

# Oral Health for USMLE Step One

## Section 3: Congenital, Salivary, Dental and Other Oral Pathology



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# Oral Health

for USMLE Step One

Anatomy of the Oral Cavity

Mouth

Salivary Glands

Pharynx

Lesions

1. Viral
2. Bacterial
3. Fungal
4. Nutritional Deficiency
5. Autoimmune
6. Medication Induced
7. Precancerous
8. Malignant Neoplasms

Pathology of the Oral Cavity

Congenital

Salivary Pathology

Dental Pathology

Other

# Oral Health

for USMLE Step One



Pathology of the Oral Cavity

Lesions

Congenital

Salivary Pathology

Dental Pathology

Other

1. Viral
2. Bacterial
3. Fungal
4. Nutritional Deficiency
5. Autoimmune
6. Medication Induced
7. Precancerous
8. Malignant Neoplasms

1. Cleft Lip
2. Cleft Palate
3. Osteogenesis Imperfecta
4. Congenital Syphilis

1. Sialadenitis
  - a. Infection
  - b. Obstruction
2. Tumors
  - c. Benign
  - d. Malignant

1. Erosion
  - a. GERD
  - b. Bulimia
  - c. Bacteria
2. Caries
3. Abscess

1. TMJ
2. Medications w/ Oral Effects
3. SBE Prophylaxis

# Oral Health

for USMLE Step One

Pathology of the  
Oral Cavity

Lesions

Congenital

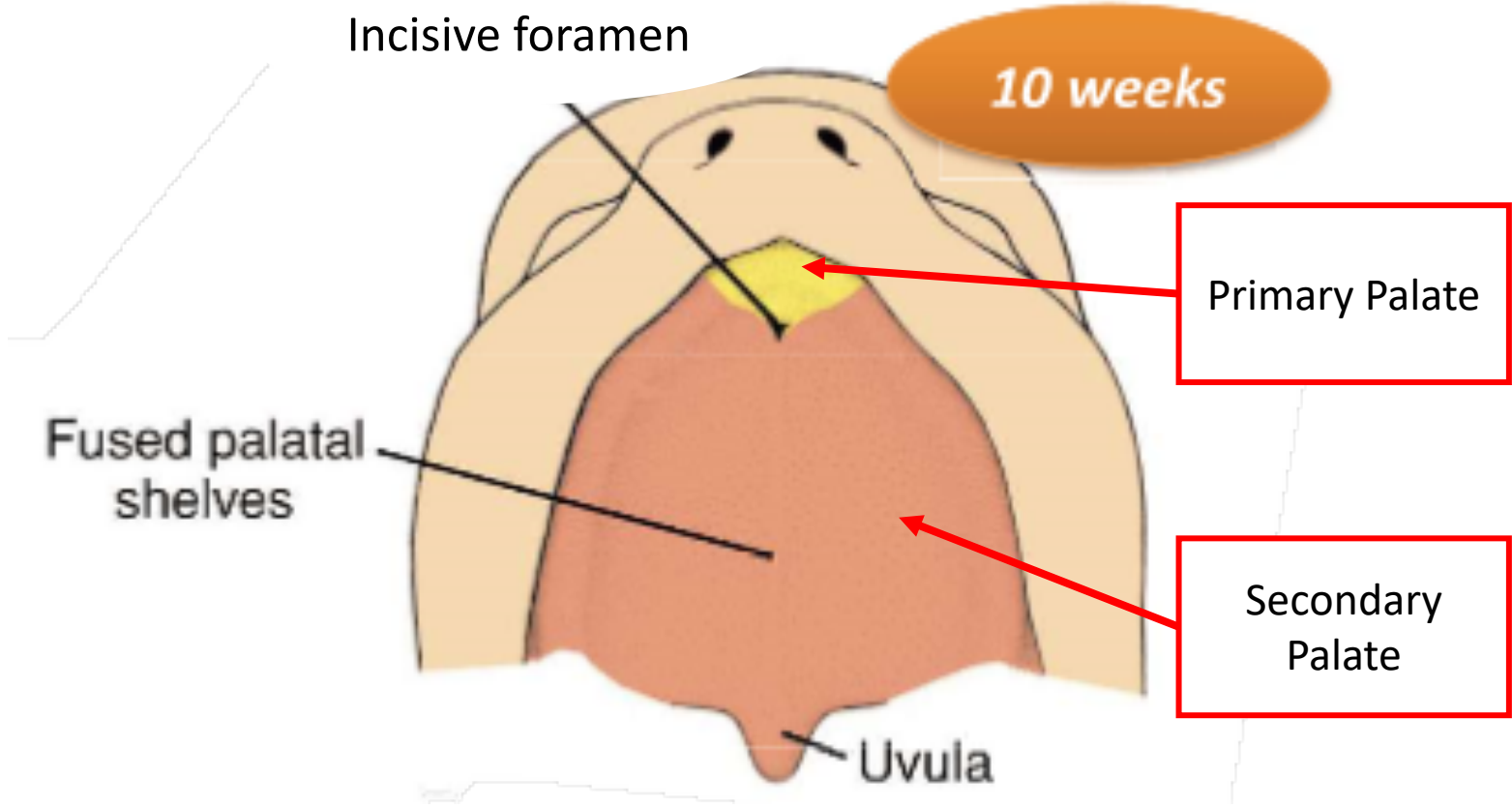
Salivary  
Pathology

Dental  
Pathology

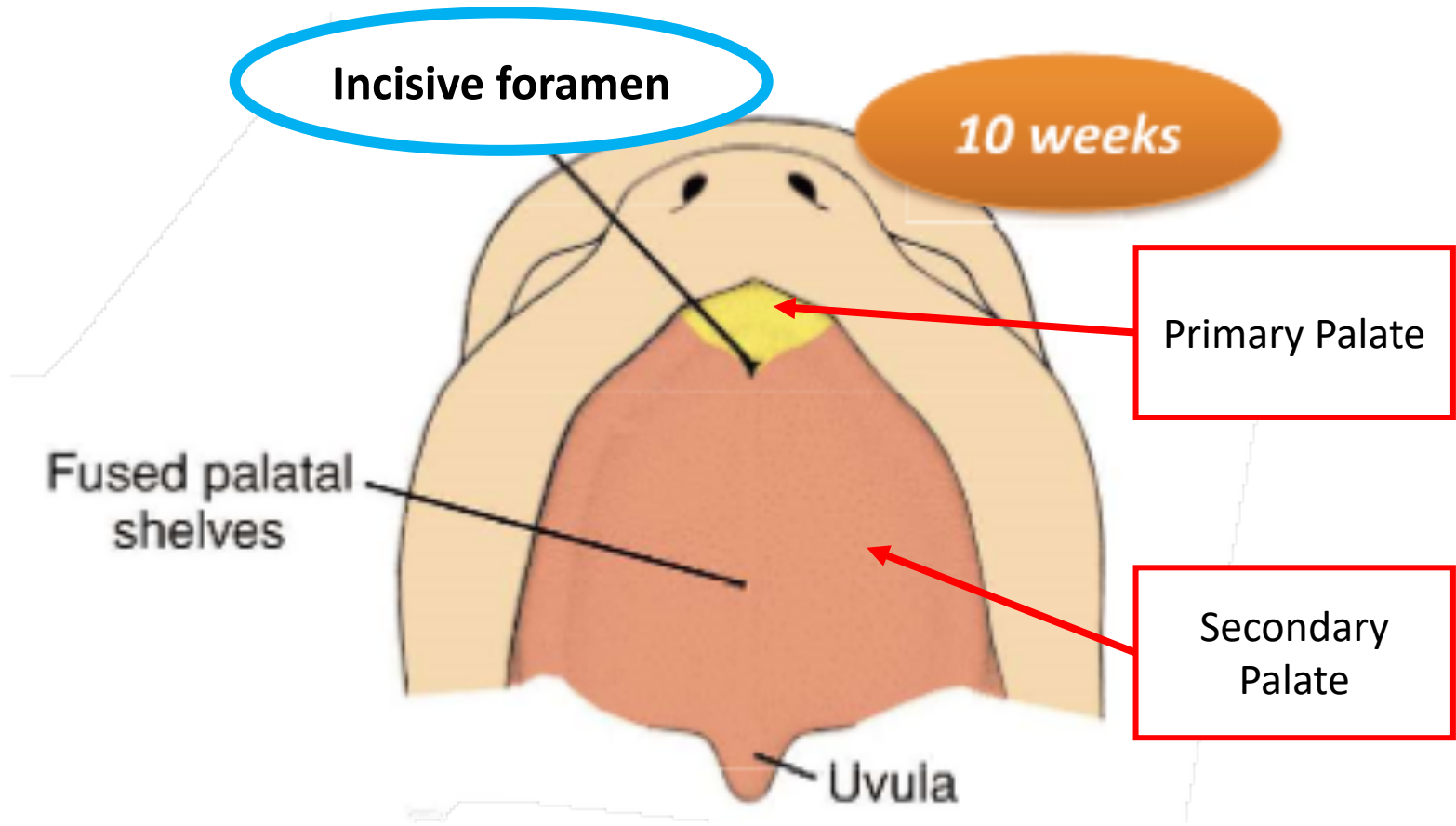
Other

1. **Cleft Lip**
2. **Cleft Palate**
3. Osteogenesis Imperfecta
4. Congenital Syphilis

