

January 26<sup>th</sup> 2020

## Reactive & Neoplastic Oral Soft Tissue Tumors

Dr. Natheer Al-Rawi

Fibrous Tissue

Fat Tissue

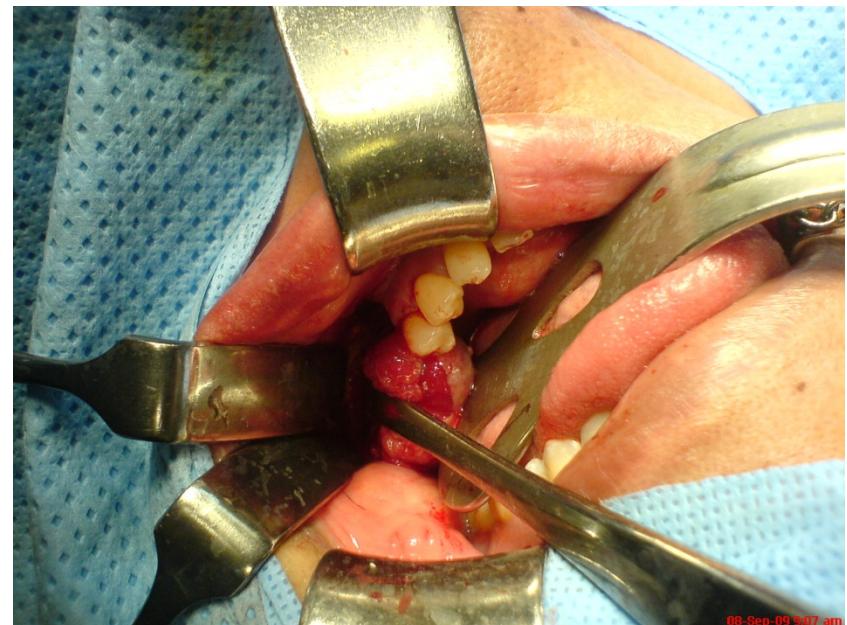
Neural Tissue

Muscular Tissue

Vascular Tissue

## Learning Objectives:

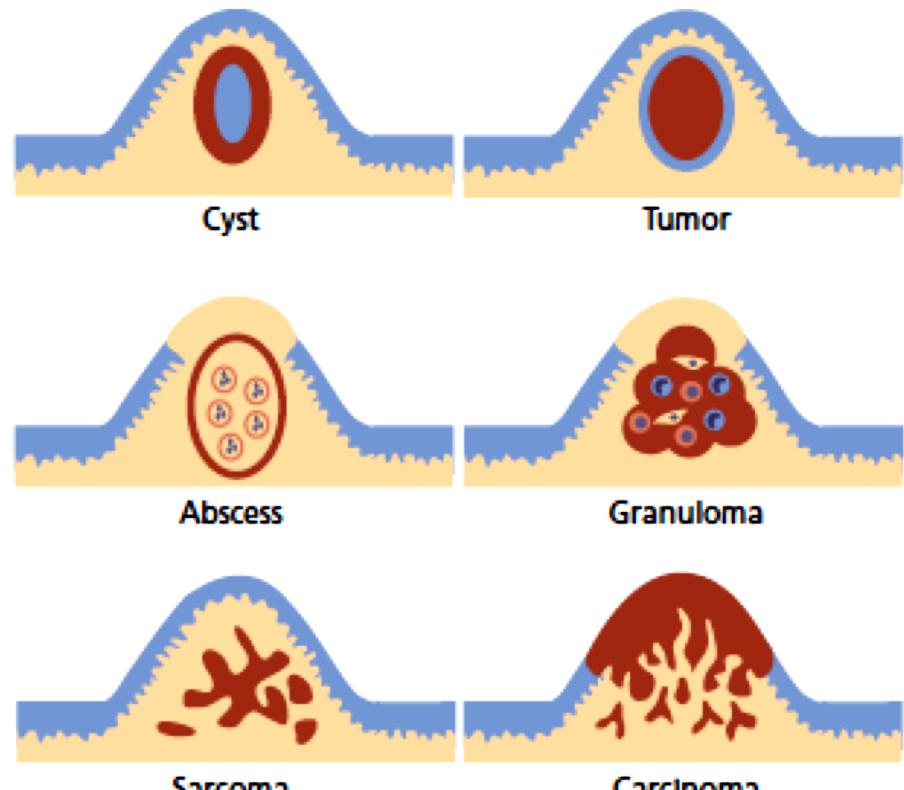
- Understand the clinical, histological and the treatment of different oral soft tissue tumors.
- Determine the causes of these lesions.
- Ability to classify these tumors according to their tissue of origin



# Swelling & tumors of Oral Cavity

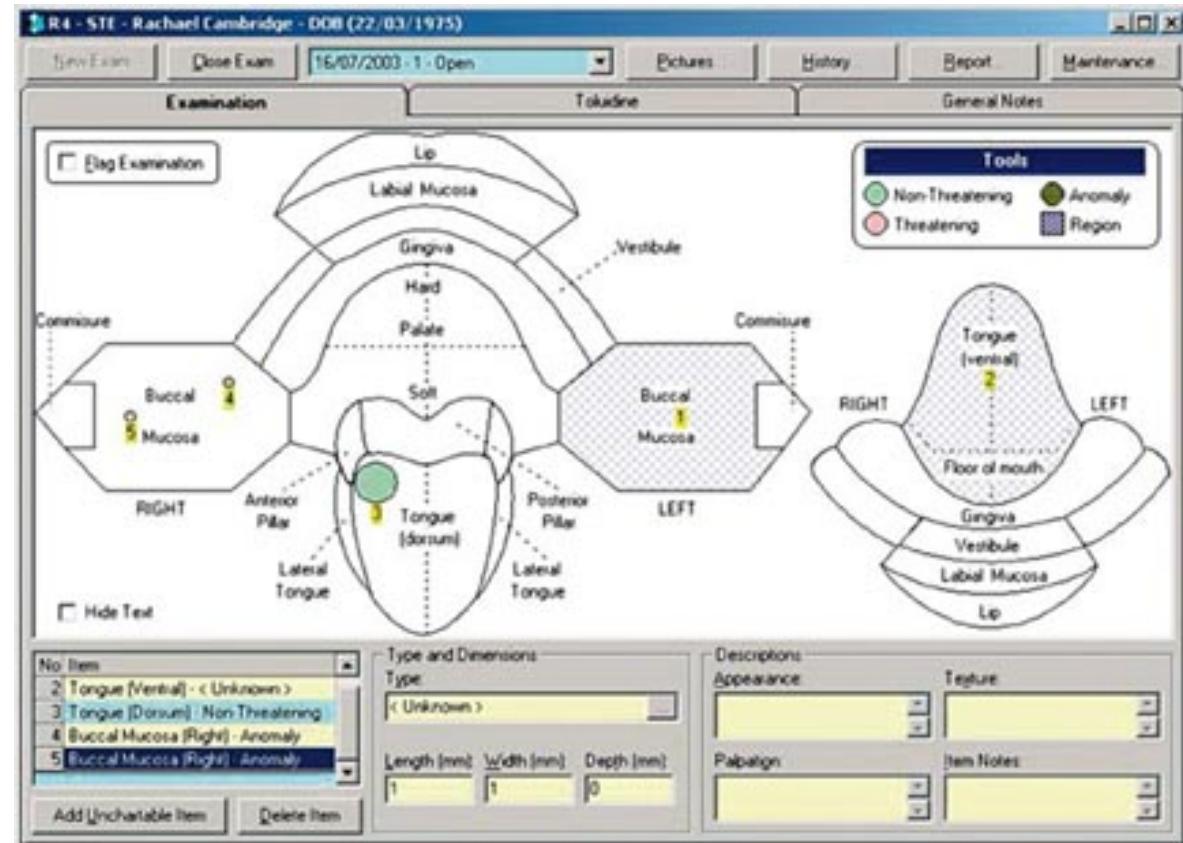
This includes:

- Cysts
- Mucous Extravasation & Retention minor SG lesions.
- Foci of Granulation Tissue & inflammation.
- Abscesses
- CT proliferation
- Infiltrative sarcoma
- Carcinomas



# Clinical CC of any soft tissue swelling:

- Location
- Coloration
- Surface texture
- Coloration
- Palpable nature



## ➤ Location

Site	Type of Lesion
Lip& Buccal Mucosa	Fibroma, mucocele, mesenchymal tumors, SGT, SCC
Gingiva	Parulis, Pyogenic granuloma, Peripheral fibroma, PGCG, POF, Gingival cyst, Peripheral odontogenic tumors, SCC
Palate	Abscess, torus, SGT
Dorso- lateral tongue	Fibroma, granular cell tumor, Pyogenic granuloma, SCC
Ventral tongue & FOM	Mucocele, Ranula, lymphoid aggregates, choriostoma, SCC

## ➤ Color

Color	Type of Lesion
Blue purple	Hemangioma, varix, hematoma, PGCG, Mucocele, Kaposi Sarcoma
Red	Hemangioma, Pyogenic granuloma, Kaposi sarcoma
Brown	Nevus, hematoma, seborrhic keratosis, Kaposi sarcoma, Melanoma
Black	Melanoma
Yellow orange	Lymphoid aggregates, Lympho epithelial cyst, lipoma, Granular cell tumor

## ➤ Palpation Characteristic

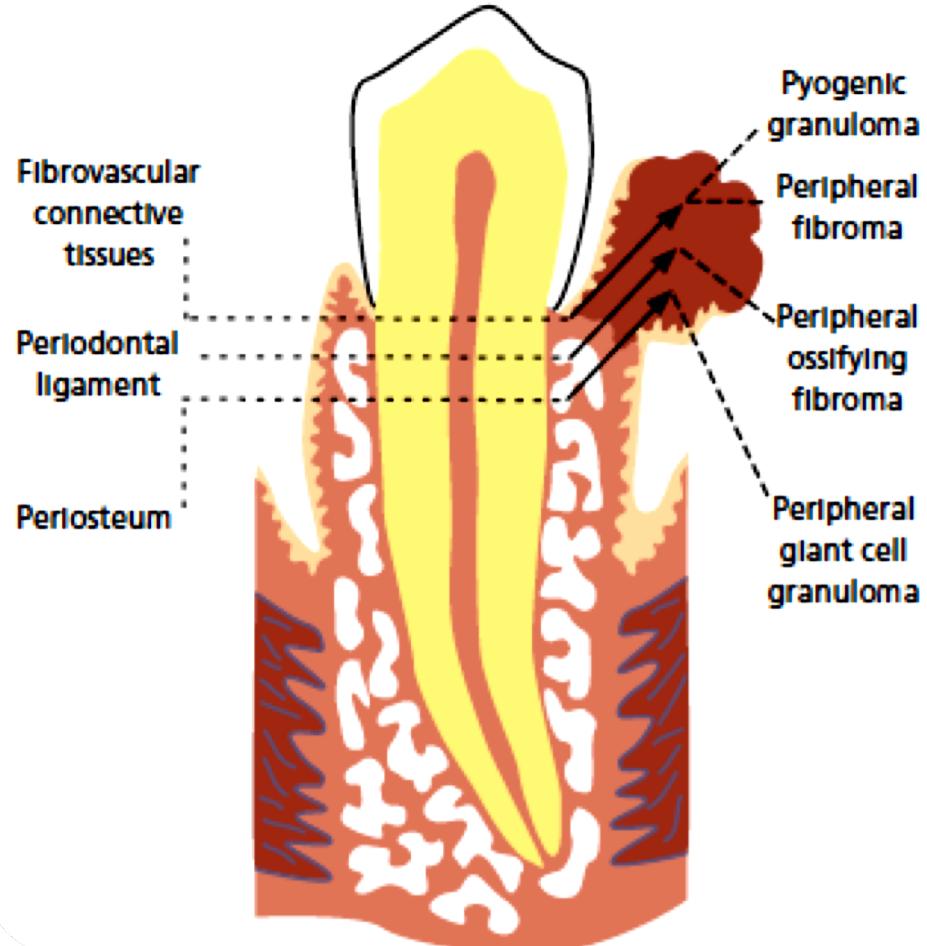
Palpation CC	Mass
Soft, Fluctuant	Mucocele, Ranula, Developmental cysts, sialocysts, gingival cysts, Parulis, space infection & abscess
Soft, Non-fluctuant	Lipoma, Fibroma, Organized mucocele
Firm, movable	Mesenchymal tumor, granulomas, salivary adenomas
Firm ,Fixed	Granular cell tumor, seborrhic keratosis, keratoacanthoma , fibromatosis
Indurated, fixed	BCC, salivary Adenocarcinoma, SCC, Melonoma, Sarcoma, lymphoma

➤ Frequency:

- Majority of Oral Submucosal massess are : Reactive Proliferation (e.g, fibrous hyperplasia, Pyogenic granuloma, Mucous extravasation and retention cysts).
- Uncommon: Mesenchymal & SGT
- Rare: Lymphomas & Sarcomas



# Epulidis



# REACTIVE HYPERPLASTIC FIBROUS TISSUE LESIONS

## 1. FIBROMA (Irritation fibroma, Traumatic fibroma, Fibrous Hyperplasia)

True neoplasm or reactive hyperplasia of fibrous CT in response to local irritation.

### Clinical features:

**Site** Buccal mucosa along the bite line, followed by labial mucosa tongue & gingiva

*Smooth-surfaced pink nodule, similar in color to the surrounding mucosa.*

Most fibromas are **sessile** some are pedunculated.

**Size:** few mm.to several cm. (average 1.5 cm.)

*Symptomless unless secondary traumatic ulceration of the surface had occurred.*

**Age of onset:** 4th to 6th. Decades of life.

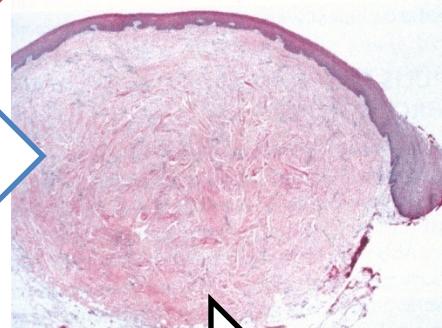


# Histopathology:

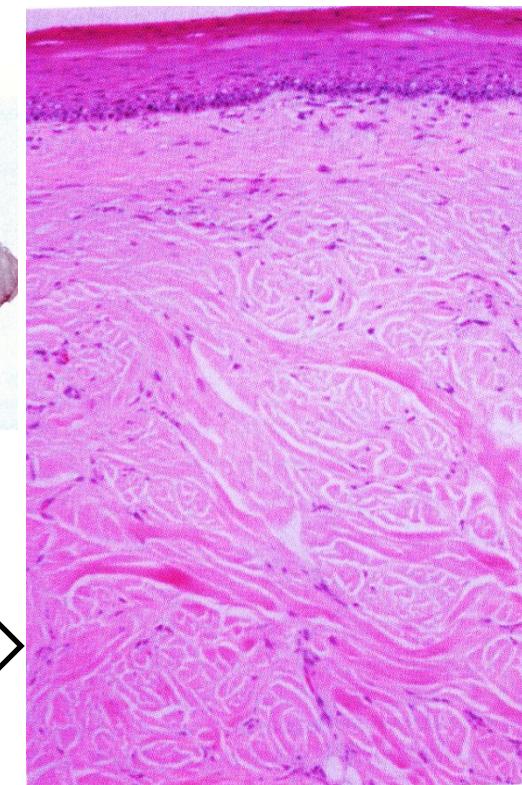
- Nodular mass of fibrous CT covered by stratified squamous epith. which may show atrophy of the rete ridges



- The CT is usually dense & collagenized with scattered chronic inflammatory cells



- Lesion is not encapsulated.
- Collagen bundles arranged in radiating, circular or haphazard fashion.



**Traetment:** Surgical Excision Dr. Natheer Al-Rawi

## 2. Giant Cell Fibroma:

### Clinical Features:

*Asymptomatic sessile or pedunculated nodules,*

**Site:** 50% of all cases present in **gingiva**, with **mandibular gingiva** is affected as twice as maxillary gingiva.

