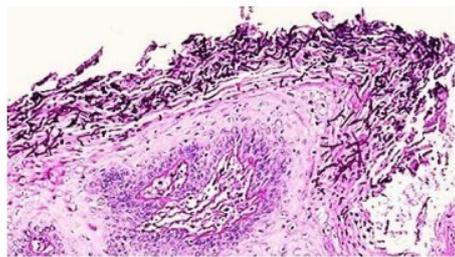




③

## CANDIDIASIS

## Most common oral fungal infection

Caused by	<ul style="list-style-type: none"> <li>▪ <i>Candida albicans</i> Identified by PAS stain</li> </ul>
Occur in	<ol style="list-style-type: none"> <li>1) Infants</li> <li>2) Long term antibiotics</li> <li>3) Diabetics</li> <li>4) Immune dysfunction</li> <li>5) Chemotherapy</li> </ol>
NE	<ol style="list-style-type: none"> <li>1) Pseudomembranous candidiasis: <ul style="list-style-type: none"> <li>- Mucosa covered by white coating (<b>pseudo</b>membrane)</li> <li>- If scraped off → leave <b>red area</b></li> </ul> </li> <li>2) Erythematous (atrophic) candidiasis.</li> </ol> 
ME	<ul style="list-style-type: none"> <li>▪ Fungal hyphae &amp; Neutrophil in superficial epithelium</li> </ul> 

## U

## ULCERS OF THE ORAL CAVITY

<b>① Dental (traumatic) ulcer</b>	<ul style="list-style-type: none"> <li>▪ <b>Very common</b></li> <li>▪ <b>Caused by:</b> <ol style="list-style-type: none"> <li>1. Trauma from sharp objects (e.g. Tooth injuring the lateral edge of the tongue)</li> <li>2. Accidental or intentional biting.</li> </ol> </li> <li>▪ <b>Number:</b> They are usually <b>solitary</b></li> <li>▪ <b>Behavior:</b> The chronic ulcer is <b>precancerous</b>.</li> </ul> 
<b>② Dyspeptic ulcer</b>	<ul style="list-style-type: none"> <li>▪ <b>Accompanies:</b> Dyspepsia</li> <li>▪ <b>Site:</b> Near <b>tip</b> of tongue or any part</li> <li>▪ <b>Characters:</b> Small shallow acute ulcer</li> </ul>





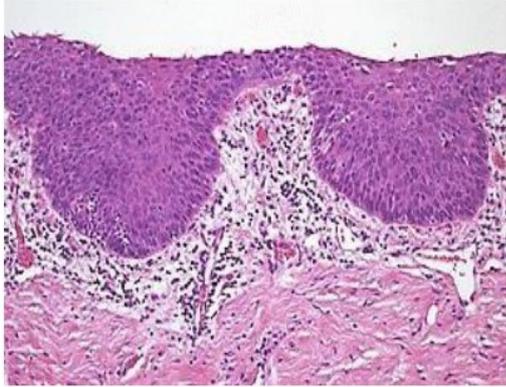
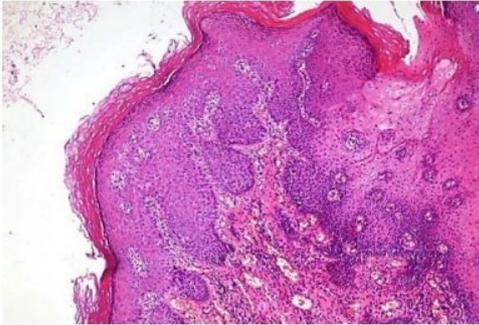
<p>③ Aphthous ulcers (canker sores)</p>	<ul style="list-style-type: none"> <li>▪ <b>Behavior:</b> <ul style="list-style-type: none"> <li>- Common <b>superficial</b> ulcers affect up to <b>40%</b> of the population</li> <li>- More frequent in the <b>first 2 decades</b> of life</li> </ul> </li> <li>▪ <b>Characters:</b> <ul style="list-style-type: none"> <li>- Extremely <b>painful</b> &amp; often <b>recur</b>.</li> <li>- Shallow</li> <li>- Overed by a thin exudate</li> <li>- Rimmed by a narrow zone of erythema</li> </ul> </li> <li>▪ <b>Number:</b> <b>Solitary</b> or <b>multiple</b></li> </ul>	
<p>④ Syphilitic ulcers</p>	<ul style="list-style-type: none"> <li>▪ <b>Site:</b> <b>Gummatous ulcer</b> on <b>dorsum</b> of <b>tongue</b> between anterior 2/3 and posterior 1/3</li> <li>▪ <b>Behavior:</b> <b>Precancerous</b></li> </ul>	
<p>⑤ Tuberculous ulcer</p>	<ul style="list-style-type: none"> <li>▪ <b>Site:</b> <b>Tip</b> of tongue in case of open cavitory pulmonary T.B</li> <li>▪ <b>Characters:</b> <b>Undermined edge</b> &amp; <b>caseous floor</b></li> </ul>	
<p>⑥ Malignant ulcer</p>	<ul style="list-style-type: none"> <li>▪ <b>Site:</b> Common in <b>anterior 2/3</b> than posterior 1/3 of the tongue, present at <b>lateral edge</b>.</li> <li>▪ <b>Characters:</b> <ul style="list-style-type: none"> <li>- Raised everted edge</li> <li>- Necrotic floor</li> <li>- Indurated fixed base</li> </ul> </li> </ul>	