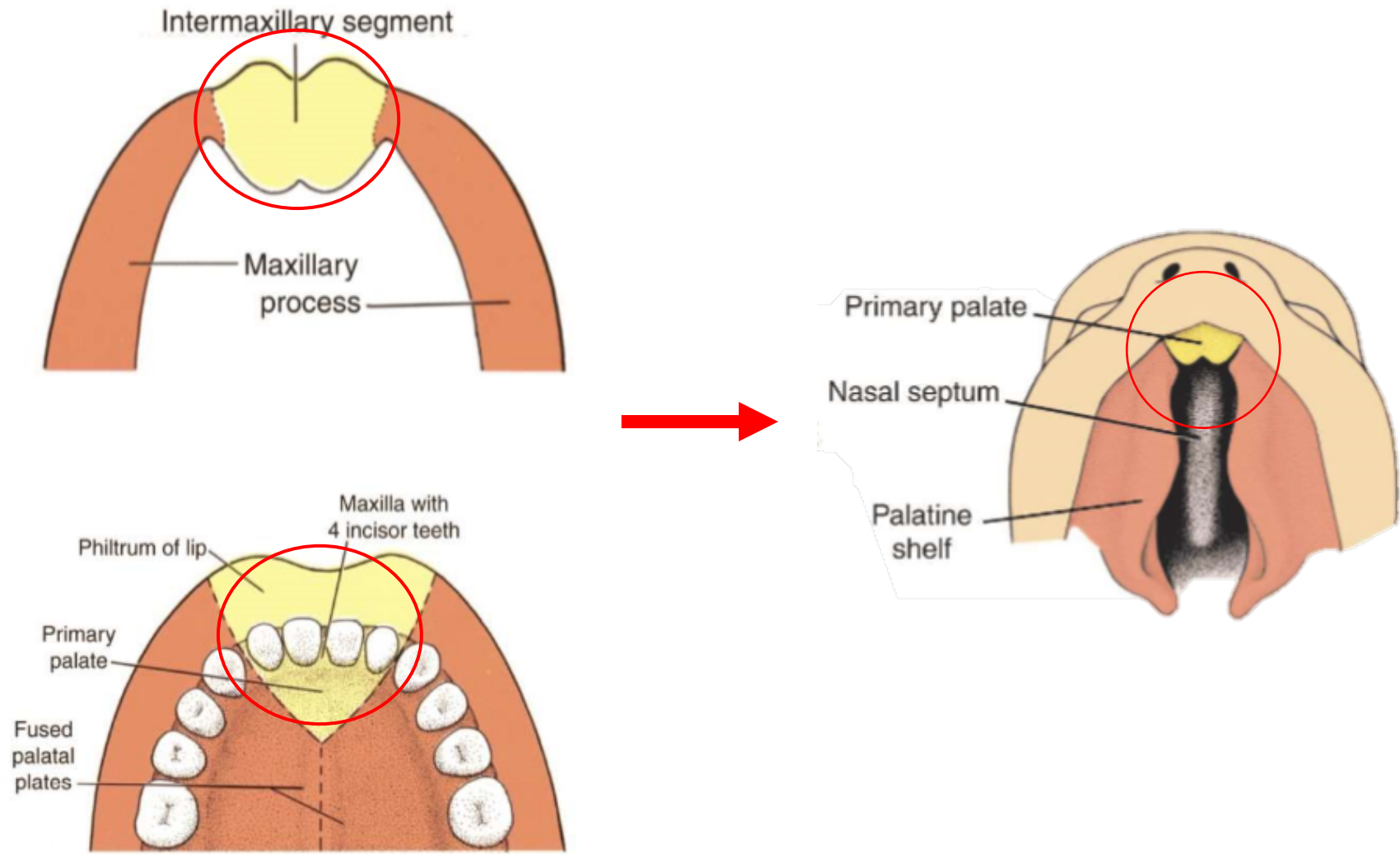
# Congenital Pathology



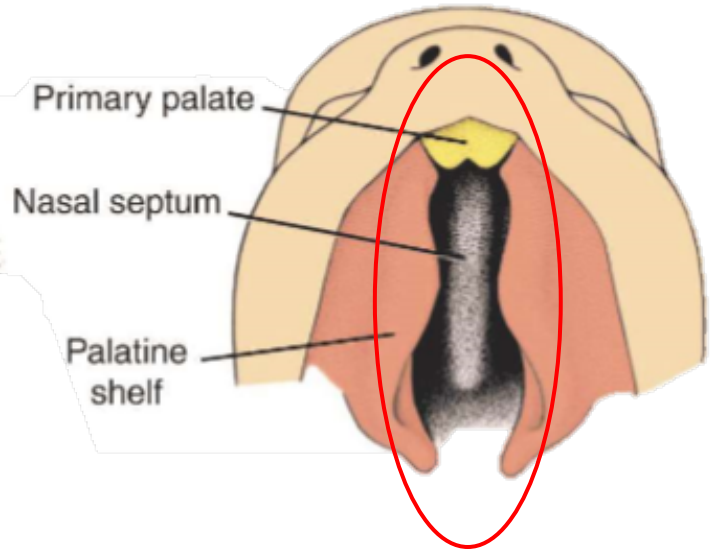
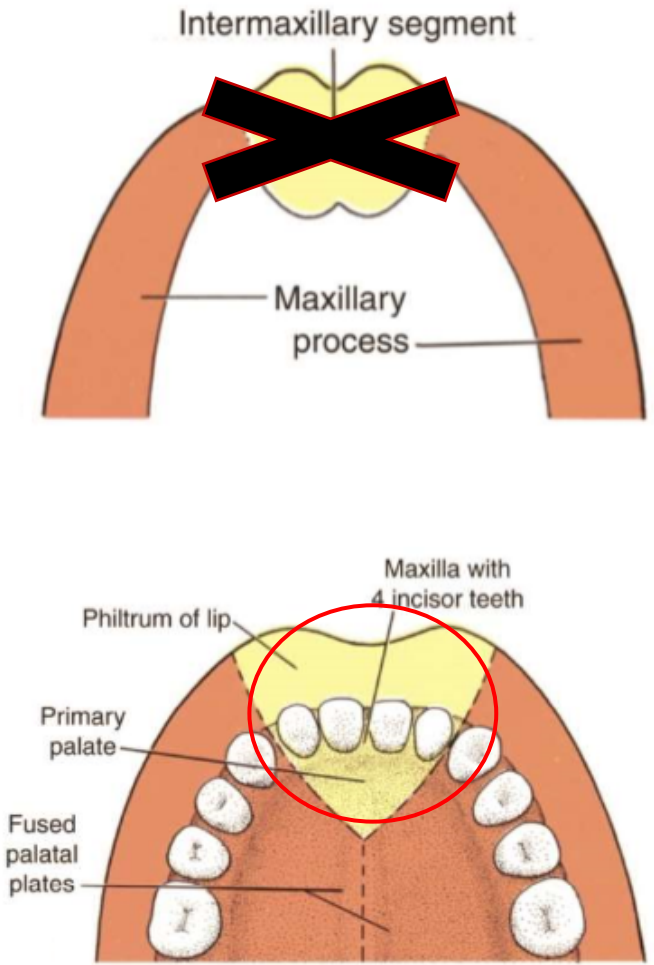
# Congenital Pathology