**Tongue & palate** are also common site.

**Size:** less than 1cm in size.

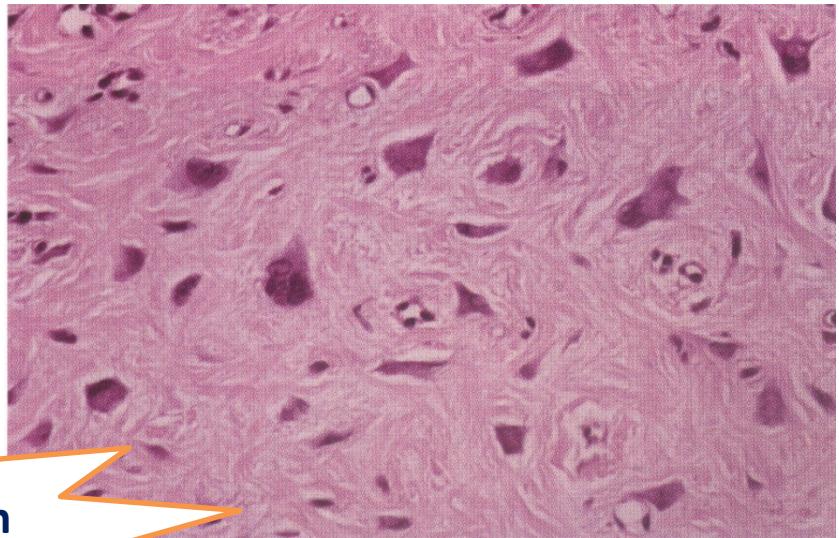
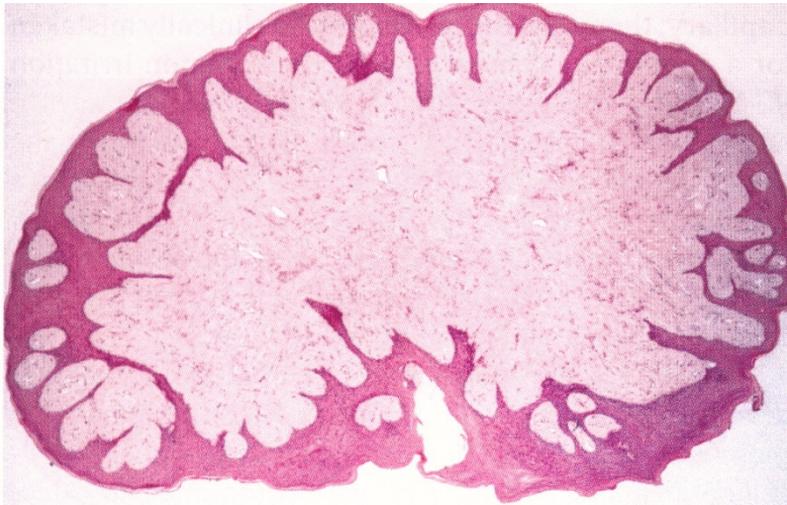


### **Age of onset:**

Involve younger age than Irritation fibroma. With female predilection.

# Histopathology:

- A mass of **fibrous CT** which is usually loosely arranged.
- Presence of numerous large, **stellate fibroblasts** within the superficial CT.
- These cells may contain **several nuclei**.
- Covering epith. Is **thin & atrophic**, with **some rete ridges** that appear narrow & elongated.



## Treatment:

Surgical excision with rare recurrence.

### 3. EPULIS FISSURATUM (Denture Epulis, Inflammatory Fibrous hyperplasia)

**Tumor-like hyperplasia of fibrous CT that develops in association with the flange of an ill-fitting complete or partial denture.**

#### Clinical Features:

**Single or multiple folds** of hyperplastic tissue in the alveolar vestibule.

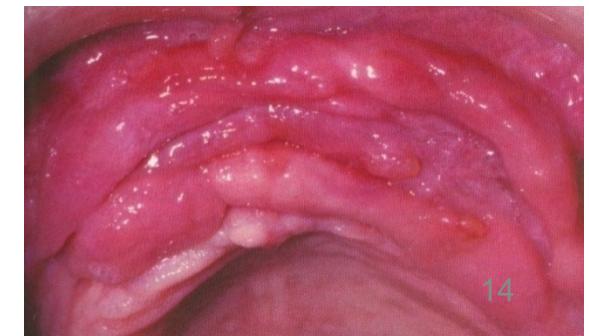
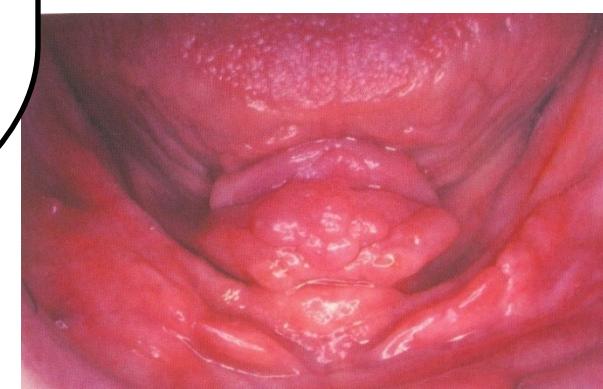
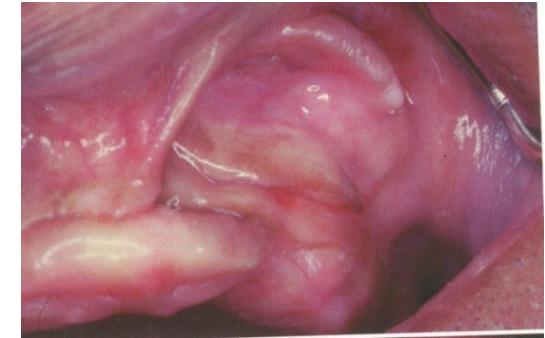
There are 2 folds of tissue, & the flange of the associated denture fits conveniently into the fissure between the folds of tissue.

This **tissue is firm & fibrous** but sometimes appear **erythematous & ulcerated** (similar to **pyogenic granuloma**)

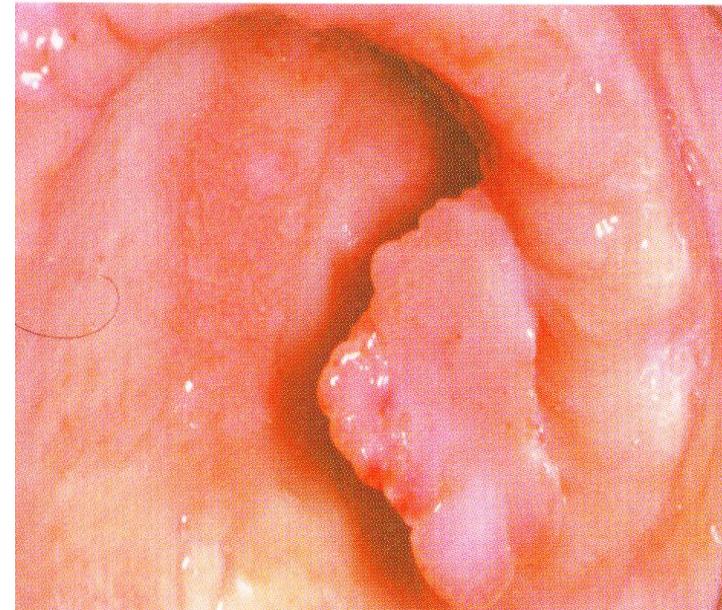
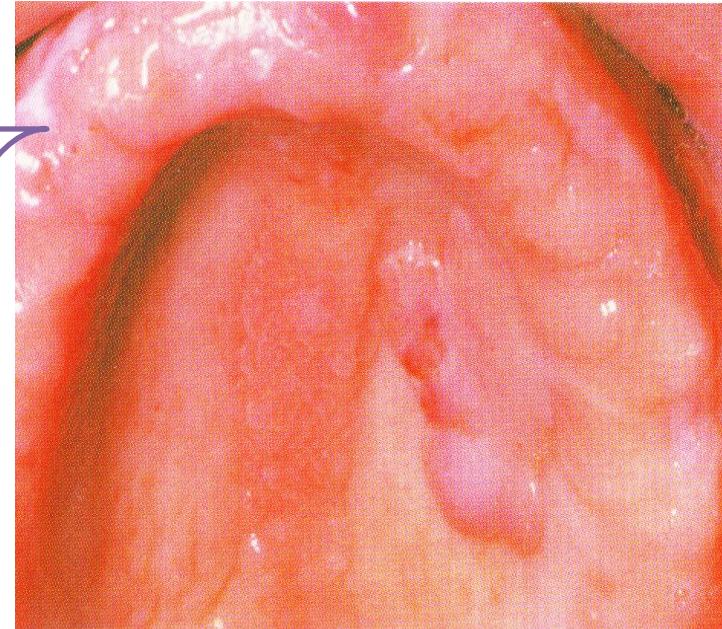
**Site:** Facial aspect of the alveolar ridge especially the anterior portion of the jaw.

**Size:** From less than 1cm. to massive lesion that involve most of the length of the vestibule.

**Age of onset:** Middle aged & older adults with ill-fitting dentures. With female predilection.

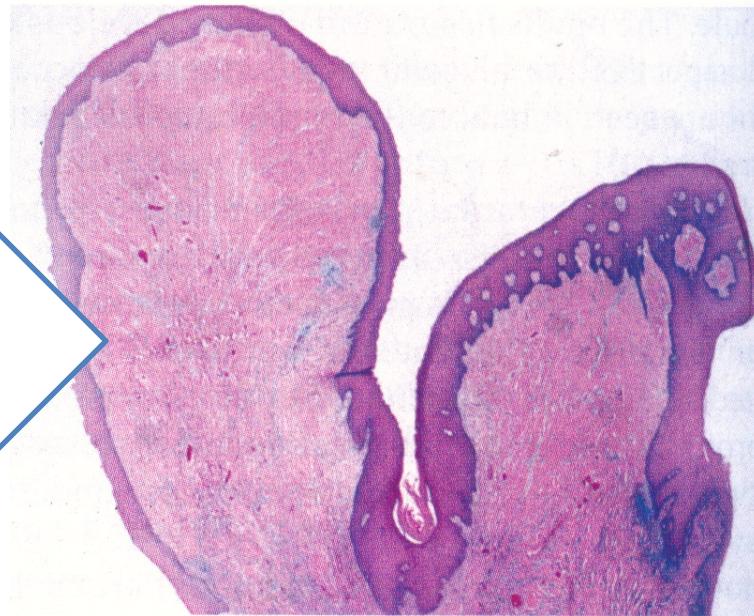


Another **similar lesion** but less common fibrous hyperplasia is called **Fibro-epithelial polyp** or **leaf-like denture fibroma**, which occurs on the **hard palate beneath a maxillary denture**, as *flattened pink mass that is attached to the palate by a narrow stalk*. The edge of the lesion is often serrated & resembles a leaf.



## Histopathology:

- Hyperplasia of fibrous CT.
- The overlying epith. Is hyperkeratotic & demonstrates irregular hyperplasia of the rete ridges.
- Pseudo-epitheliomatous hyperplasia may be seen especially at the base of the grooves between the folds.
- Variable chronic inflammatory cell infiltrate is present.
- Rarely, osteoid or chondroid tissues is observed ( osseous & chondromatous metaplasia).



**Treatment:** Surgical removal with relining or remodeling the ill-fitted dentures to prevent recurrence.

#### 4. Inflammatory Papillary Hyperplasia (Denture Papillomatosis)

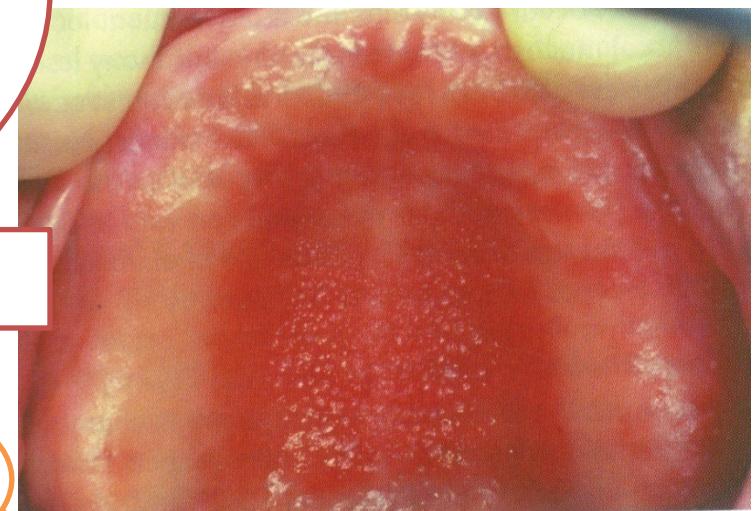
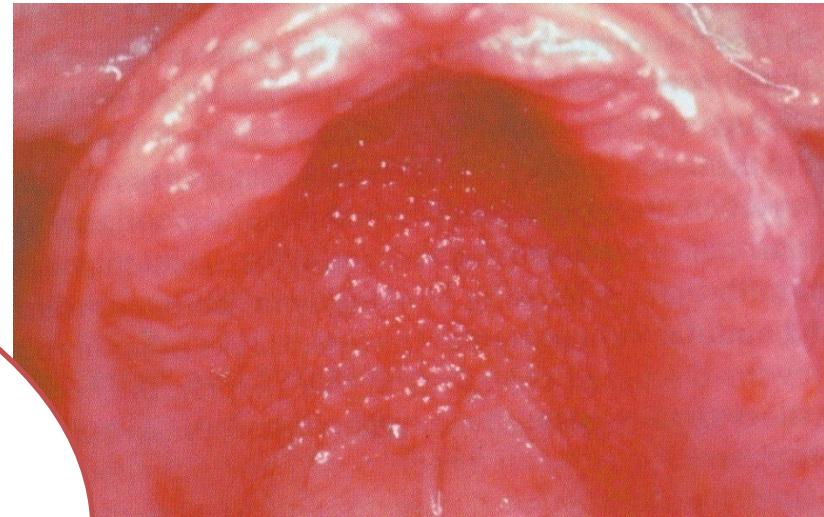
*Reactive tissue growth that sometimes develops beneath a denture.*

The condition most often appears to be related to the following:

- An ill-fitting denture.
- Poor denture hygiene.
- Wearing the denture 24 hours a day.
- Candida also has been suggested as a cause, but any possible role appears uncertain.

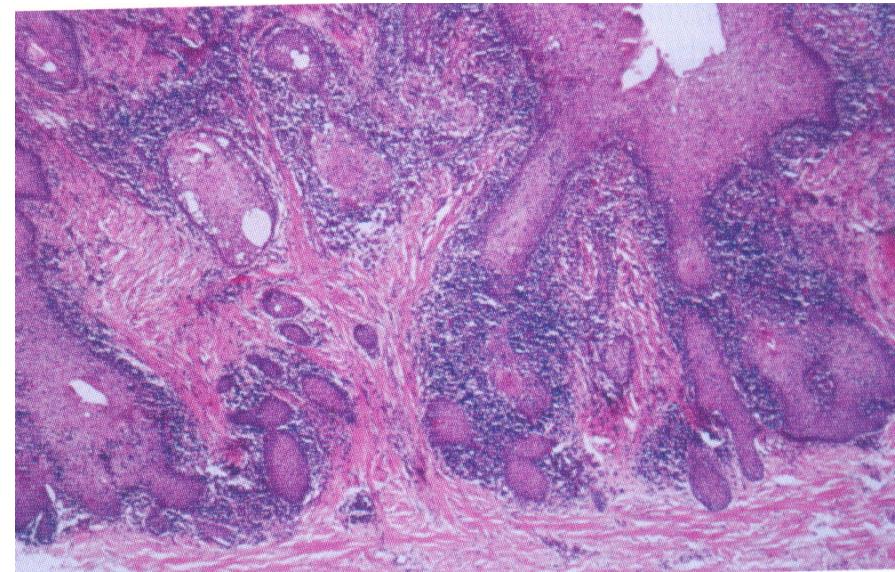
**Clinical Features:**  
**Asymptomatic**, erythematous & has a **papillary** surface

**Site:** hard palate beneath the denture base.



### Histopathology:]

- Numerous papillary growths on the surface that are covered by hyperplastic stratified squamous epith.
- In advanced cases, **pseudoepitheliomatous hyperplasia** mistaken for carcinoma)
- The CT can vary from loose & edematous to densely collagenized.
  - Chronic inflammatory cells infiltrate.