## PRENEOPLASTIC LESIONS OF THE ORAL CAVITY

	① Leukoplakia	② Erythroplakia
<p>NE</p>	<ul style="list-style-type: none"> <li>▪ <b>White</b> patch or plaque</li> <li>▪ <b>Cannot</b> be scraped off.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Red, velvety</b> lesion</li> <li>▪ <b>Flat or depressed</b></li> <li>▪ <b>Most common risk factor:</b> <b>Tobacco use</b></li> </ul>





ME	<ul style="list-style-type: none"> <li>▪ Keratinized squamous metaplasia</li> <li>▪ 5% to 25% are dysplastic</li> <li>▪ At risk for progression to squamous cell carcinoma</li> </ul>	<p>Marked dysplasia</p> 
		<p>RISK FOR MALIGNANT TRANSFORMATION</p> <p style="text-align: center;"><b>Less</b></p>

## NEOPLASTIC LESIONS OF THE ORAL CAVITY

①	Benign Tumors	<ol style="list-style-type: none"> <li>1) Squamous cell papilloma.</li> <li>2) Others:             <ol style="list-style-type: none"> <li>a. Benign mixed salivary gland tumor</li> <li>b. Haemangioma</li> <li>c. Lymphangioma.</li> </ol> </li> </ol>
②	Malignant tumors	<ol style="list-style-type: none"> <li>1) Squamous cell carcinoma.</li> <li>2) Malignant salivary gland tumors.</li> <li>3) Others:             <ol style="list-style-type: none"> <li>a. Sarcomas</li> <li>b. Melanoma</li> </ol> </li> </ol>

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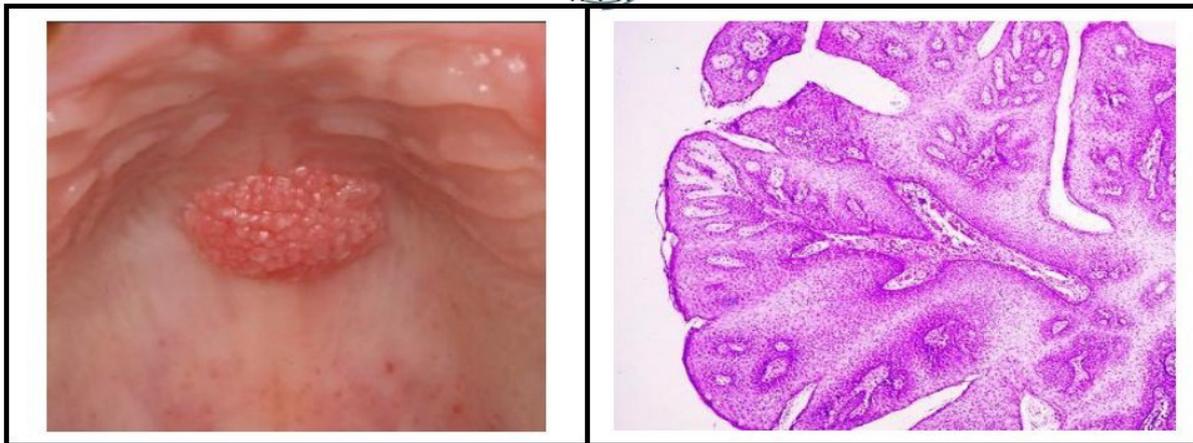
## BENIGN TUMORS

### ①

## SQUAMOUS CELL PAPILLOMA

Grossly	<ul style="list-style-type: none"> <li>▪ Papillary (cauliflower-like)</li> <li>▪ Exophytic</li> <li>▪ Tan-white lesion</li> </ul>
ME	<ul style="list-style-type: none"> <li>▪ Papillary proliferation formed of:             <ul style="list-style-type: none"> <li>- Fibrovascular cores</li> <li>- Covered by stratified squamous epithelium with variable hyperkeratosis</li> </ul> </li> </ul>