# Congenital Pathology: The Primary Palate



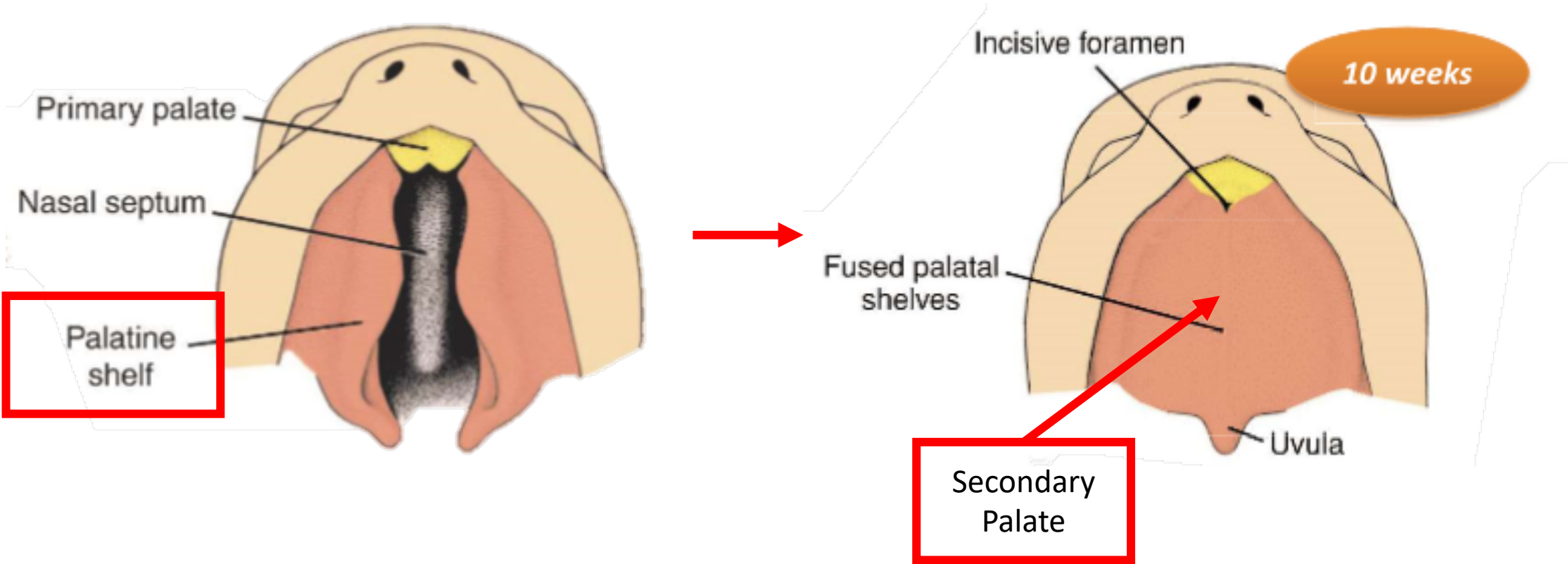
# Congenital Pathology: Cleft Lip



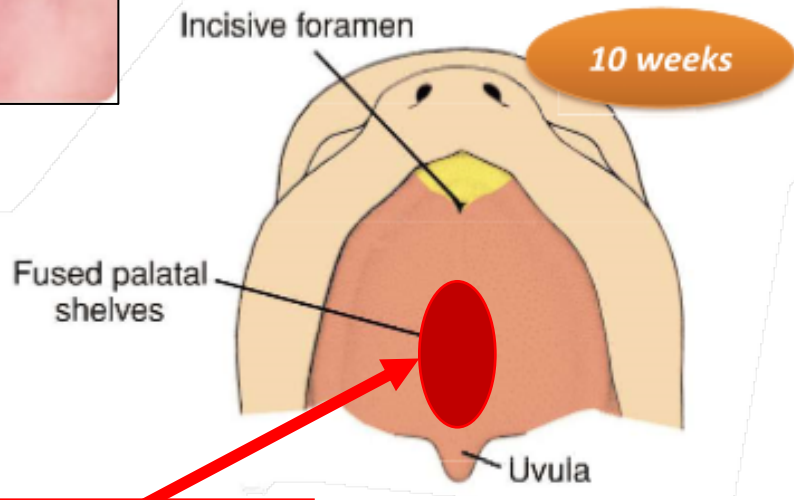
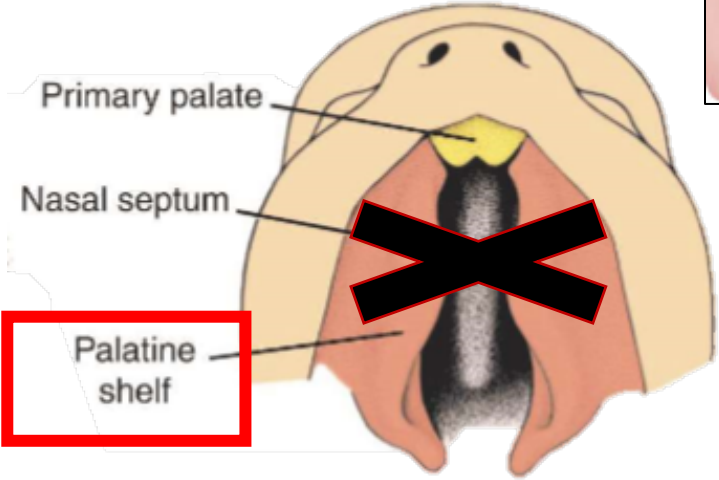
*Failed formation of the primary palate → Cleft lip*



# Congenital Pathology: Secondary Palate



# Congenital Pathology: Cleft Palate



Secondary Palate Failure

## Congenital Pathology: **Cleft Lip & Palate**

<b>Processes</b>	<b>Forms</b>	<b>Failure to fuse</b>
Lateral Nasal Processes + Maxillary Processes	Nasolacrimal groove	Oblique Facial Cleft
Medial Nasal processes	Fuse to form Intermaxillary segment (forms the: Philtrum (middle part of lip), maxilla, and primary palate)	Medial Cleft Lip
Lateral Maxillary processes + fused medial nasal processes	Continuous upper lip	Lateral Cleft lip
Lateral Maxillary Processes	Fuse to form secondary palate	Cleft palate
Palatine shelves of maxilla + intermaxillary segment	Palate	Cleft palate

**Unilateral defects are most common!**

# Oral Health

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Pathology of the  
Oral Cavity