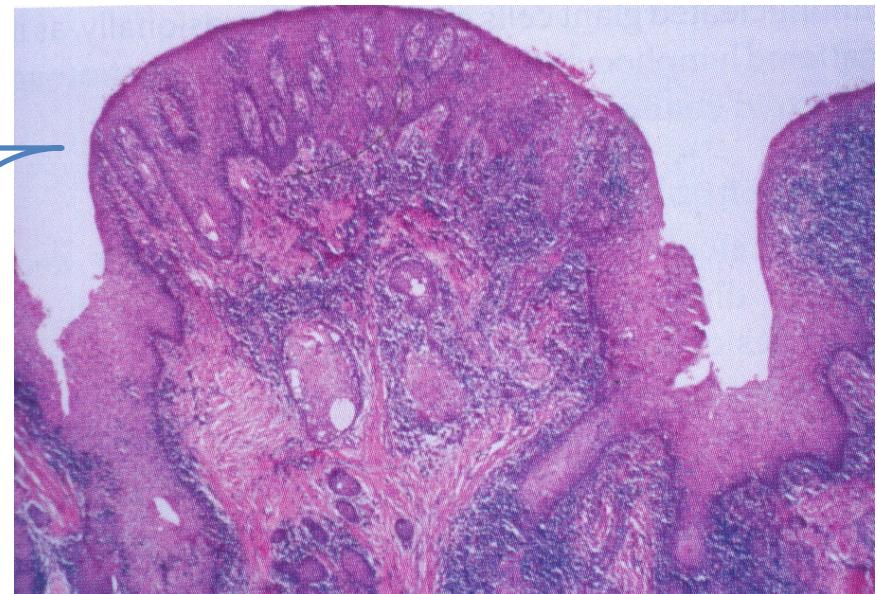


### Treatment:

Very early lesion: removal of the denture to let the condition subside & tissue resume a normal appearance.

Topical & systemic antifungal therapy.

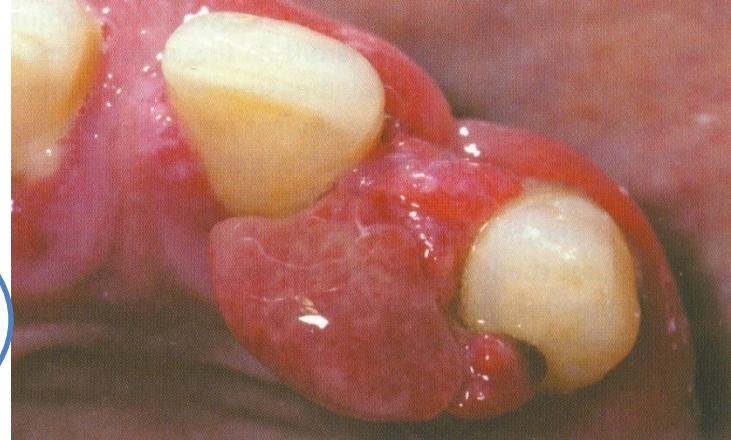
Advanced lesions: Excision of the hyperplastic tissue before fabricating a new denture.



## 5. Pyogenic Granuloma:

*Common tumor-like growth of the oral cavity that is considered to be non-neoplastic in nature.*

It represents an exuberant tissue response to local irritation or trauma. Despite its name, it is not true granuloma.



### Clinical Features:

Smooth or lobulated mass that is usually pedunculated, although some lesions are sessile.

The surface is characteristically ulcerated & ranges from pink to red to purple, depending on the age of the lesion.

Young pyogenic granulomas are highly vascular in appearance.

Older lesions tend to become more collagenized & pink.



- **Gingival inflammation & irritation due to poor oral hygiene may be precipitating factor in many patients.**

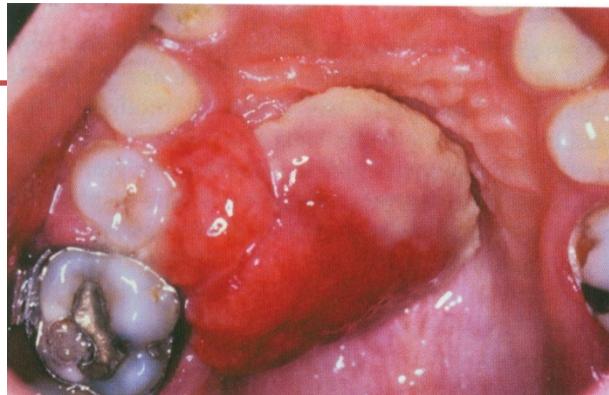
- Lip, tongue & buccal mucosa are the next common sites
- **More common in maxillary gingiva than the mandibular gingiva**
- **Anterior areas are more frequently affected than posterior areas.**
- Facial aspects of gingival is more common than the lingual aspect.
- Some lesions extend between the teeth & involve both the facial & lingual gingiva.

**Size:** they vary from **small growths** of only a few mm. in size to **larger lesions** that may measure several cm. in diameter.

**The mass is painless, although it bleed easily because of extreme vascularity.**

Pyogenic granuloma may exhibit **rapid growth**, which may create **alarm** for both the patient & clinician, who may fear that the lesion might be malignant.

**Age of onset :**Any age, but most common in **young adults & children** with female predilection because of vascular effects of female hormones.

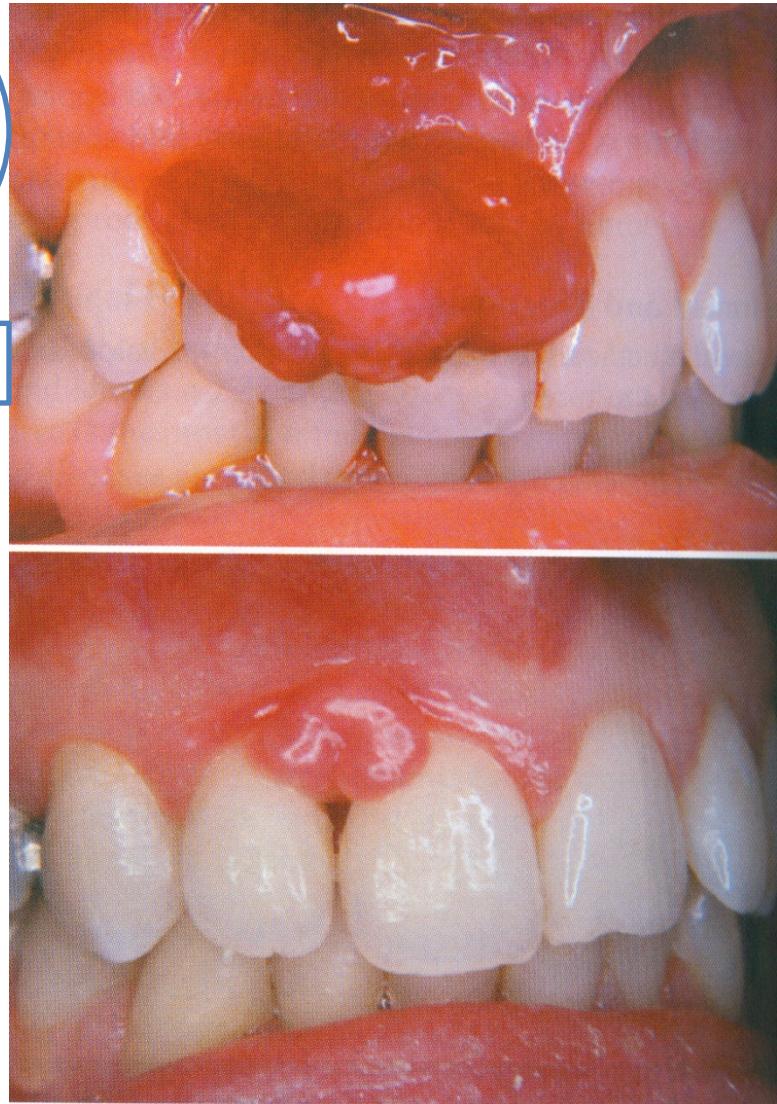


Dr. Natheer Al-Rawi

Pyogenic granulomas of the gingiva frequently develop in pregnant women , so called *Pregnancy tumor or granuloma gravidarum* , it develops during the first trimester & their incidence increases up through the 7th. Month of pregnancy.

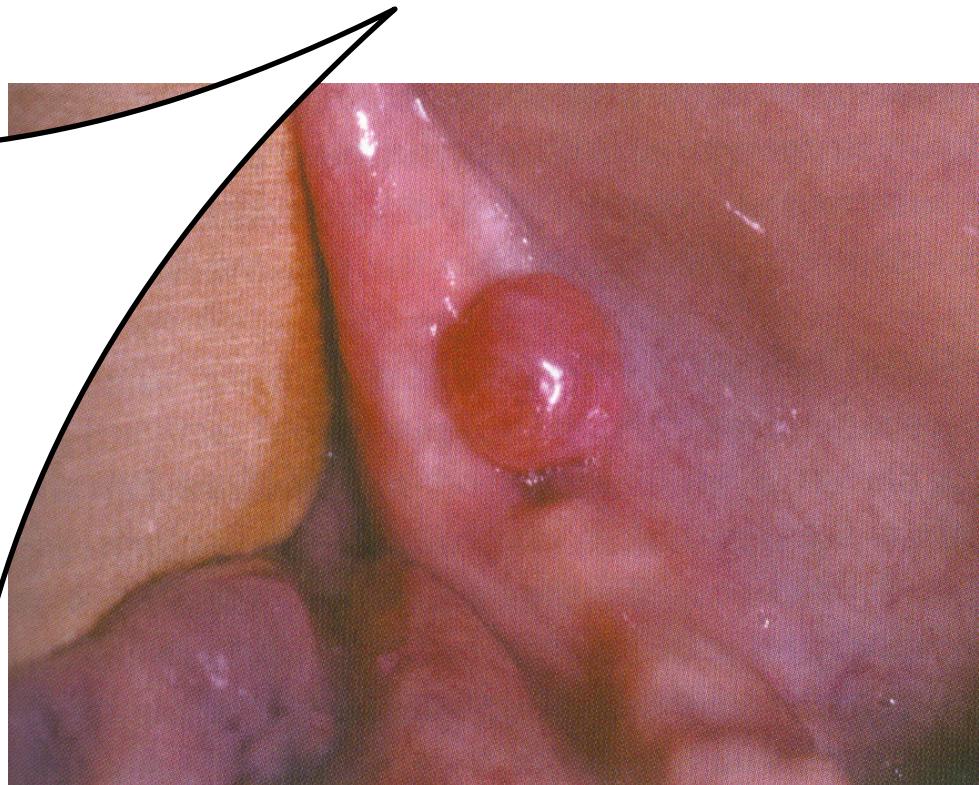
*The gradual rise of these lesions throughout pregnancy may be related to the increasing levels of estrogen & progesterone as the pregnancy progresses.*

After pregnancy & the return of normal hormone levels, some of these pyogenic granulomas resolve without treatment or undergo fibrous maturation & resemble a fibroma.



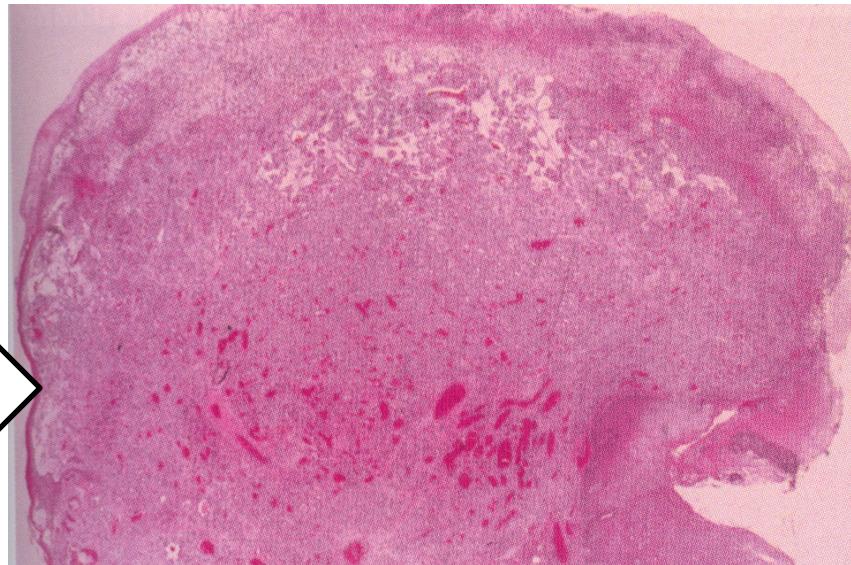
## *Epulis granulomatosa:*

Hyperplastic growths of granulation tissue that sometimes arise in healing sockets, it resemble pyogenic granulomas & usually represent a granulation tissue reaction to bony squestra in the socket

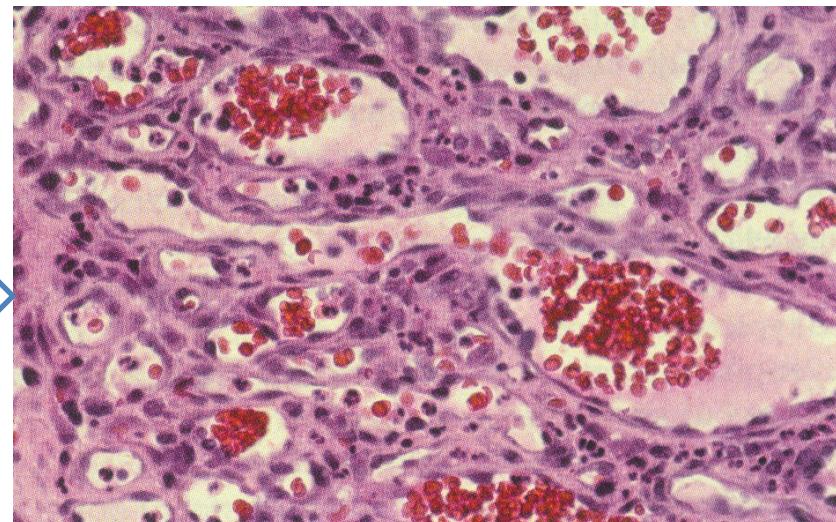


## Histopathology of Pyogenic granuloma:

- Highly **vascular proliferation** that resemble granulation tissue.
- Numerous small & larger **endothelium-lined channels** are formed that are engorged with r.b.c.
- Sometimes these **vessels** are organized in lobular aggregates (**lobular capillary hemangioma**)



- **Mixed inflammatory cell infiltrate**, PMNs are more prevalent near the ulcerated surfaces while plasma cells & lymphocytes are more in deeper areas of the specimen .
- **Older lesion** may have areas with more fibrous appearance.



## Treatment:

- Conservative surgical excision.
- Occasionally the lesion **recurred** & re excision is necessary.
- For **Pregnancy tumor** treatment is usually deferred unless significant functional or esthetic problems develop.
- **High recurrence rate** for pyogenic granuloma removed during pregnancy.

## 6. Peripheral Giant Cell Granuloma (Giant Cell Epulis)

Common tumor-like growth of the oral cavity.

Does not represent a true neoplasm but rather a reactive lesion caused by local irritation or trauma.

It may represent a soft tissue counterpart of Central giant cell granuloma.



### Clinical Features:

- Sessile or pedunculated, may or may not ulcerated.
- Resemble pyogenic granuloma but it is more bluish-purple compared with bright red of typical pyogenic granuloma.
- It may develop in anterior or posterior region of the gingival or alveolar mucosa.
- Mandible is slightly more affected than maxilla.
- Cupping resorption of the underlying alveolar bone sometimes seen.

**Site:** Exclusively in gingival or edentulous alveolar ridge.

Present as a red or reddish-blue nodular mass.