②

### SQUAMOUS CELL CARCINOMA

Age	<ul style="list-style-type: none"> <li>Above 50 years affects <b>male</b> more than <b>females</b>.</li> </ul>
Predisposing factors	<ol style="list-style-type: none"> <li><b>Chronic irritation:</b> <ol style="list-style-type: none"> <li>Sun light - Radiation</li> <li>Smoking - Alcohol</li> <li>Mechanical irritation</li> </ol> </li> <li><b>Oncogenic viruses as:</b> human papilloma virus (HPV)</li> <li><b>Precancerous lesions:</b> <ol style="list-style-type: none"> <li>Leukoplakia</li> <li>Erythroplakia</li> <li>Dental &amp; gummatous ulcers</li> <li>Squamous cell papilloma</li> </ol> </li> </ol>
N/E	<ul style="list-style-type: none"> <li><b>Lip:</b> Mostly fungating</li> <li><b>Oral:</b> Commonly ulcerating</li> <li><b>Tongue:</b> More common infiltrating</li> </ul>
M/E	<ul style="list-style-type: none"> <li><b>Well differentiated</b> squamous cell carcinoma occurs in <b>lip &amp; anterior 2/3 of tongue</b>.</li> <li><b>Undifferentiated</b> or <b>anaplastic</b> carcinoma in <b>post 1/3 tongue</b>.</li> </ul>
Spread	<ul style="list-style-type: none"> <li><b>More in tongue due to:</b> <b>High</b> grade - <b>More</b> movement - <b>More</b> lymphatic.</li> <li>1) <b>Local to surroundings.</b></li> <li>2) <b>Lymphatic</b> <ul style="list-style-type: none"> <li>- <b>Submental &amp; submandibular lymph nodes:</b> In lip carcinoma.</li> <li>- <b>Cervical:</b> In oral and tongue carcinoma.</li> </ul> </li> <li>3) <b>Blood:</b> lung &amp; other organs</li> </ul>





❖ **Death** in tongue carcinoma is due to:

- A. Aspiration Bronchopneumonia & lung abscess
- B. Haemorrhage
- C. Cachexia

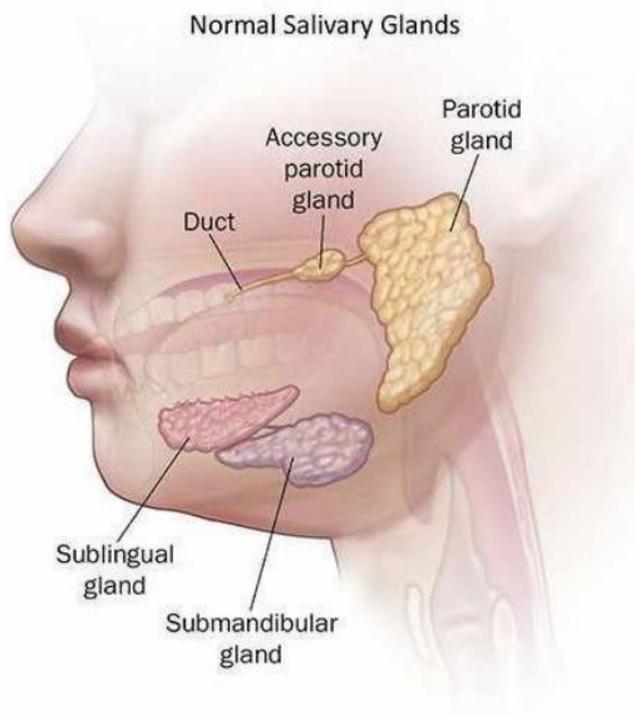
## DISEASES OF SALIVARY GLANDS

### I

## SIALADENITIS

### Definition

- Inflammation of salivary gland



### 1

## BACTERIAL SIALADENITIS

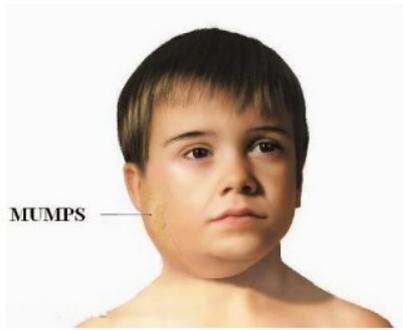
Site	▪ Involves the major salivary glands ( <b>particularly the submandibular glands</b> ).
Organisms	▪ <b>Staphylococcus aureus</b> & <b>Streptococcus viridans</b> .
Predisposing factors	1) <b>Duct obstruction</b> by stones (sialolithiasis) OR impacted food debris 2) <b>Systemic dehydration</b> with <b>decreased</b> salivary secretions.