Lesions

Congenital

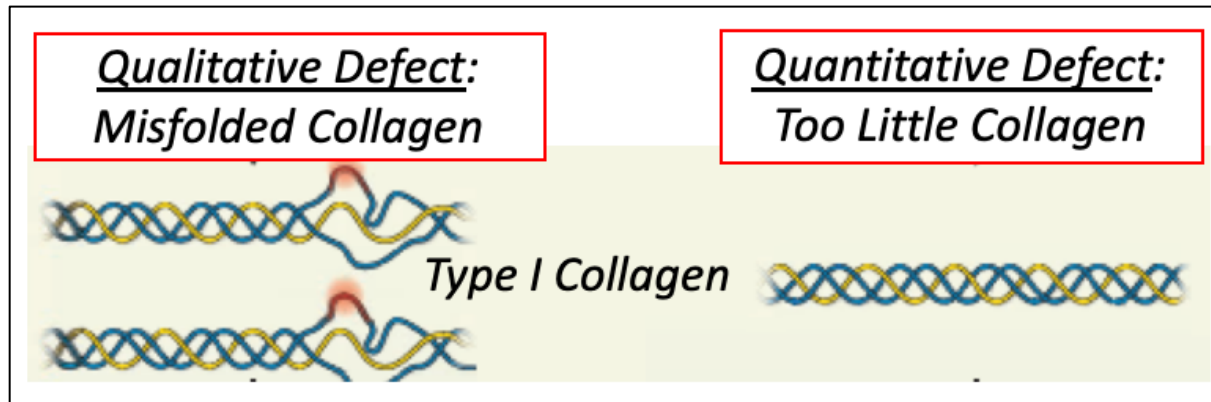
Salivary  
Pathology

Dental  
Pathology

Other

1. Cleft Lip
2. Cleft Palate
3. **Osteogenesis Imperfecta**
4. **Congenital Syphilis**

# Congenital Pathology: Osteogenesis Imperfecta



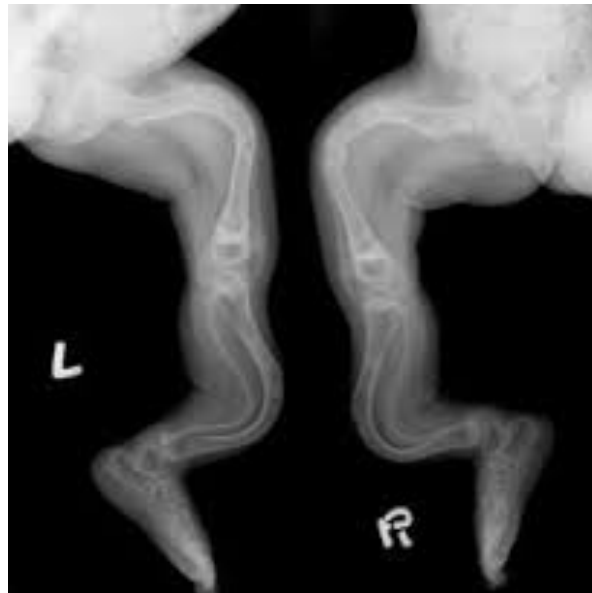
**B  
I  
T  
E**

# Congenital Pathology: Osteogenesis Imperfecta

**B = Bones**

**I  
T  
E**

- Multiple fractures



# Congenital Pathology: Osteogenesis Imperfecta

**B = Bones**  
**I = Eye**  
**T**  
**E**

- Multiple fractures
- Blue sclera

*Collagen failure → visible choroidal veins*



# Congenital Pathology: Osteogenesis Imperfecta

**B = Bones**  
**I = Eye**  
**T = Teeth**  
**E**

- Multiple fractures
- Blue sclera
- Opalescent teeth

Dentinogenesis imperfecta



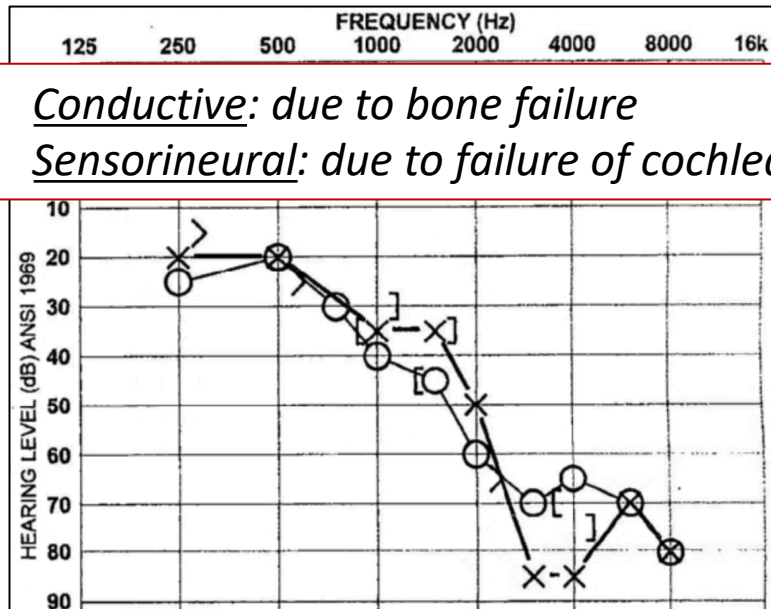


# Congenital Pathology: Osteogenesis Imperfecta

**B = Bones**  
**I = Eye**  
**T = Teeth**  
**E = Ear**

- Multiple fractures