**Size:** Most lesions are smaller than 2cm., although larger ones can be seen occasionally.

**Age of onset:** any age, with peak prevalence in the 5th. & 6th. Decades of life.  
60% in female.

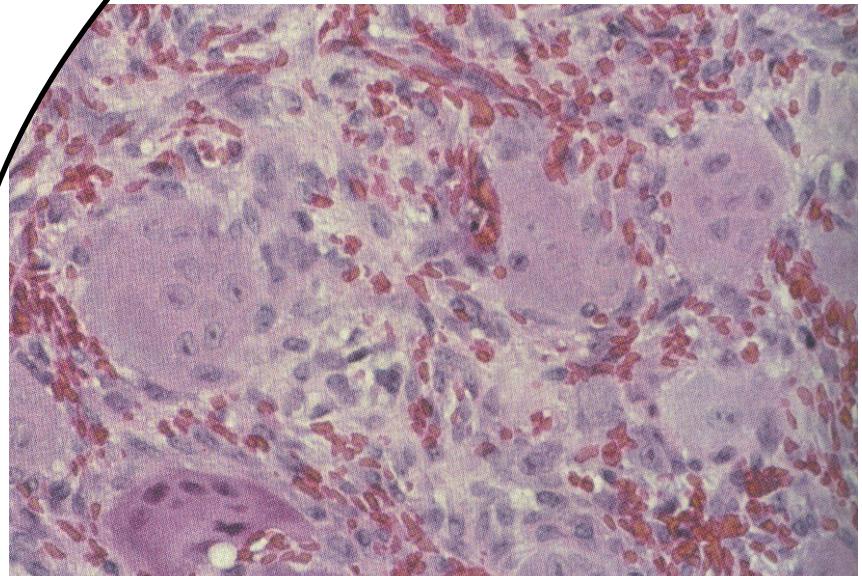
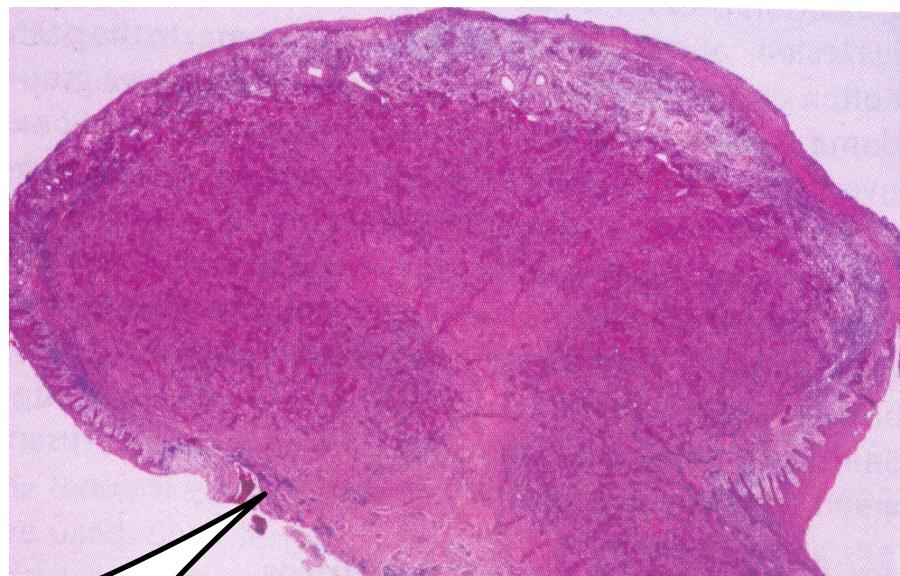


# Histopathology:

- Proliferation of multinucleated giant cells with a background of ovoid & spindle-shaped mesenchymal cells in a fibrous CT stroma
- Abundant hemorrhage is characteristically seen throughout the mass with hemosiderin deposits at the periphery of the lesion.

Surface ulceration in 50% with acute & chronic inflammatory cells infiltrates.

Reactive new bone formation & dystrophic calcification are not unusual.



## Treatment:

Local surgical excision down to the underlying bone.

Adjacent teeth should be carefully scaled to remove any source of irritation & to minimize the risk of recurrence.

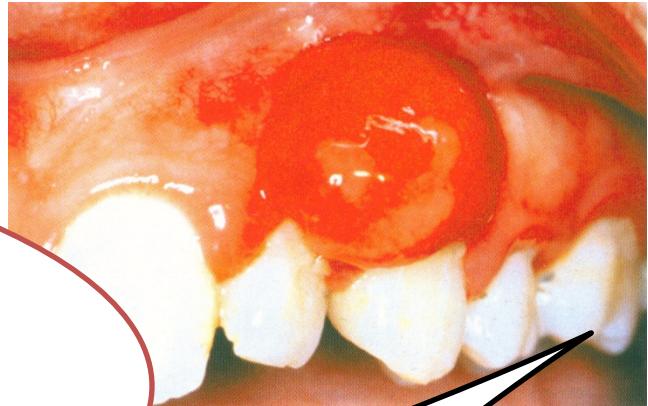
## 7. Peripheral Ossifying Fibroma (Ossifying Fibroid Epulis)

**Common gingival growth that is considered to be reactive rather than neoplastic in nature.**

Pathogenesis is uncertain, but it could develop as pyogenic granuloma that undergo fibrous maturation & subsequent calcification.

**The mineralized product originates from cells of the periosteum or p.d.l.**

It does not represent a soft tissue counterpart of the central ossifying fibroma.



### Clinical Features:

**Site:** Exclusive on gingiva.

As **nodular mass** either **pedunculated or sessile**, that usually originates from the interdental papilla.

The **color** range from **red to pink**, with surface ulceration in some cases.

**Size:** less than 2cm

The lesion has been present for many weeks or months before diagnosis is made..

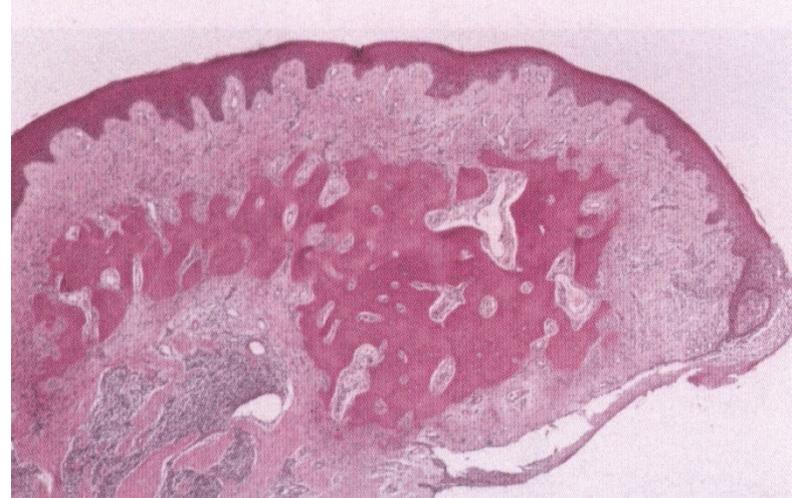
**Age of onset:** Teenagers & young adults (between 10-19 years) with 2/3 of cases affects females.

**More than 50% of cases occur in the incisor-cuspid region.**  
Teeth are not affected.



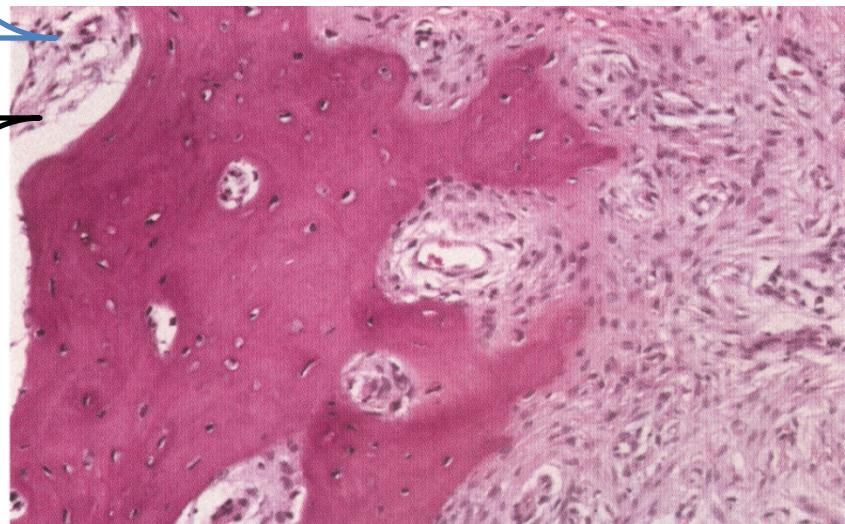
## Histopathology:

- Fibrous proliferation with formation of mineralized products.
- The type of mineralized component is variable & may consist of bone, cementum-like material, or dystrophic calcification .
- The bone is usually woven & trabecular.



## Treatment:

Local surgical excision down to the periosteum because recurrence is more likely if the base of the lesion is allowed to remain.  
Adjacent teeth should be thoroughly scaled to eliminate any possible irritants.



## NEOPLASTIC FIBROUS TISSUE LESIONS

### 1. Fibrous Histiocytoma:

**Diverse group of tumors that exhibit both fibroblastic & histiocytic differentiation**

#### Clinical Features:

**Develops anywhere in the body.**  
**Painless nodular mass of variable size (few mm. to several cm.)**

**Site:** Extremities (Dermatofibromas)

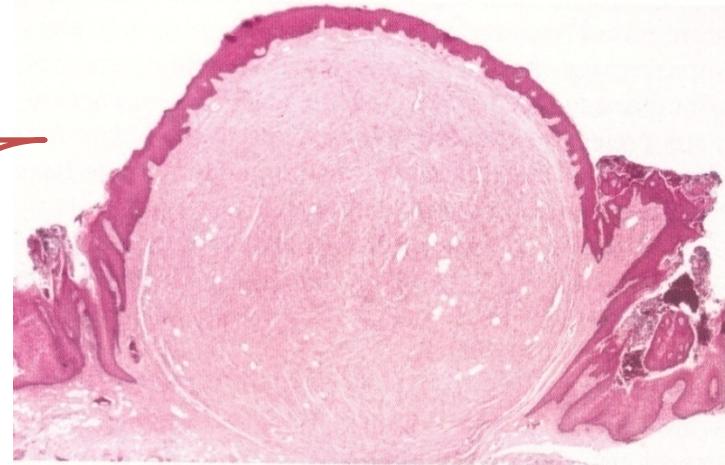
Uncommon in oral & peri oral regions. Mostly in the buccal mucosa & vestibule.

**Age of onset:** Mid-aged & older adults.

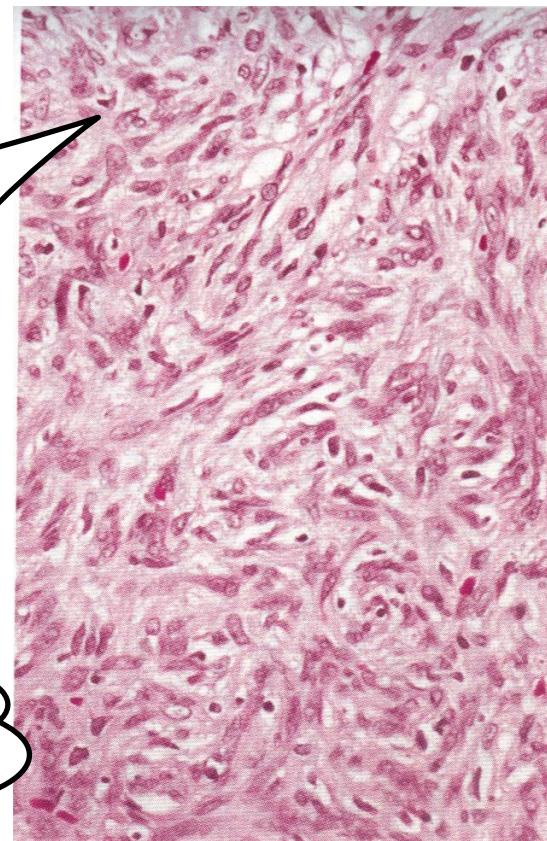


# Histopathology:

- Cellular proliferation of spindle-shaped fibroblastic cells with vesicular nuclei.
- The margin of the tumor is not sharply defined.
- Tumor cells are arranged in short, intersecting fascicles, known as *storiform* pattern



Rounded, lipid –containing histiocyte-like cells **xanthoma cells**, or **multinucleated giant cells** can be seen occasionally



**Treatment:**  
Local surgical excision with uncommon recurrence.

## 2. Fibromatosis:

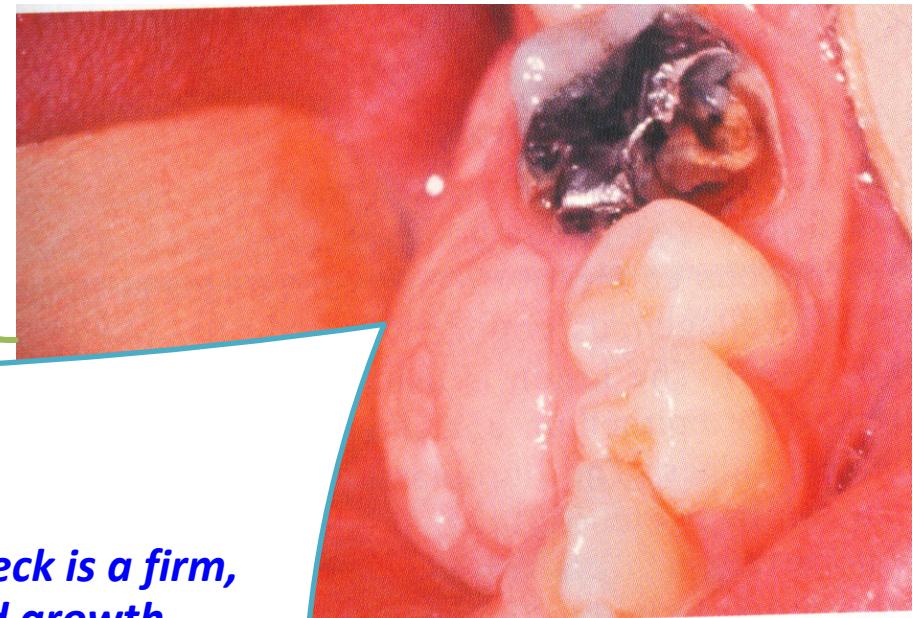
Broad group of fibrous proliferation that have a biologic behaviour & histopathologic pattern that is intermediate between those of benign fibrous lesions & fibrosarcoma.

### Clinical Features:

*Soft tissue fibromas of the head & neck is a firm, painless mass which may exhibit rapid growth.*

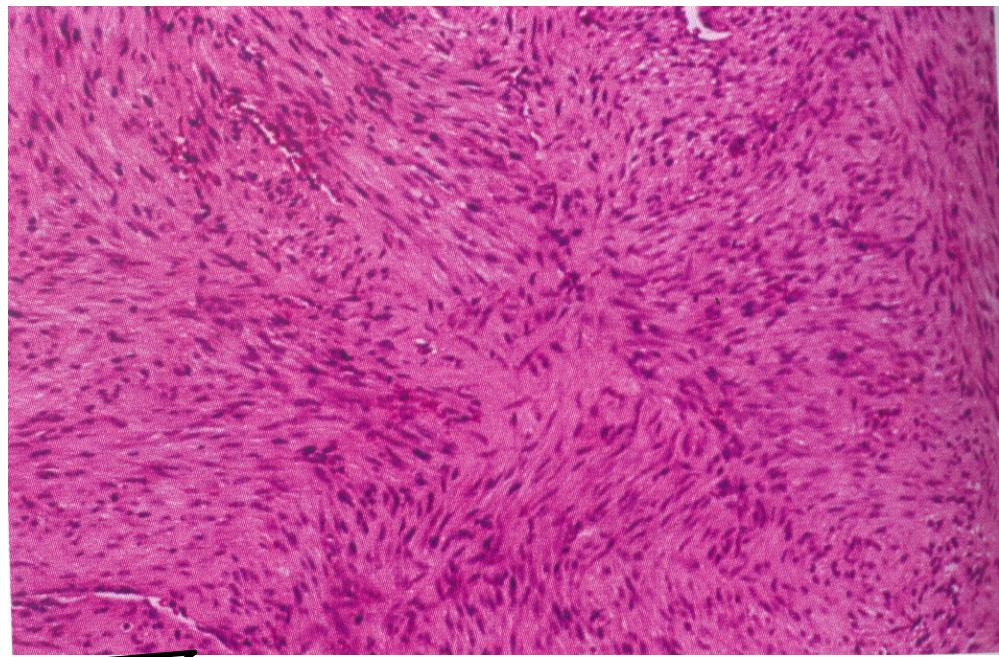
**Site:** paramandibular soft tissue region resulting in a significant facial disfigurement.

**Age of onset:** Children & young adults (Juvenile fibromatosis).



# Histopathology:

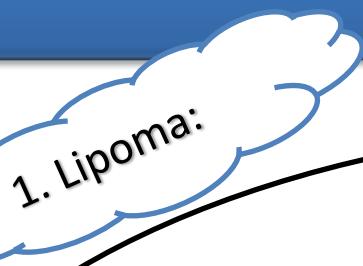
Cellular proliferation of spindle-shaped cells that are arranged in **streaming fascicles** & are associated with a variable amount of collagen



# Treatment:

Wide excision because of its locally aggressive nature, High recurrence rate.