②

## VIRAL SIALADENITIS (MUMPS)

Definition	<ul style="list-style-type: none"> <li>Acute systemic viral infection, transmitted by droplet infection in school children</li> </ul>
NE	<ul style="list-style-type: none"> <li>1- Bilateral parotid swelling</li> <li>2- Hotness</li> <li>3- Redness</li> <li>4- Painful</li> </ul> 
ME	<ul style="list-style-type: none"> <li>interstitial tissue shows: Edema - Congested capillaries - Mononuclear cellular infiltrate - Degenerated acini.</li> <li>It heals by resolution.</li> </ul>
Complications	<ul style="list-style-type: none"> <li>1- Orchitis (<b>Rarely</b> leads to sterility)</li> <li>2- Pancereatitis.</li> <li>3- Mastitis.</li> <li>4- Meningitis.</li> <li>5- Encephalitis &amp; Neuritis (8th cranial nerve).</li> </ul>

③

## AUTOIMMUNE SIALADENITIS

(Sjogren's disease)

Definition	<ul style="list-style-type: none"> <li>A chronic slowly progress inflammatory autoimmune disease</li> <li>Primarily affects the exocrine glands (<b>especially the salivary &amp; lacrimal glands</b>).</li> </ul>
Occurrence	<ul style="list-style-type: none"> <li>Most common in <b>females</b> between 50 -60 years</li> </ul>
ME	<ul style="list-style-type: none"> <li>Interstitial tissue shows excess lymphocytes &amp; degenerated acini &amp; fibrosis.</li> </ul>
Effects	<ul style="list-style-type: none"> <li>Xerostomia &amp; xerophthalmia (Dry mouth &amp; eye) <b>resulting from a decrease production of saliva.</b></li> </ul>





## SALIVARY GLANDS TUMORS

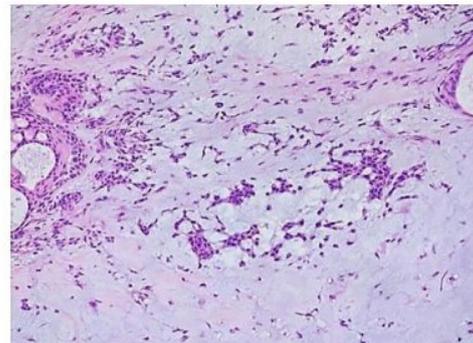
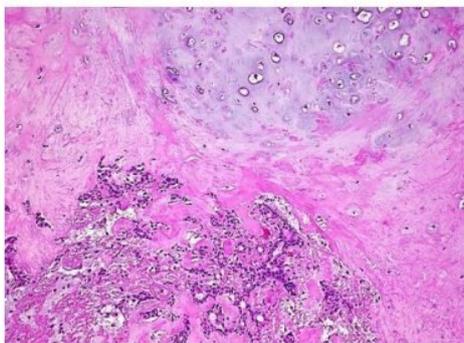
①	<b>Benign</b>	<ol style="list-style-type: none"> <li>1) Pleomorphic adenoma</li> <li>2) Warthin tumor</li> <li>3) Oncocytoma</li> <li>4) Cystadenoma</li> <li>5) Basal cell adenoma</li> </ol>
②	<b>Malignant</b>	<ol style="list-style-type: none"> <li>1) Mucoepidermoid carcinoma</li> <li>2) Adenoid cystic carcinoma</li> <li>3) Acinic cell carcinoma</li> <li>4) Adenocarcinoma NOS</li> <li>5) Malignant mixed tumor</li> </ol>

### I

## PLEOMORPHIC ADENOMA (MIXED SALIVARY TUMOR)

Most common benign tumor of salivary glands

<b>Site</b>	<ul style="list-style-type: none"> <li>▪ Parotid gland</li> </ul>
<b>N/E</b>	<ul style="list-style-type: none"> <li>▪ <b>Lobulated</b> with <b>incomplete capsule</b></li> <li>▪ <b>Cut surface</b> show <b>variable appearance; white &amp; blue</b></li> </ul>
<b>M/E</b>	<ul style="list-style-type: none"> <li>▪ Sheets of <b>epithelial cells</b> in <b>variable stroma fibrous, myxoid or chondroid matrix</b></li> </ul>
<b>Complications</b>	<ol style="list-style-type: none"> <li>1) <b>Recurrence</b></li> <li>2) <b>Malignant change.</b></li> </ol>





## ADENOID CYSTIC CARCINOMA

Behavior	▪ <b>Highly malignant</b> tumor of salivary glands
Site	▪ Minor salivary glands
N/E	▪ Lobulated & Non-capsulated
M/E	▪ Malignant epithelial cells arranged in ducts & cyst like spaces. ▪ Commonly spread along the nerve fibers