- Blue sclera
- Opalescent teeth
- Hearing loss

- Conductive: due to bone failure
- Sensorineural: due to failure of cochlea



Dentinogenesis imperfecta



# Congenital Pathology: Syphilis

- **Mulberry molars**
- **Hutchinson Teeth**



## Congenital Pathology: Syphilis

- **Mulberry molars**
- **Hutchinson Teeth**



## Congenital Pathology: Syphilis



- **Mulberry molars**
- **Hutchinson Teeth**



# Oral Health

for USMLE Step One

Pathology of the  
Oral Cavity

Lesions

Congenital

Salivary  
Pathology

Dental  
Pathology

Other

1. Cleft Lip: Failure of Primary Palate
2. Cleft Palate: Failure of Secondary Palate
3. Osteogenesis Imperfecta: Failure of Type I collagen (BITE)
4. Congenital Syphilis: Mulberry molars, Hutchinson teeth

# Oral Health

for USMLE Step One

Pathology of the  
Oral Cavity

Lesions

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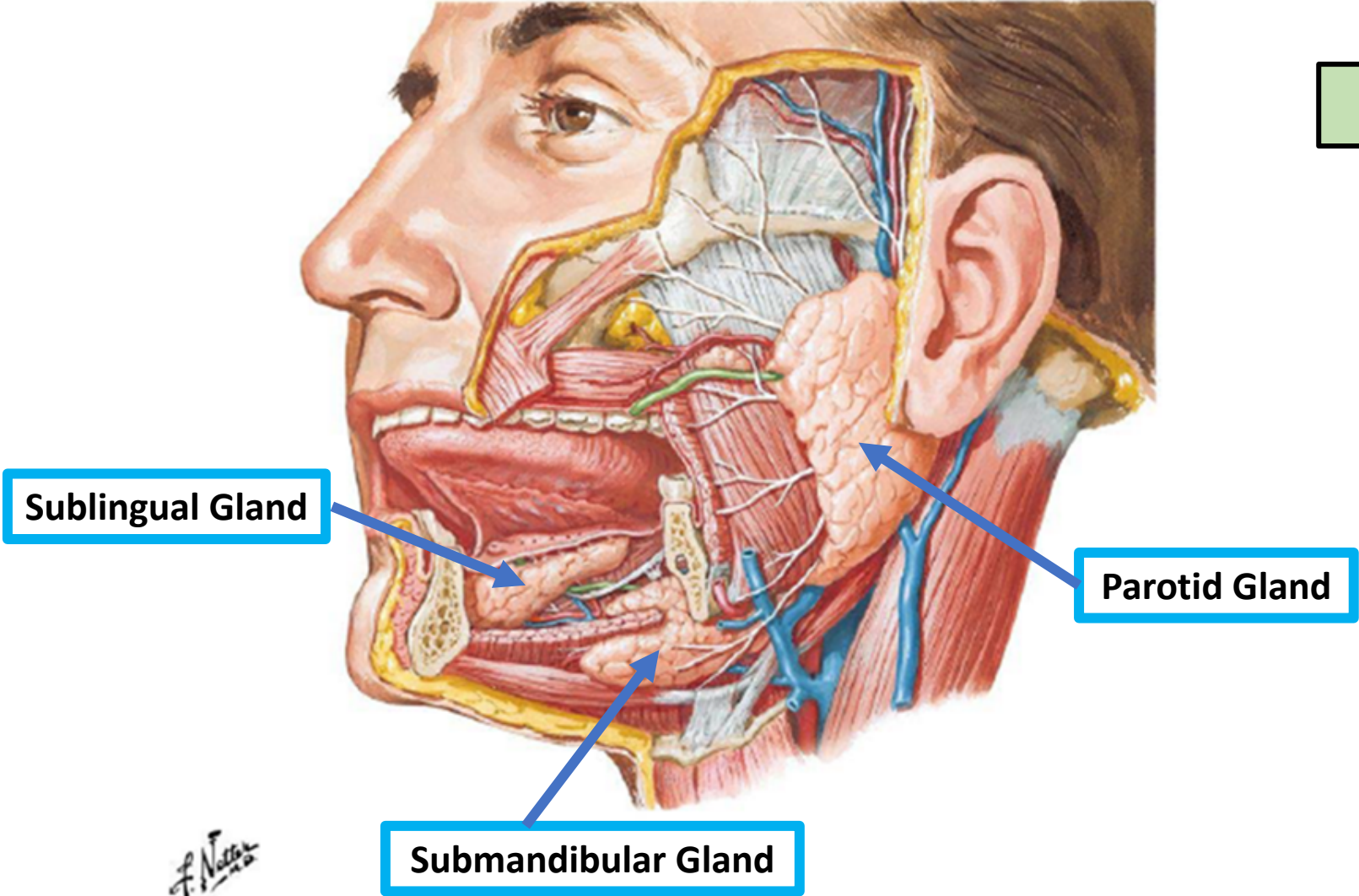
Dental  
Pathology