## ADIPOSE TISSUE LESIONS



- Benign tumor of fat. Which is less frequent in oral & maxillofacial region.
- Uncertain pathogenesis, but is more common in obese patients.]
- Lipoma do not decrease in size although normal body fat may be lost.



**Clinical Features:**  
Soft, smooth-surfaced nodular mass with yellow hue that can be sessile or pedunculated.

**Site:** Buccal mucosa & buccal vestibule (50% of cases)

Some buccal cases are true tumors, but rather herniation of the buccal fat pad, which occur subsequent to surgical removal of third molar.

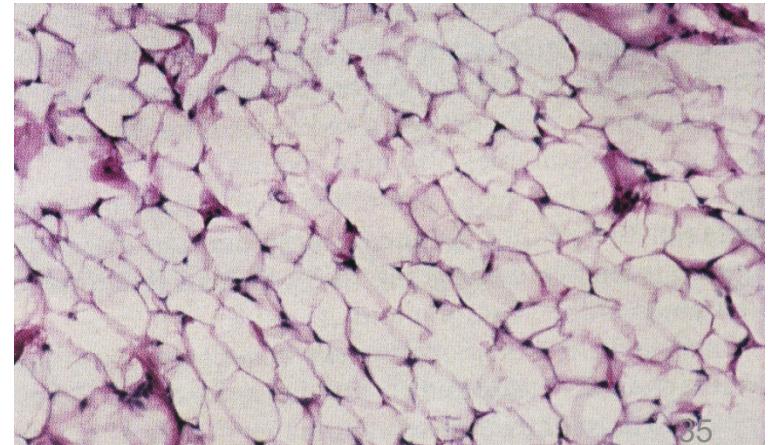
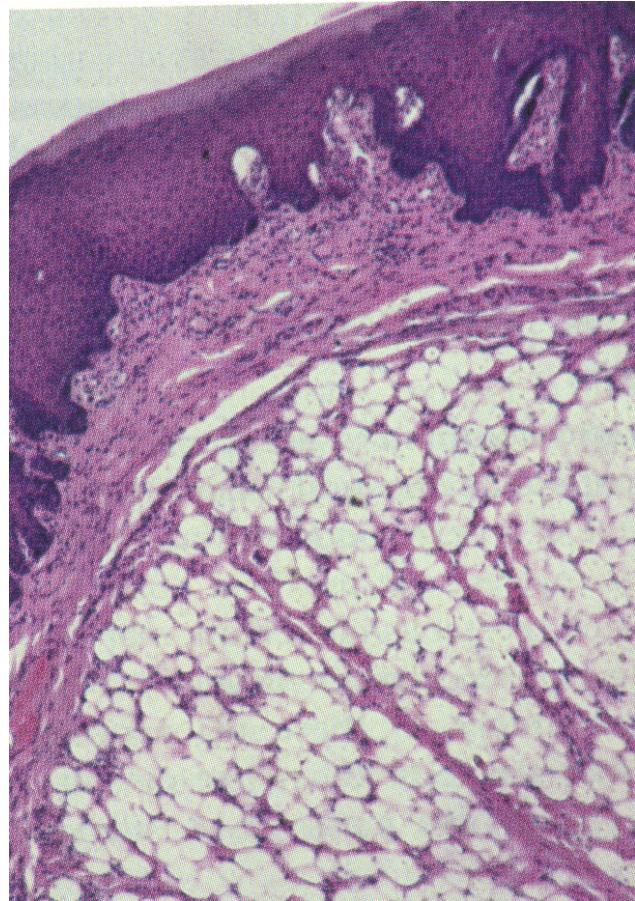
**Size:** less than 3 cm., occasionally larger.  
**Age of onset:** 40 years old & older.

# Histopathology:

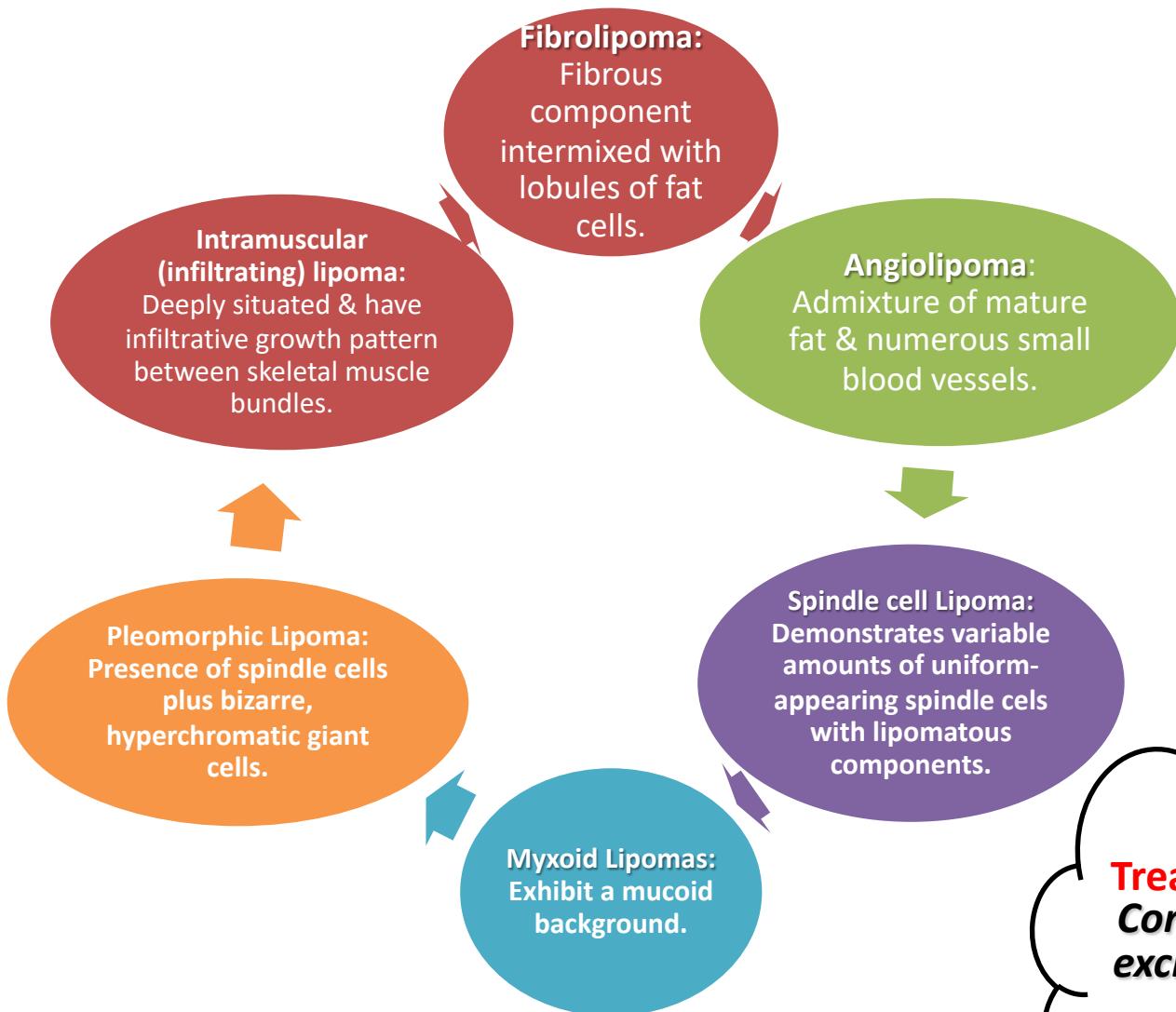
■ **Lobular arrangement** of mature fat cells that differ little in microscopic appearance from the surrounding normal fat .

■ The tumor is **well circumscribed** & may demonstrate a thin fibrous capsule.

■ Rarely, **cartillagenous or osseous metaplasia** may occur within lipoma.



## **Microscopic variants:**



**Treatment:**  
**Conservative local excision. With rare recurrence.**

## NEURAL TISSUE LESIONS

### 1.Traumatic Neuroma ( Amputation Neuroma)

*Reactive proliferation of neural tissue after transaction or other damage of a nerve bundle.* After a nerve has been damaged or severed, the *proximal portion attempts to regenerate & reestablish innervations of the distal segment by the growth of axons through tubes of proliferating Schwann cells.*

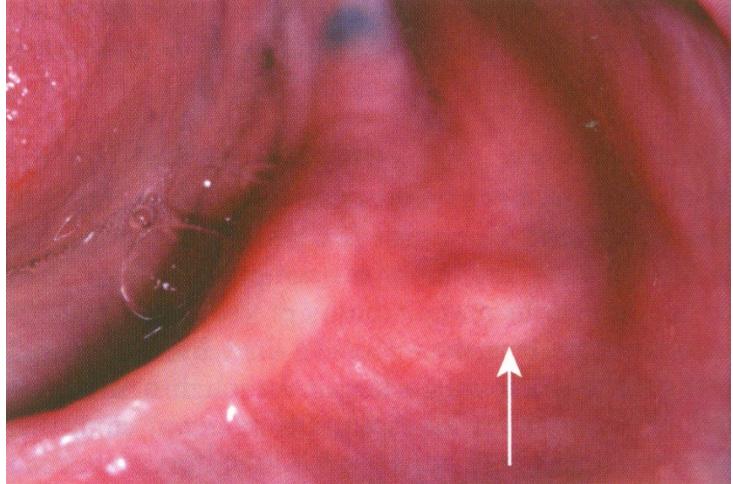
If these regenerating elements encounter **scar tissue** or otherwise **can not** reestablish innervations, a **tumor like mass** develop at the site of injury.

# Clinical Features:

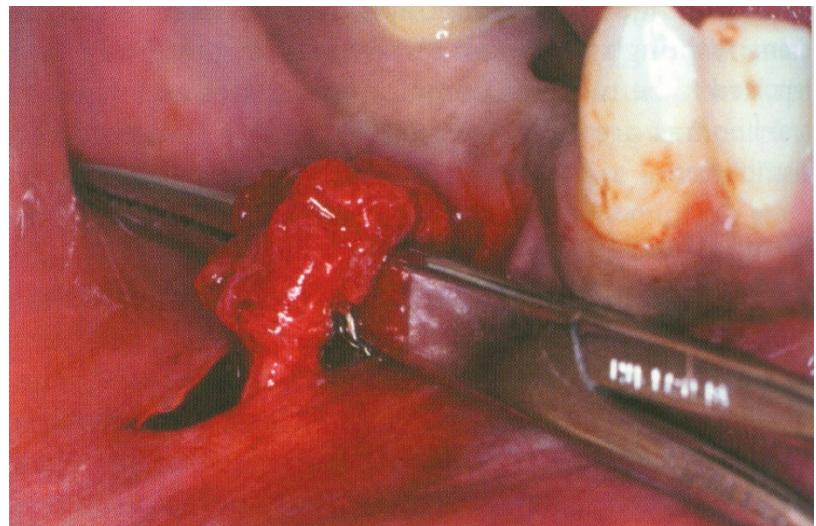
***Smooth-surfaced, non ulcerated nodules.***

**Site:** Mental foramen area, tongue & lower lip.

**Age of onset:** Any age, often diagnosed at middle-aged adults. More common in females.

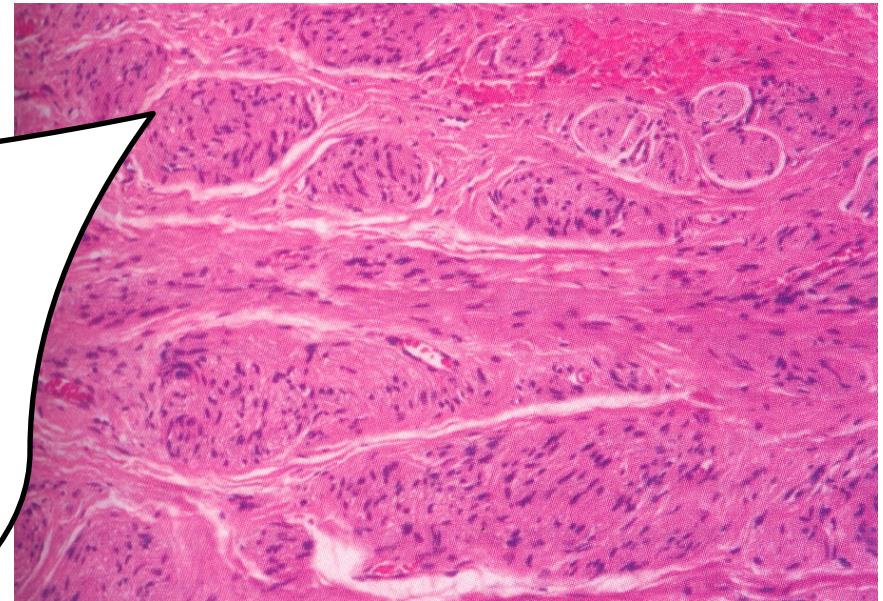


***Neuromas of mental nerve are frequently painful, especially when impinged by a denture or palpation.***



# Histopathology:

- **Haphazard proliferation** of mature, myelinated nerve bundles within a fibrous CT stroma.
- **Occasional mild** inflammatory cell infiltrate.



## Treatment:

Surgical excision, including small portion of the involved nerve

## 2. Neurolemoma (Schwannoma)

*Benign neural neoplasm of Schwann cell origin.*

### Clinical Features:

*Slowly-growing encapsulated tumor associated with nerve trunk.*

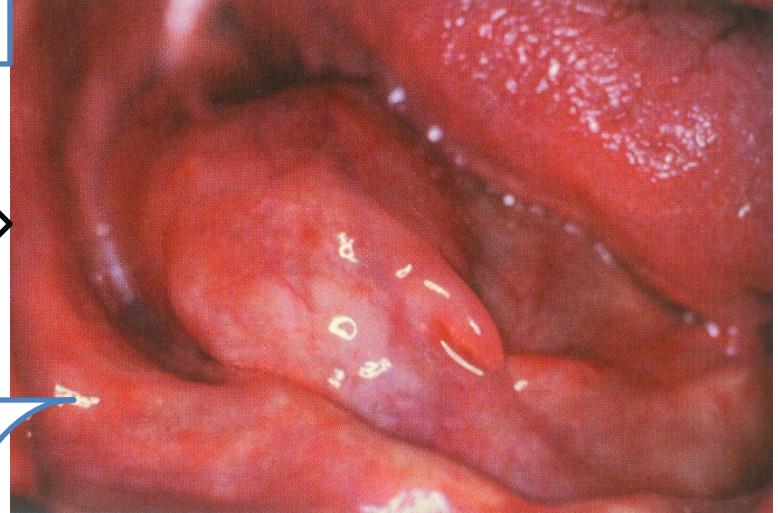
As it grows it pushes the nerve aside

**Asymptomatic.**

**Site: Tongue**

**Size:** few mm. to several cm.

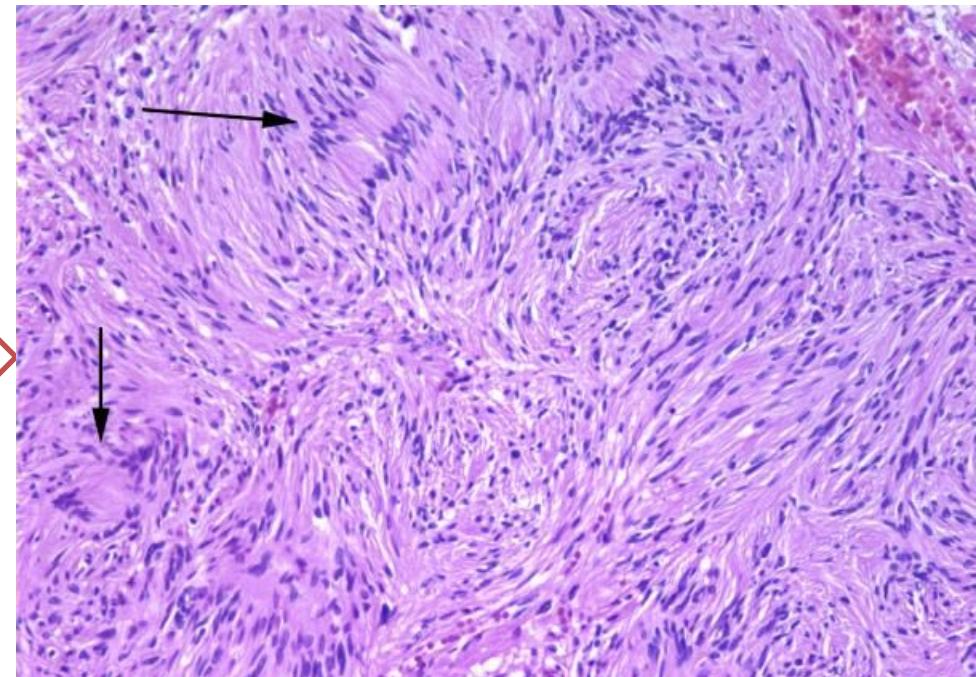
**Age of onset:** Young & middle-aged adults.