Other

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  1. Infection
  2. Obstruction
2. Tumors
  1. Benign
  2. Malignant

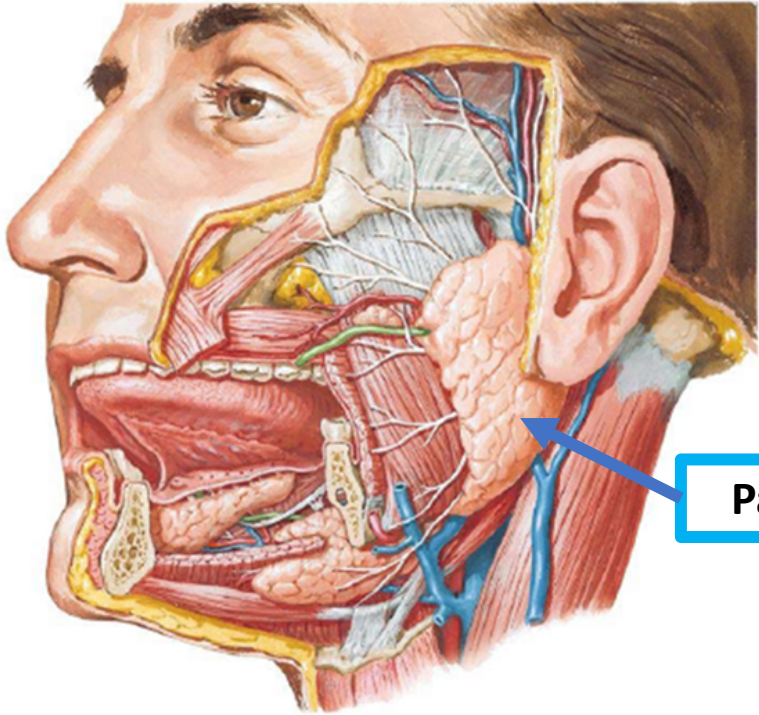
Salivary Pathology

Sialadenitis



Salivary Pathology

Viral Infection



Parotid Gland



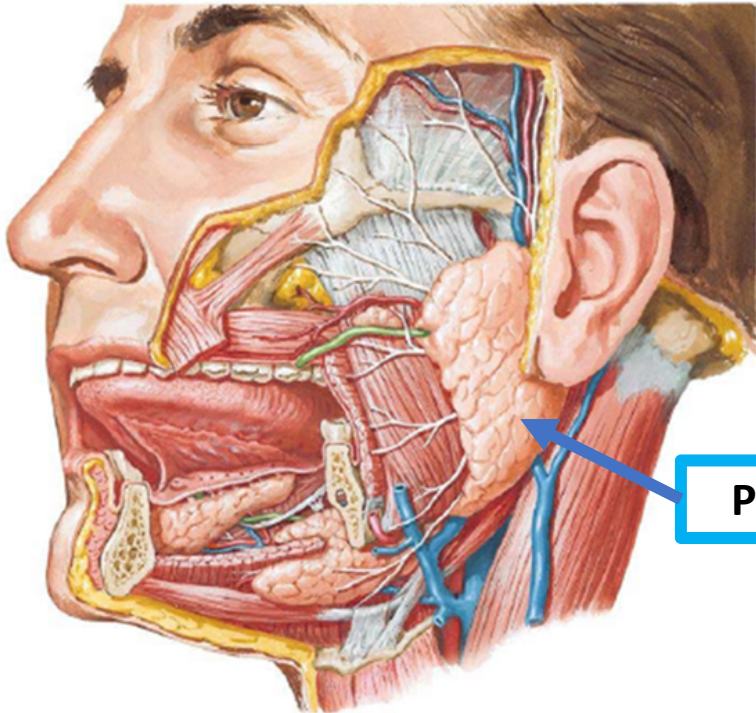
Parotitis

F. Netter



# Salivary Pathology

## Bacterial Infection

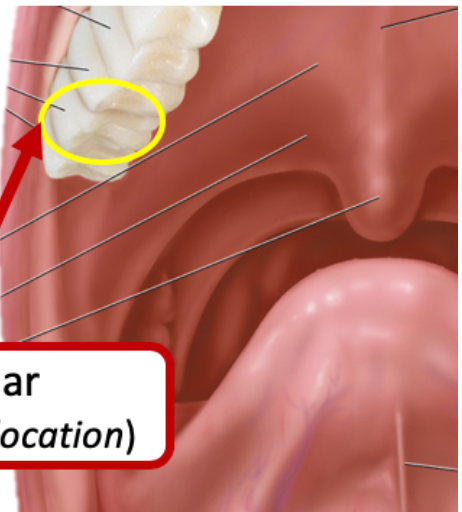


**Parotid Gland**

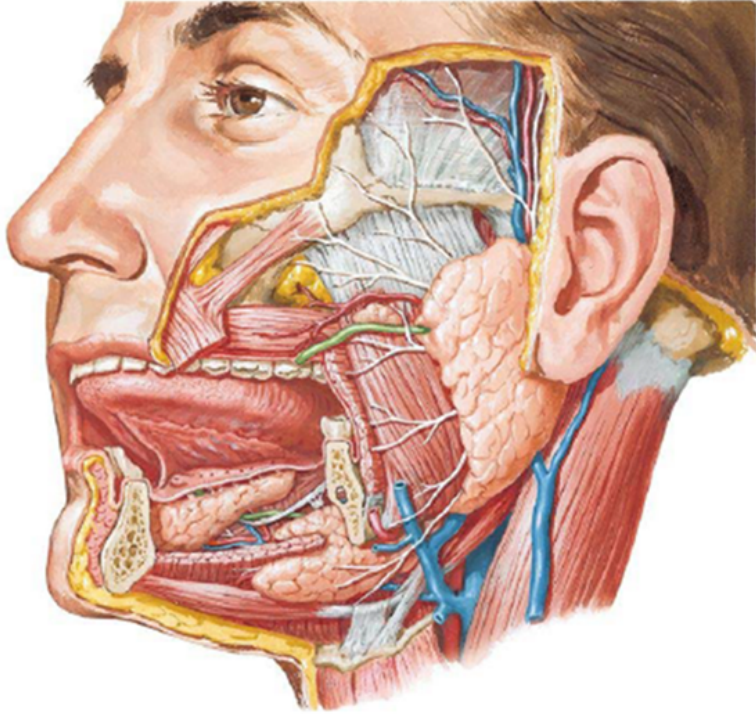


**Pyogenic=bacterial**

**Parotitis**



**2<sup>nd</sup> Molar  
(Parotid duct location)**