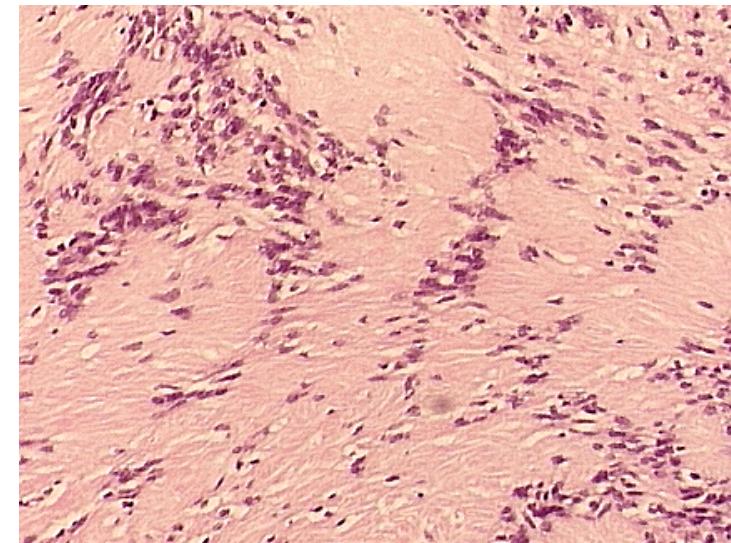
# Histopathology:

Encapsulated tumor with 2 microscopic patterns:

1. *Antoni A*: Characterized by streaming fascicles of spindle -shaped Schwann cells which arranged in palisaded pattern around central acellular areas known as **Verocay bodies**



2. *Antoni B*: Less cellular & less organized with random arrangement of spindle cells within a loose myxomatous stroma.

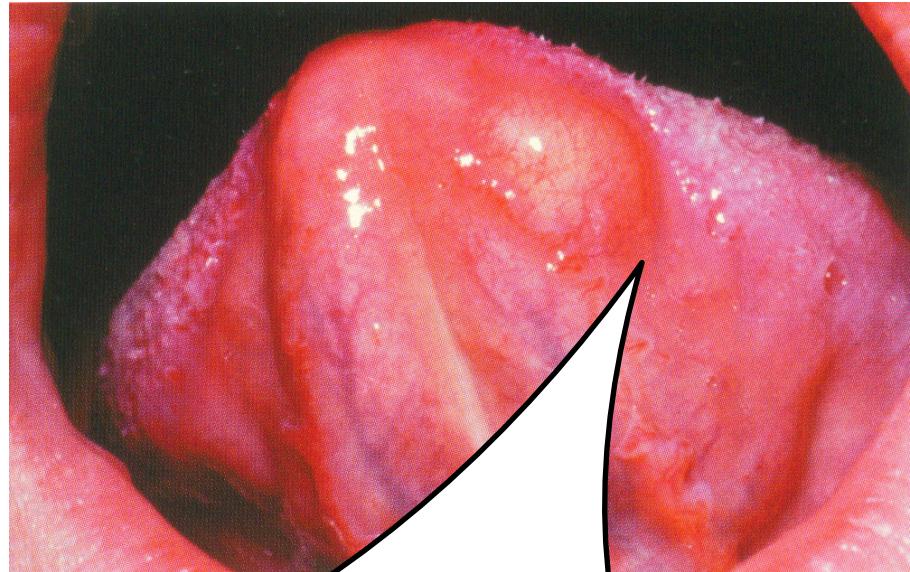


**Treatment:**  
Surgical excision.

### 3. Neurofibroma:

*It arises as solitary tumors or be a component of neurofibromatosis*

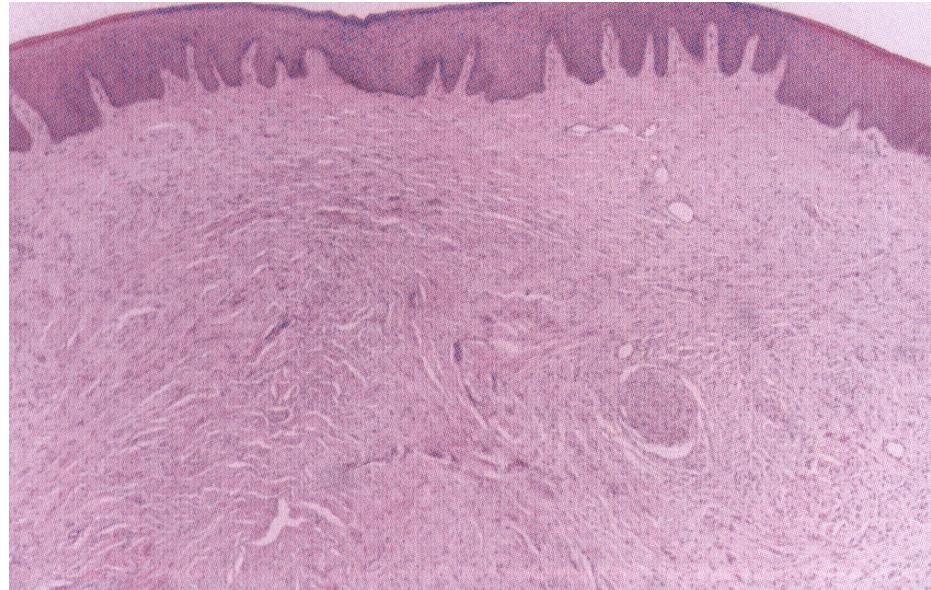
Solitary tumors are most common in young adults , as slow-growing, soft painless lesion of variable sizes



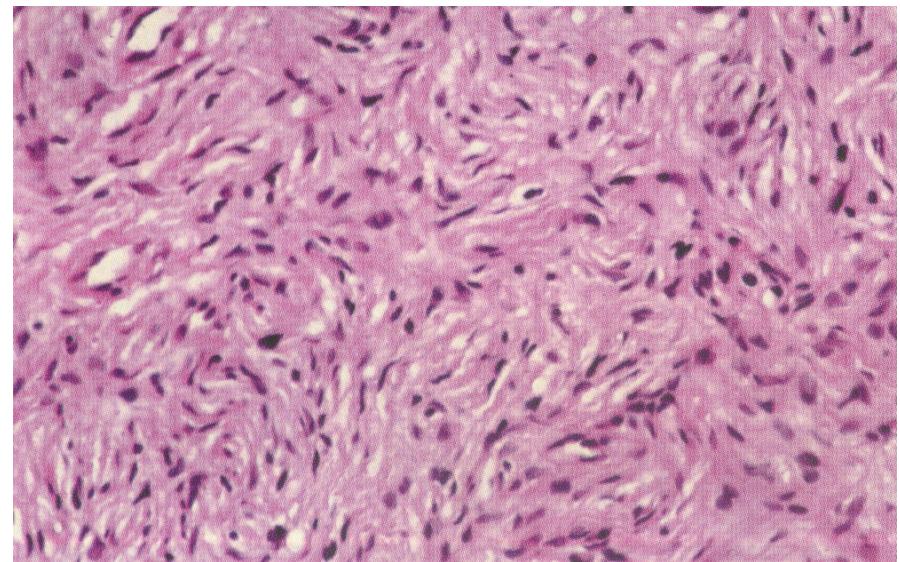
**Site:** skin, tongue & buccal mucosa are the most frequent sites.

# Histopathology:

Interlacing bundles of **spindle-shaped cells** that often exhibit **wavy nuclei**

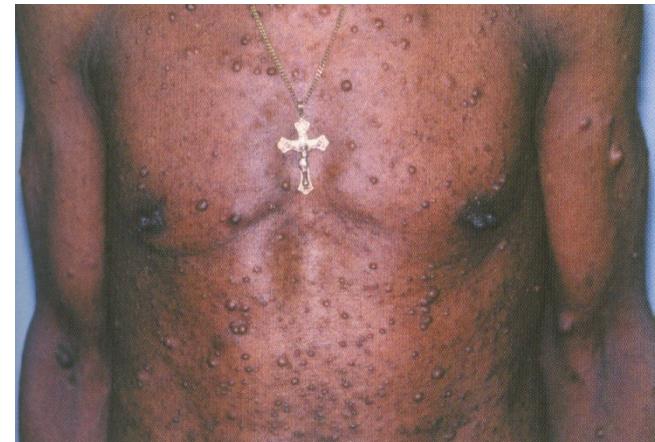
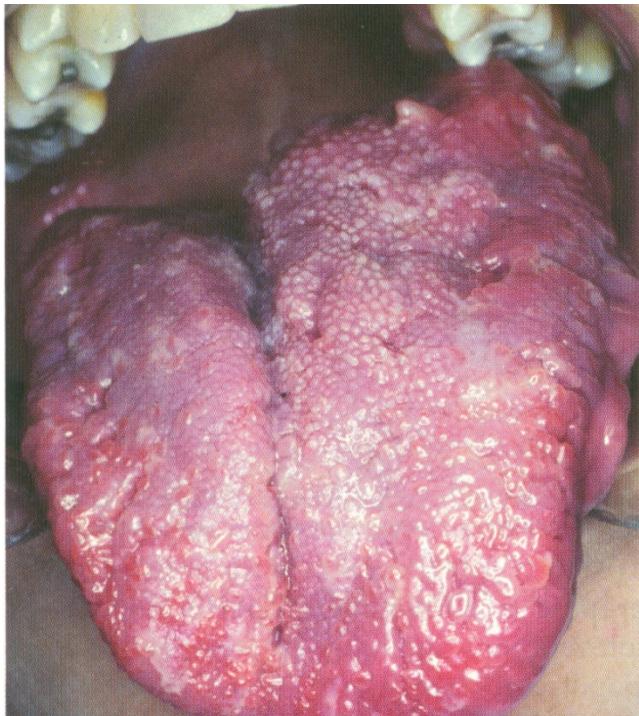


- Mast cells tend to be numerous & can be helpful diagnostic feature.



**Treatment:**  
**Surgical excision.**

# Neurofibromatosis



## 4. Multiple Endocrine Neoplasia Type 2B (MEN Syndromes)

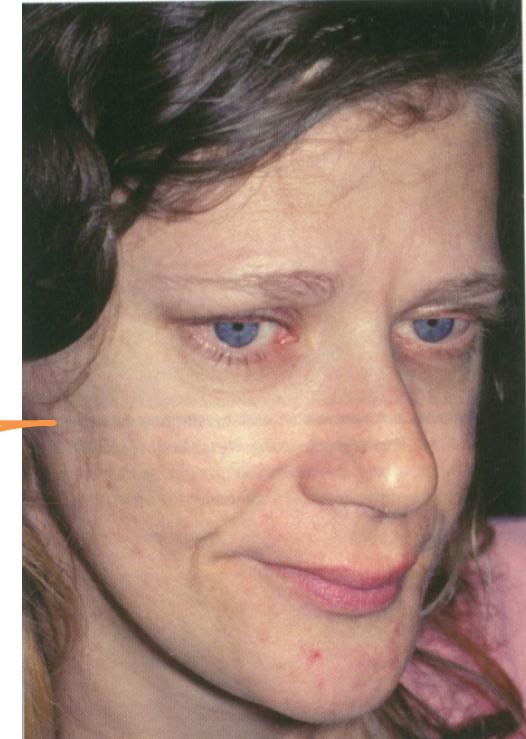
*Group of rare conditions characterized by tumors or hyperplasias of neuroendocrine tissues.*

### Clinical Features:

Patient with MEN have characteristic facial appearance: narrow face, thick lip with averted upper eyelid.

**Oral mucosal neuromas are usually the first sign of the condition.**

**Present as soft, painless papules or nodules on the lips & anterior tongue**



Bilateral neuromas of the commissural mucosa are highly characteristic.

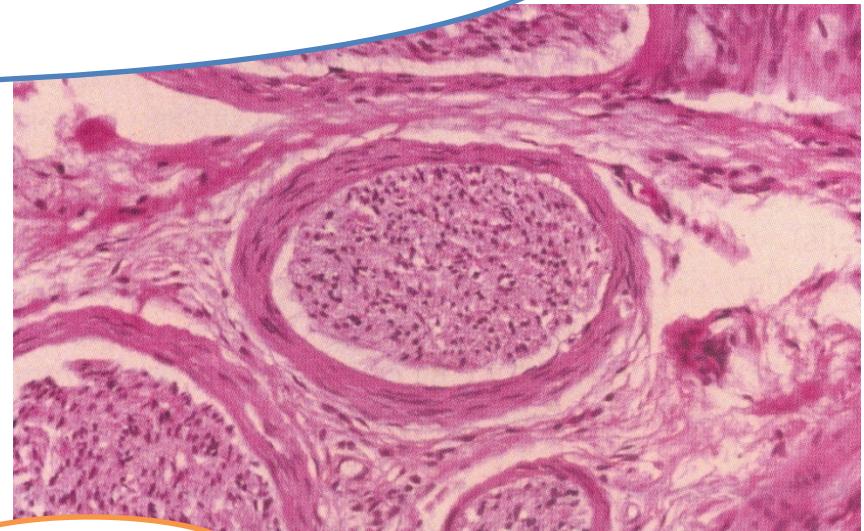
**Pheochromocytoma develop in 50% of cases.**

**Development of medullary carcinoma of the thyroid gland in 90% of cases.**



## Histopathology:

Marked hyperplasia of nerve bundles in loose CT stroma.



## Treatment:

Prophylactic removal of thyroid gland.

## 5. Melanotic Neuroectodermal Tumor of Infancy:

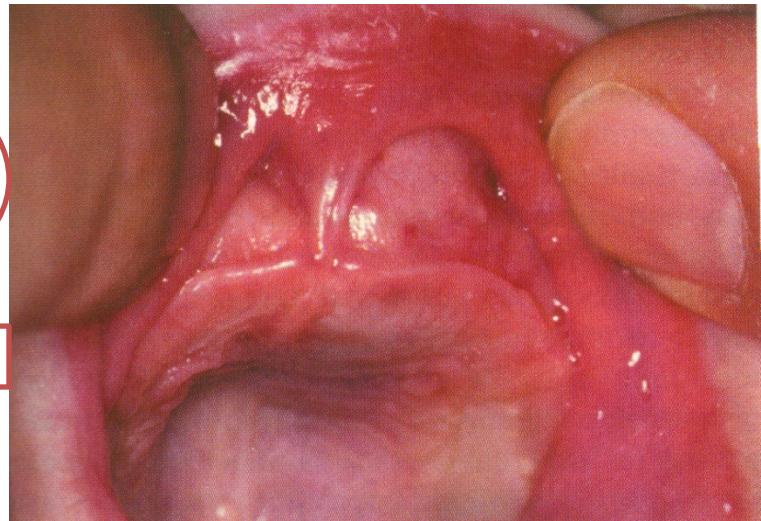
*It develops during the first year of life & it is of neural crest origin.*

**Site:** Maxillary anterior region as rapidly expanding mass that is frequently blue or black.

The tumor often destroys the underlying bone & may be associated with displacement of the developing teeth.

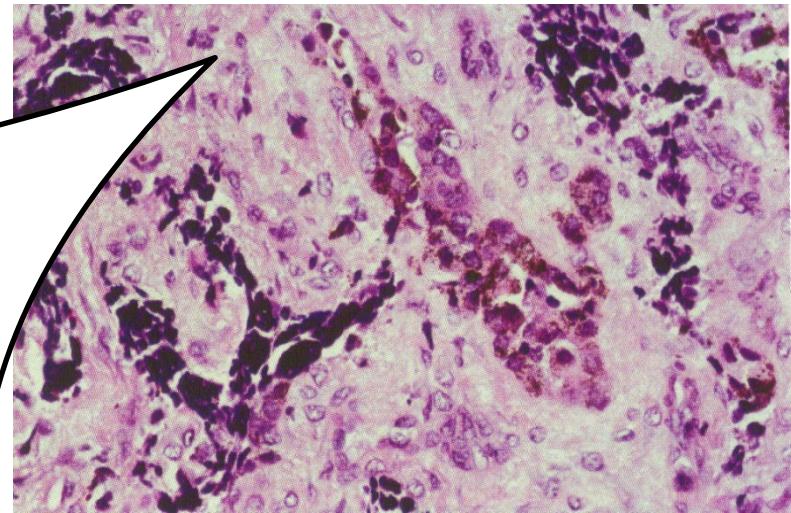
It may exhibit "sun ray" radiographic appearance that may be mistaken for **osteosarcoma**.

**Extramaxillary sites** are skull, mandible, brain, epididymis or testis.



## Histopathology:

- Tumor consists of **biphasic population of cells** ( cuboidal epitheloid & neuroblastic small round cells with hyperchromatic nuclei ) that form nests, tubules , or alveolar structures within a dense collagenous stroma.
- **Dark-brown melanin** is also present



## Treatment:

Surgical removal with 5 mm. removal from the margin of the lesion to prevent recurrence or malignant transformation.

# MUSCULAR LESIONS

## 1. Granular Cell Tumor:

Benign soft tissue neoplasm first believed to be of skeletal muscle origin but recently believed to be derived from Schwann cells or neuroendocrine cells.

### Clinical features:



*Most common in oral cavity & skin.*

*Asymptomatic sessile nodule that is usually 2cm. or less in size.*

The mass is typically pink to yellow.

The tumor is usually solitary , but sometime multiple especially in black.

**Site:** Dorsal Tongue (1/3 of all reported cases), followed by buccal mucosa

**Age of onset:** 4th-6th. Decades of life with 2:1 female predilection.

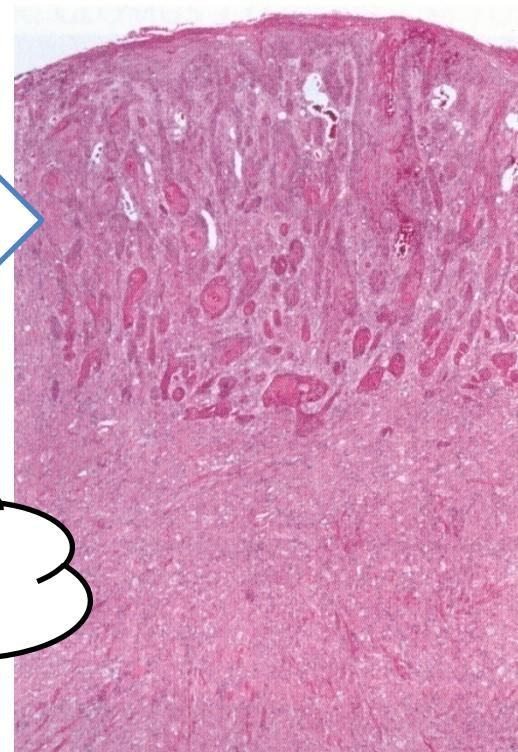
## Histopathology:

- Large , polygonal cells with abundant pale eosinophilic ,
- granular cytoplasm & small, vesicular nuclei.



- Cells are arranged in sheets with indistinct cell borders.

- Pseudoepitheliomatous hyperplasia of the overlying epith. has been reported in 50% of cases. (Mistaken of squamous cell carcinoma).



## Treatment:

Conservative local excision with no recurrence.

## 2. Congenital Epulis (Congenital Granular Cell Lesion)

***Soft tissue tumor exclusively on alveolar ridge of the newborn.***

### Clinical Features:

Pink-to- red smooth-surfaced polypoid mass on the alveolar ridge.

**Site :** 2-3 times more common on maxillary ridge than mandibular ridge, lateral to the midline in the area of developing lateral incisor & canine.

Female predilection(90%) which suggests a hormonal influence in the development.

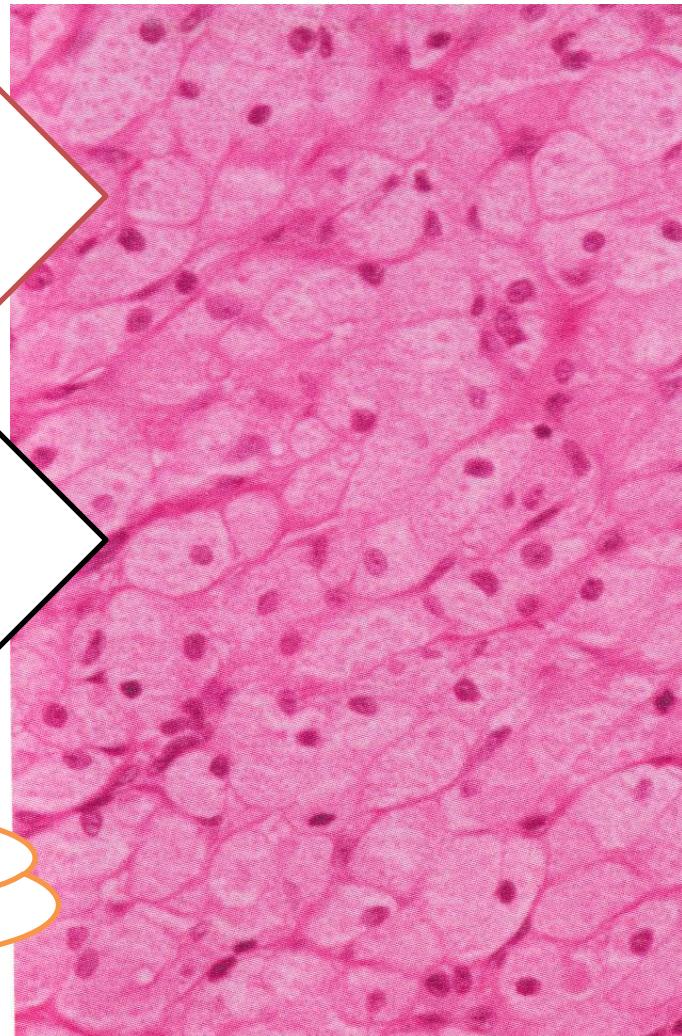
**Size:** 2cm or less.



# Histopathology:

- Large, rounded cell with abundant granular, eosinophilic cytoplasm & round to oval, lightly basophilic nuclei.

- The overlying epith. Shows pseudoepitheliomatous hyperplasia or atrophy of rete ridges.



# Treatment:

Surgical excision.

### 3. Leiomyoma:

**Benign tumor of smooth muscle , which is rare in oral cavity.**

**Three types of leiomyoma:**

1. Solid leiomyoma.
2. Vascular leiomyoma (angiomyoma)
3. epitheloid leiomyoma (leiomyoblastoma)

Oral leiomyomas are either solid or vascular in type, angiomyoma accounts for nearly 75% of all oral cases.

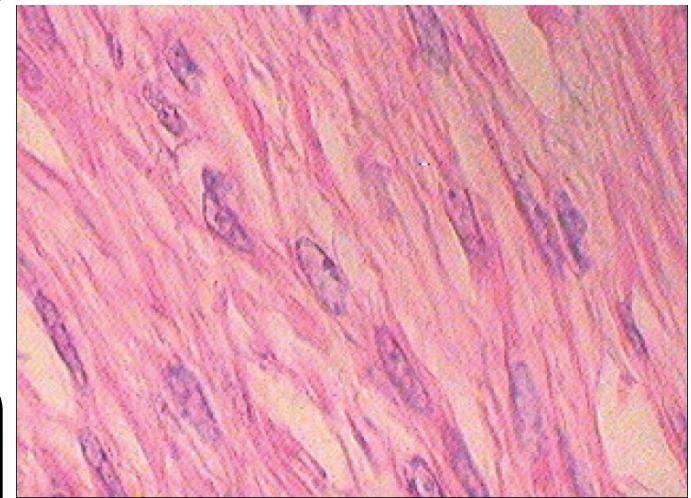
#### Clinical features:

Slow-growing firm mucosal nodule, asymptomatic, bluish hue if it is of vascular type.

**Site:** Lips, tongue & palate.

#### Histopathology:

Well-circumscribed tumor that consists of **interlacing bundles of spindle-shaped smooth muscle cells** with elongated nuclei & blunt ended



**Treatment:**  
Local surgical excision.

# VASCULAR LESIONS

## 1. Hemangioma & Vascular Malformation:

Hemangioma is a *benign tumors of infancy that are characterized by a rapid growth phase with endothelial cell proliferation, followed by gradual involution.*

Vascular Malformation:  
*Structural anomalies of blood vessels without endothelial proliferation. It present at birth & persist throughout life.*

They may be  
**Capillary, Venous, arteriovenous or intrabony vascular malformations**

## Hemangioma:

**Head & neck occupy 60% of cases.**

At birth it appear as Pale macule with threadlike telangiectasias may be noted on the skin, then few weeks later tumor grows at faster pace & appear as raised & bosselated with bright-red color (**Strawberry Hemangioma**).  
**They are firm & rubbery to palpation., & the blood can not be evacuated on pressure.**

About half of all hemangiomas will show complete resolution by 5 years of age, the normal skin will be restored in about 50% of cases. The rest may have permanent changes as atrophy, scarring, wrinkling & telangiectasias

**Complications:** Occur in 20% of cases like ulceration with or without secondary infection.

Tumor in the neck & laryngeal area can lead to airway obstruction.



Dr. Natheer Al-Rawi

## Vascular Malformation:

**Portwine stains** are relatively common capillary malformations.

**Site:** Face on the distribution of trigeminal nerve.

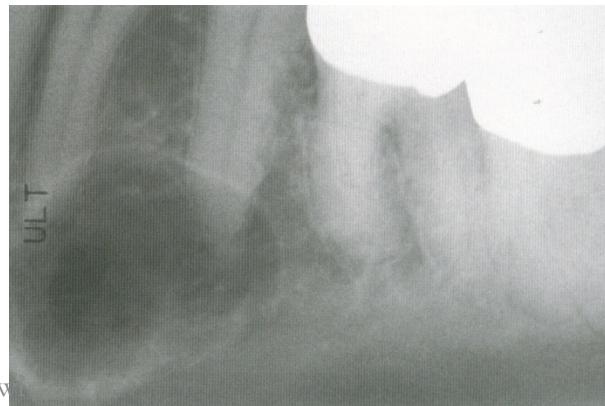
**Pink or purple macular lesions** that grow with the patient till it become nodular.



**Intrabony vascular malformation** may involve jaw bones & can be detected between 10-20 years of age. with female predilection .the mandible is twice as common site as maxilla. Asymptomatic with occasional teeth mobility

**Radiographically:** Multilocular radiolucency.

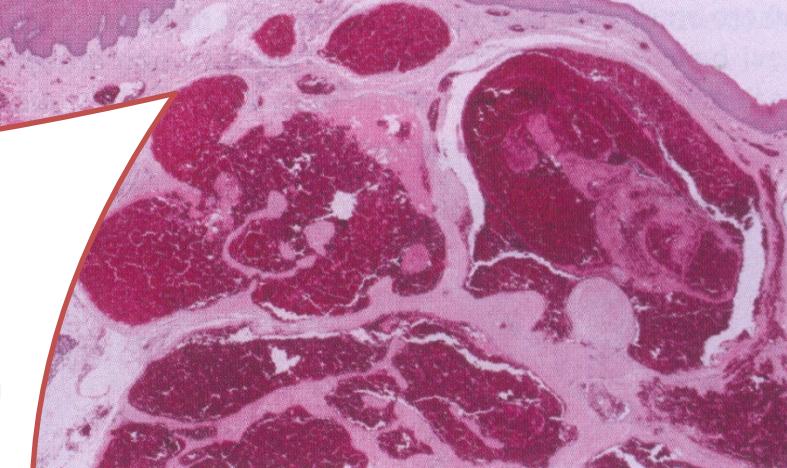
**Angiography** can be helpful in demonstrating the vascular nature of the lesion.



# Histopathology:

## Hemangioma:

**Early lesion:** Numerous plump endothelial cells & often indistinct vascular lumina (**Juvenile hemangioendothelioma**).

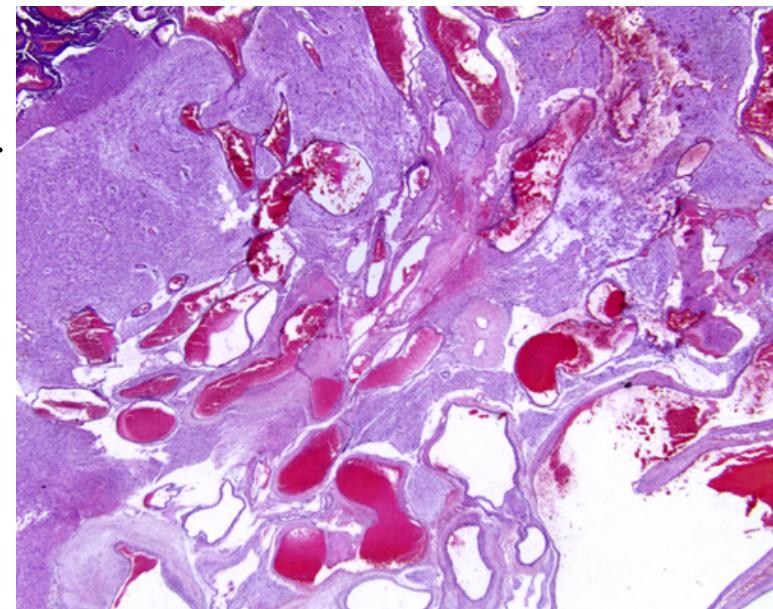


**Mature Lesion:** Endothelial cells become flattened, with vascular space appearance.

**Involution stage:** Vascular spaces are more dilated (**cavernous**) & widely spaced.

## Vascular malformation:

They do not show endothelial cell proliferation & the channels resemble the vessels of origin.



# Treatment:

- **Systemic corticosteroids or Interferon- $\alpha$**  may help to reduce the size of hemangioma if it is not involutes.
- Flashlamp-pulsed dye laser can be effective in the portwine stains
- **Sclerotherapy & surgical excision** for venous malformation.
- **Resection** for large arteriovenous malformation.
- *Vascular malformation of the jaws are dangerous because of the risk of bleeding. Needle aspiration of any undiagnosed intrabony lesion before biopsy is a wise precaution to rule out the possibility of a vascular malformation.*

## 2. Sturge-Weber Angiomatosis:

**Patient born with a dermal capillary malformation of the face known as *Portwine stain* or *Nevus Flammeus* because of its deep purple color.**

This portwine stain is unilateral along one or more segment of the trigeminal nerve. They have meningeal angioma that is usually associated with epilepsy. They have ocular involvement: vascular malformation of sclera & conjunctiva.

**Intraoral involvement:** Gingival hyperplasia resembling pyogenic granuloma.

### Histopathology:

- Excessive number of **dilated blood vessels** in the middle & deep dermis.
- **Proliferative gingival** lesion resemble pyogenic granuloma.