## Salivary Pathology

### Obstructive Sialadenitis

- Stones
- Narrowing of salivary duct

## Salivary Pathology

### Obstructive Sialadenitis

- Stones
- Narrowing of salivary duct

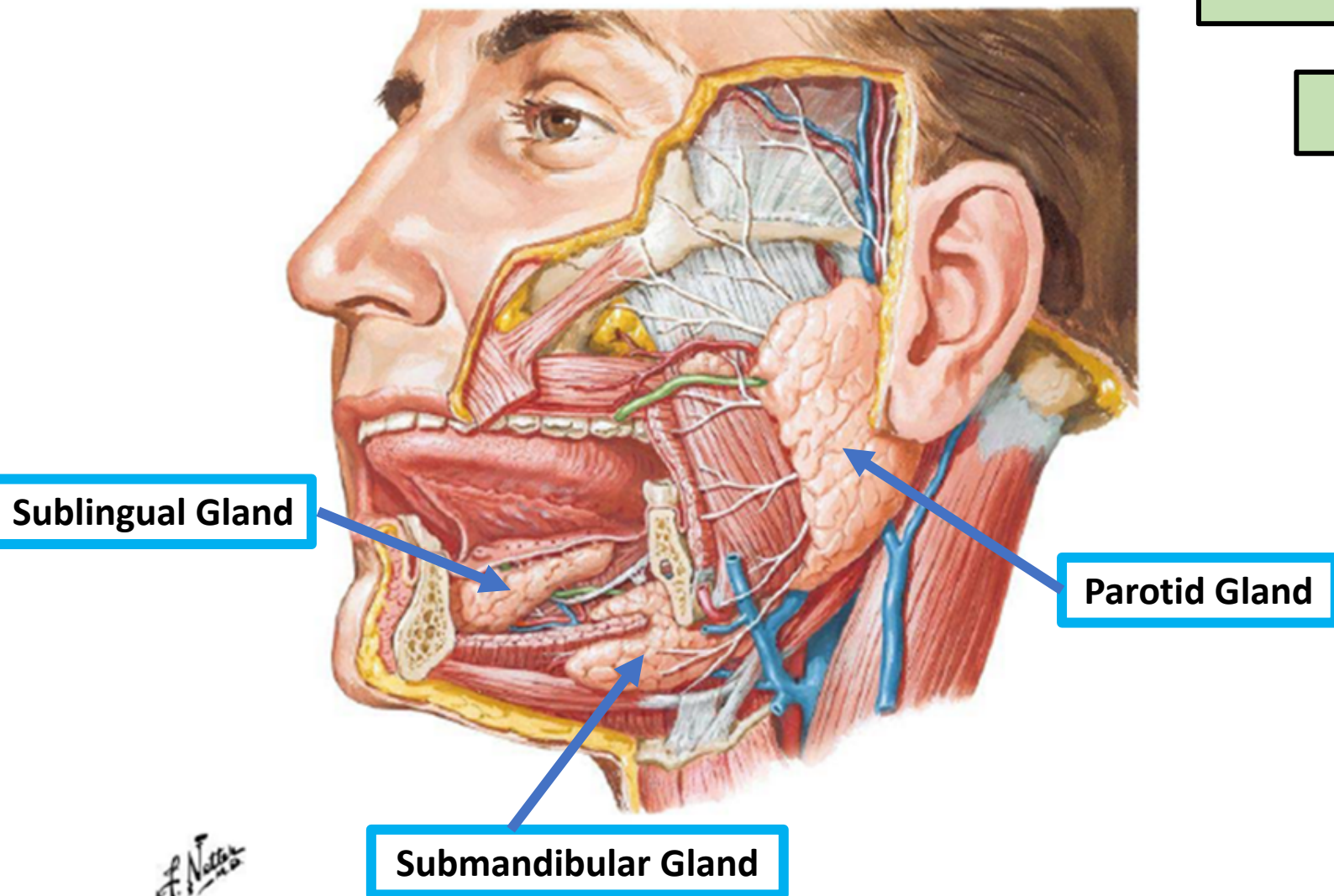
### Presentation

- Pain especially when eating
- Swelling



# Salivary Pathology

## Tumors



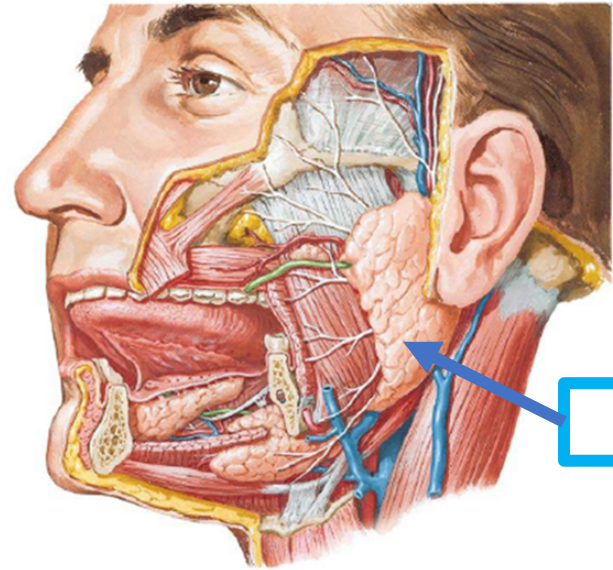
Sublingual Gland

Parotid Gland

Submandibular Gland

# Salivary Pathology

## Tumors



Parotid Gland

Painless mass

Benign:

- **Pleomorphic Adenoma**
- **Warthin Tumor**

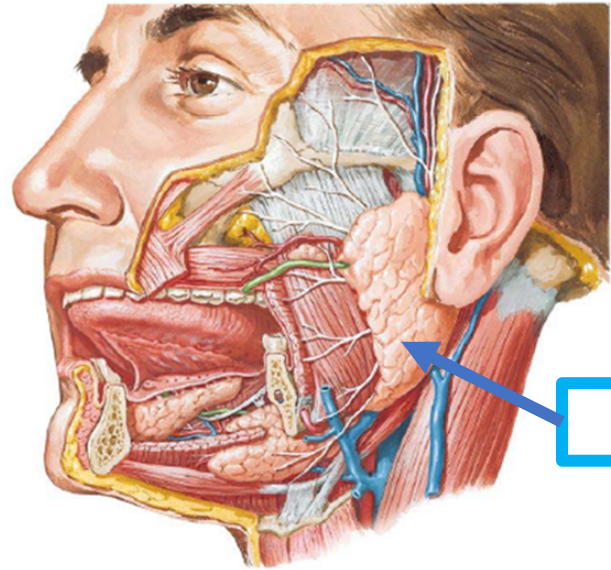
Malignant:

- **Mucoepidermoid Carcinoma**

F. Netter

# Salivary Pathology

## Tumors



Parotid Gland

### Benign:

- Pleomorphic Adenoma
- Warthin Tumor

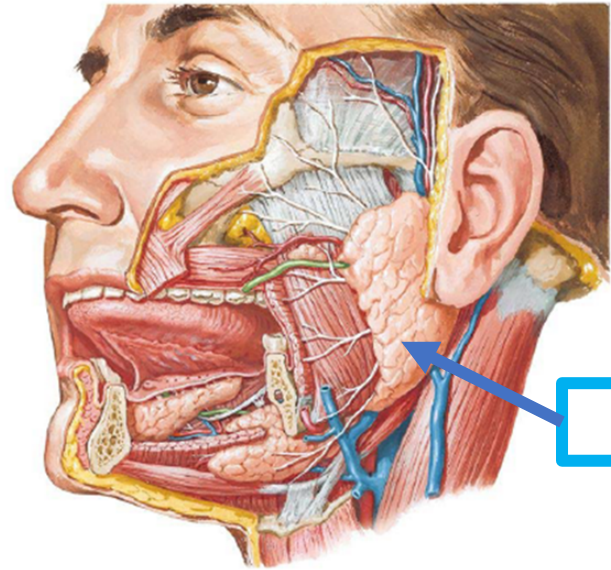
### Malignant:

- Mucoepidermoid Carcinoma

Painless mass

Facial pain=nerve involvement=malignancy

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Parotid Gland

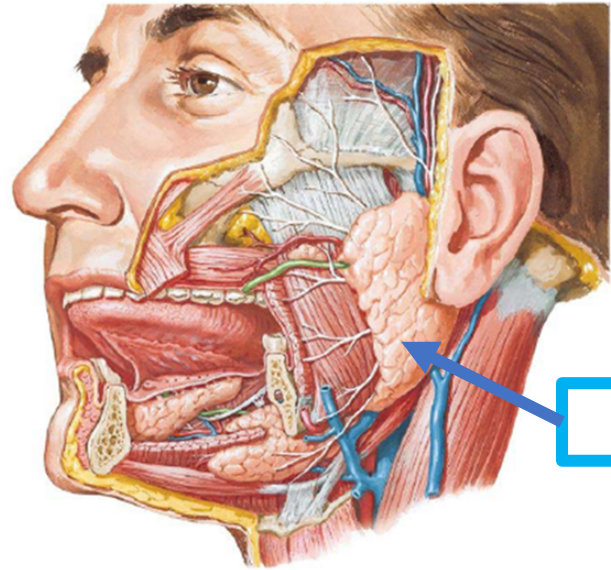
## Salivary Pathology

### Tumors

Benign:

- **Pleomorphic Adenoma**
- Warthin Tumor

- Most **Common**
- Mixed cell tumor
- **Recurrent**
- Malignant potential



Parotid Gland

## Salivary Pathology

### Tumors

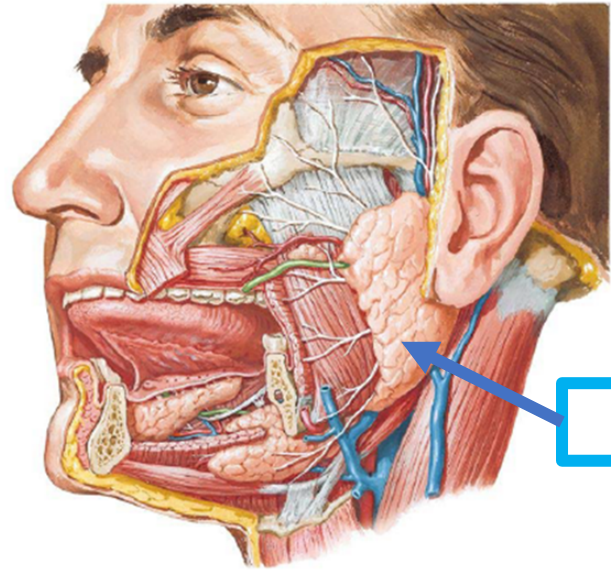
#### Benign:

- Pleomorphic Adenoma
- **Warthin Tumor**

- Most **Common**
- Mixed cell tumor
- **Recurrent**
- Malignant potential

- Papillary **CYST**adenoma Lymphomatosum
- **Cystic** tumor
- Associated with **smoking**





**Parotid Gland**

## Salivary Pathology

### Tumors

#### Malignant:

- **Mucoepidermoid Carcinoma**

**Facial pain=nerve involvement=malignancy**

- Most common malignancy
- Mucinous & squamous cells
- Good prognosis if caught early

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## Pathology of the Oral Cavity

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