**Treatment:**  
Laser therapy,  
neurosurgery.



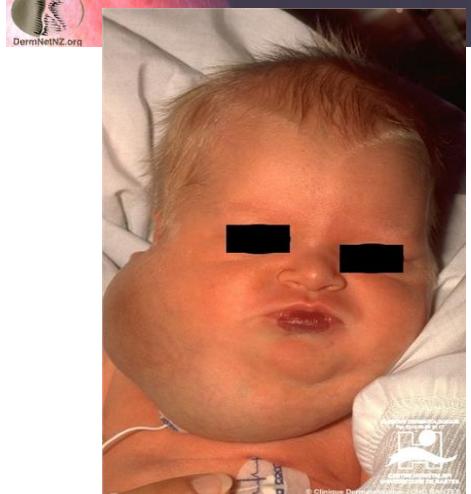
### 3. Lymphangioma:

Benign hamartomatous tumors of lymphatic vessels.  
They are of three types:

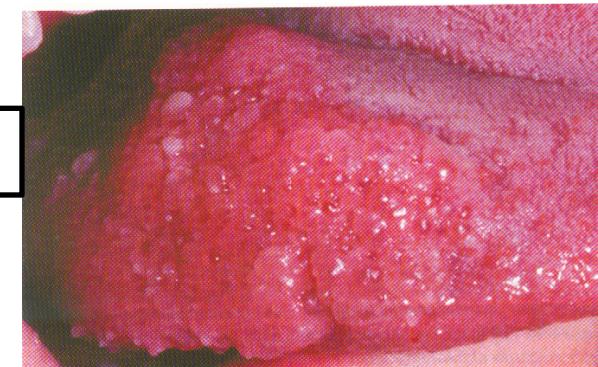
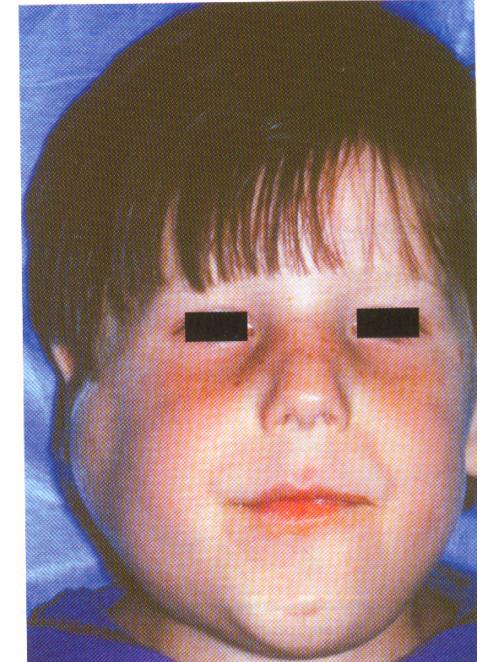
1. *Lymphangioma simplex (capillary lymphangioma)*: consist of small, capillary sized vessels.

2. *Cavernous Lymphangioma*: composed of larger, dilated lymphatic vessels.

3. *Cystic Lymphangioma (cystic hygroma)*: exhibit large macroscopic cystic spaces.

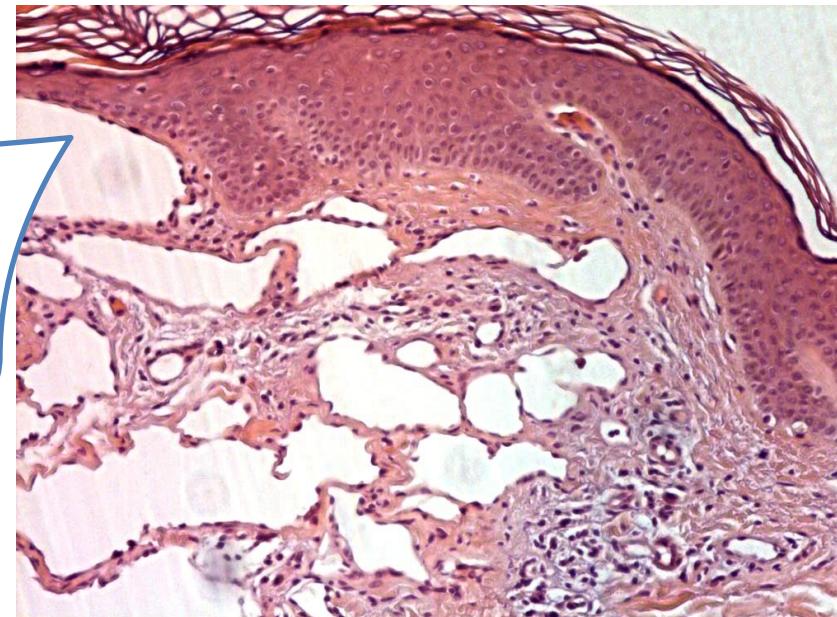


**Cavernous lymphangioma** are more frequent in the mouth, anterior 2/3 of the tongue is the most common site which results in **macroglossia**. The tumor is superficial in location & demonstrates a **pebbly surface** that resemble a cluster of translucent vesicles. (**frog eggs appearance**)



**Histopathology:**

Dilated lymphatic vessels beneath the epith.  
Surface & often replace CT papillae.



**Treatment:**

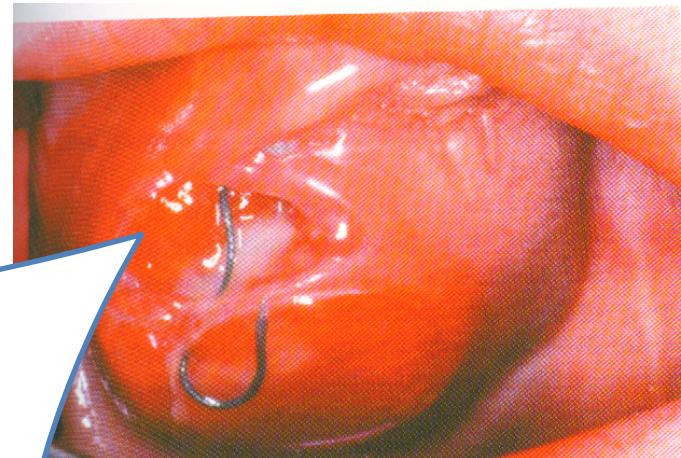
Surgical excision, recurrence is common  
in oral region because of infiltrative  
nature.

## Soft Tissue Sarcomas:

Soft tissue sarcomas account for less than 1% of the cancer in this area.

### 1. Fibrosarcoma:

- Malignant tumor of fibroblasts. Only 10% occur in head & neck region.
- *Slowly growing masses that reach considerable size before they produce pain.*
- Nose & paranasal sinuses are the most common sites.



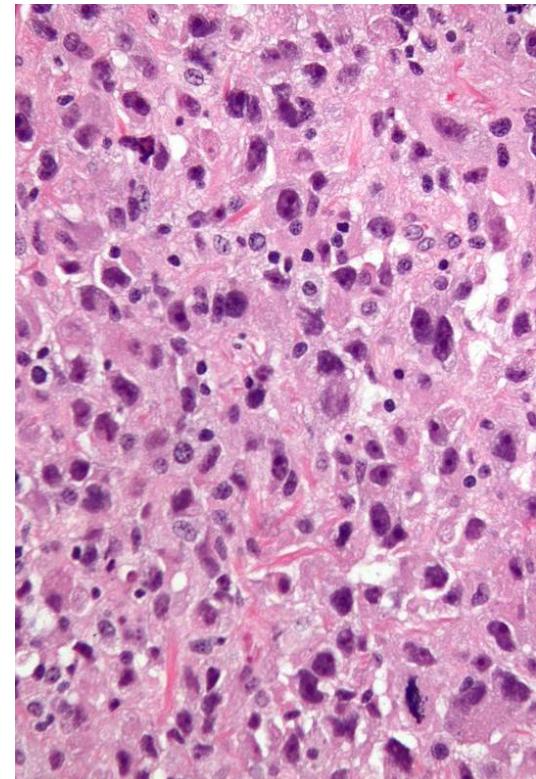
## 2. Malignant Fibrous Histiocytoma:

Sarcoma with both **fibroblastic & histiocytic features**.

Rare in oral region.

Expanding mass that may or may not be painful or ulcerated

**Nose & paranasal involvement** produce obstructive symptoms.



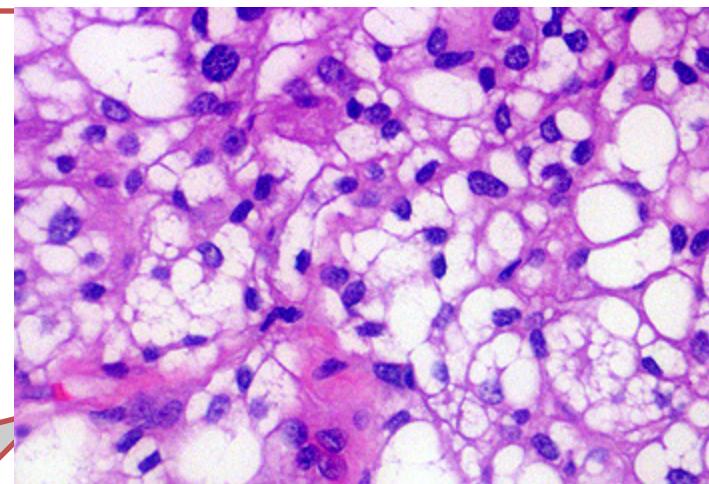
## 3. Liposarcoma:

Malignant neoplasm of fatty origin. Rare in oral cavity.

**Soft, slow-growing, ill-defined mass** that may appear normal in color or yellow.

Pain is a late feature.

Cheek is the most common oral site



### 3. Angiosarcomas:

**Rare Malignancy of vascular endothelia, which may arise either from blood or lymphatic vessels.**

More than 50% of cases occur in head & neck region..

**Site:**Scalp & forehead are the most common sites.

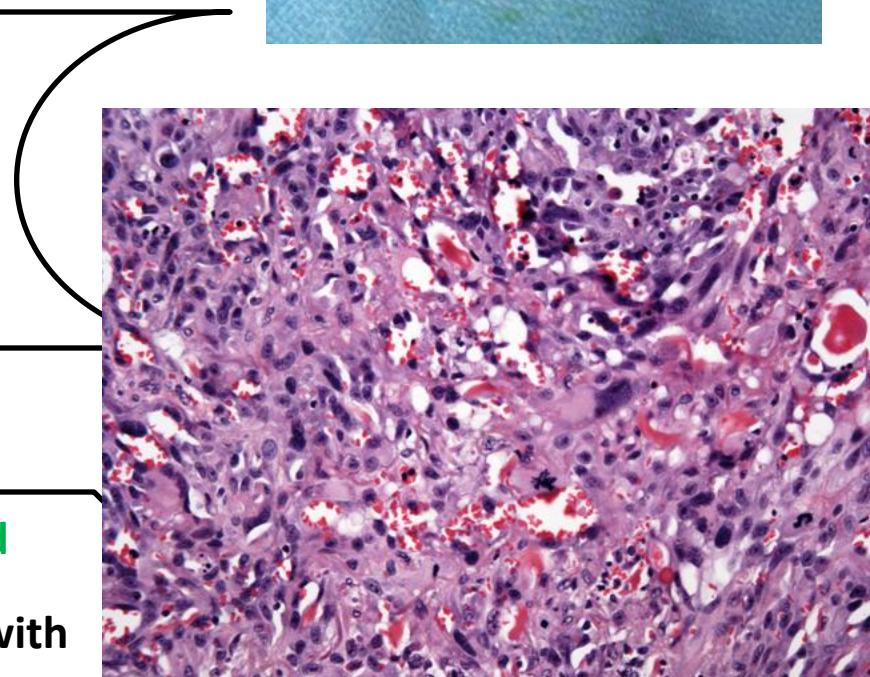


### Clinical features:

Resemble a simple bruise which may lead to delay in diagnosis.

Lesion continue to enlarge which result in an elevated, nodular, or ulcerated surface

Oral angiosarcomas most commonly seen in the mandible.



### Histopathology

Infiltrative proliferation of endothelium-lined blood vessels that form an anastamosing network.

The endothelia appear hyperchromatic & atypical with high mitotic activity.

#### 4. Kaposi's sarcoma:

*Unusual vascular neoplasm. Caused by human herpes virus 8 (Kaposi's sarcoma-associated herpes virus).*

Four clinical presentation are recognized:

1. Classic.
2. Endemic (African)
3. Iatrogenic immunosuppressant-associated.
4. AIDS-related.

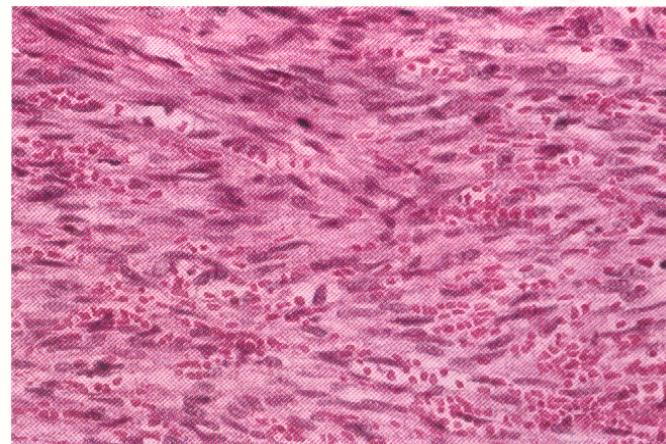
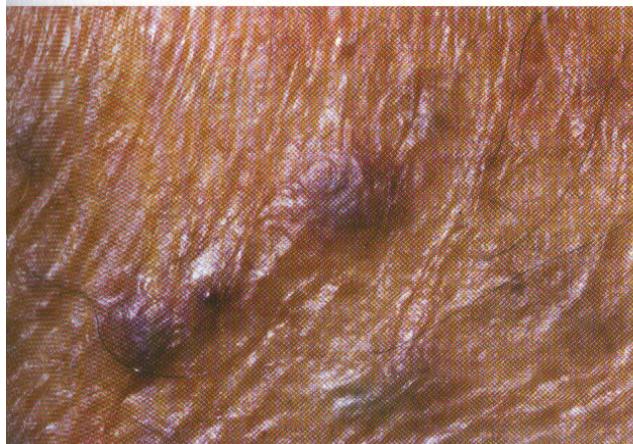


**Classic type** is a disease of adult life, 90% in men of Slavic, Jewish & Italian ancestry.

Appear as **multiple bluish-purple macules** & plaque on skin of lower extremities.

Oral lesion are rare, it involve palate.

**Iatrogenic type** involve recipients of organ transplants . due to loss of cellular immunity.



## Histopathology:

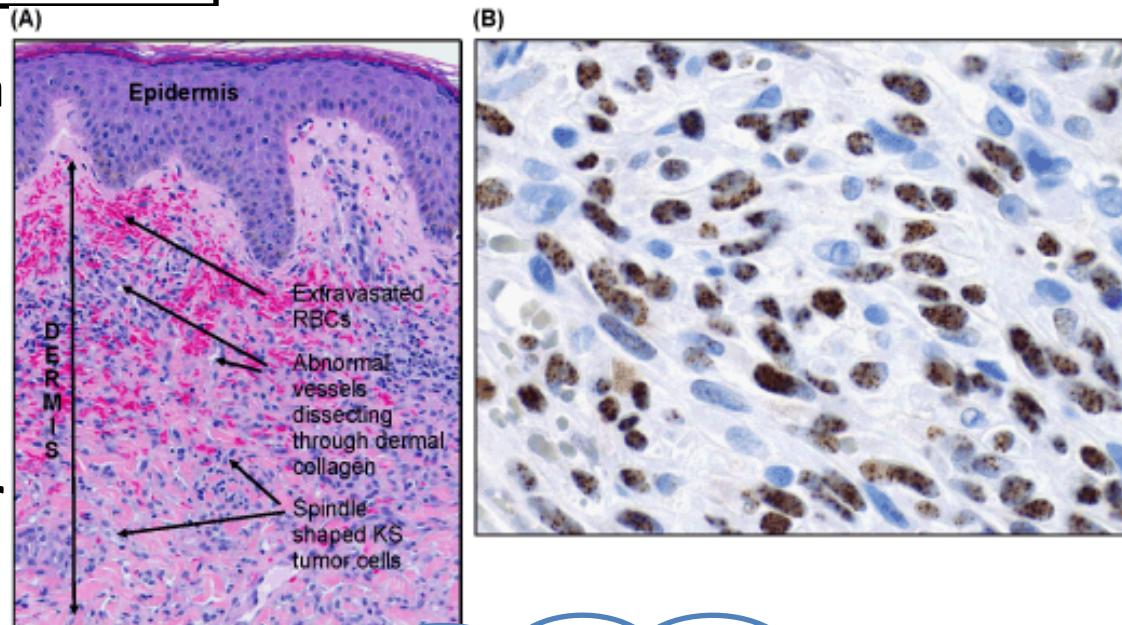
Kaposi's sarcoma evolves through 3 stages:

1. Patch (macular)
2. Plaque.
3. Nodular.

**Patch stage** characterized by a proliferation of miniature vessels. This results in an irregular, jagged vascular network that surround the preexisting vessels.

**Plaque stage:** Further proliferation of these vascular channels along with development of a significant spindle cell components.

**Nodular stage:** Spindle cells increase to form nodular tumor like mass that may resemble fibrosarcoma



**Treatment:**  
Depend on clinical subtypes & stage of the disease.  
Radiotherapy & surgery

Thank  
You

