

# **Oral Medicine**

## **Benign, Premalignant & Malignant Lesions of The Oral Cavity I**

### **Lecture 21**

**Dr. Mohanad Jameel**

# BENIGN SOFT TISSUE LESIONS

Oral mucosal benign tumors comprise lesions that form from epithelial, fibrous tissue, adipose tissue, nerve, and muscle.

Benign proliferations of blood vessels and lymphatic vessels resemble neoplasms but do not have unlimited growth potential and therefore are more appropriately considered hamartomatous proliferations.

## Epithelial Tumors

**Viral papilloma** (also called squamous papilloma).

Benign oral epithelial virus–induced growths, principally caused by the human papillomavirus (HPV).

It usually occurs in the third to fifth decades, most commonly as an isolated small growth (<1 cm diameter) on the palate, ranging in color from pink to white, ridged or wrinkled exophytic, and pedunculated lesion.



When these lesions occur on the surface of the lips, alveolar gingivae or palate they are well keratinized, while on non-keratinized mucosal surfaces they appear soft and pink/red.

HPV is DNA virus detected in approximately 50% of squamous papillomas.

The common wart, *verruca vulgaris*, is generally found on the skin (sometimes in association with similar skin lesions, often on the fingers) and is caused by the cutaneous HPV subtypes 2 and 57.

When involving the oral cavity, these warts are similar in appearance to viral papillomas and tend to involve the lips, gingivae, and hard palate.

Oral papillomas and warts are clinically similar, and local excision is desirable.

Although these lesions are probably infectious, a history of direct contact with another infected person is unusual, except in the case of multiple and often recurrent oral warts associated with sexual contact or maternal transmission, referred to as *condyloma acuminatum*

# Keratoacanthoma

Is a localized lesion that is typically found on sun-exposed skin, including the upper lip.

The rapid growth of a keratoacanthoma may be quite frightening, to the point where it is often mistakenly diagnosed as squamous or basal cell carcinoma.

These lesions appear fixed to the surrounding tissue (similar to some carcinomas) often grow rapidly and are usually capped by thick keratin.

Occasionally, the lesion matures, exfoliates and heals spontaneously, but more frequently block excision is required and the diagnosis is established from microscopic evaluation.



Epithelial tissue adjacent to the lesion is sharply demarcated from that of the lesion, which appears to lie in a cup-shaped depression.

The proliferating epithelium constituting this lesion consists of masses of reasonably well-differentiated squamous cells that often produce keratin pearls and show little cellular atypia.

The lesion's usual location on the upper lip (where squamous cell carcinoma of actinic etiology is rare, compared with the lower lip) should remind the clinician to consider keratoacanthoma in the differential diagnosis.

Intraoral keratoacanthomas are rare.

Treatment of this lesion is conservative excision, although some believe that it is not clearly separable from squamous cell carcinoma and advocate wide excision to prevent recurrence.

# **Connective tissue lesions**

## **Inflammatory/Reactive Hyperplasia of Soft Tissue**

Wide range of commonly occurring exophytic or nodular growths of the oral mucosa is termed inflammatory hyperplasia.

The major etiologic factor for these lesions is generally assumed to be chronic trauma from ill-fitting dentures, calculus, overhanging dental restorations, acute or chronic tissue injury from biting or fractured teeth.

With some of these lesions (e.g. pregnancy epulis), the levels of circulating hormones play a role. The majority of lesions occur peripherally on the oral mucosal surface, where irritants are quite common and therefore are subject to continual masticatory trauma.

Clinical appearance is swollen, distended, ulcerated, red to purple in color due to dilated blood vessels and they exhibit acute and chronic inflammatory exudates and erosion of the underlying cortical bone rarely occurs with peripheral inflammatory hyperplasia; if noted, there should be a strong suspicion that an aggressive process or even malignancy is involved.

# Fibroma

May occur as either pedunculated or sessile (broad based) growths on any surface of the oral mucous membrane.

They are also called traumatic or irritation fibroma.

The majority remain small, and lesions that are  $>1$  cm in diameter are rare.

The giant cell fibroma exhibits a somewhat nodular surface and is histologically distinguished from other fibromas by the presence of stellate shaped and multinucleated cells in the connective tissue.

The etiology of the giant cell fibroma is not known.



# Fibrous Inflammatory Hyperplasias

## The epulis fissuratum

Is a reactive inflammatory lesion associated with the periphery of ill-fitting dentures that histologically resembles the fibroma.

The growth is often split by the edge of the denture, resulting in a fissure, one part of the lesion lying under the denture and the other part lying between the lip or cheek and the outer denture surface.

This lesion may extend the full length of one side of the denture.

Many such hyperplastic growths will become less edematous and inflamed following the removal of the associated chronic irritant, but they rarely resolve entirely.

In the preparation of the mouth to receive dentures, these lesions are excised to prevent further irritation and to ensure a soft tissue seal for the denture periphery.





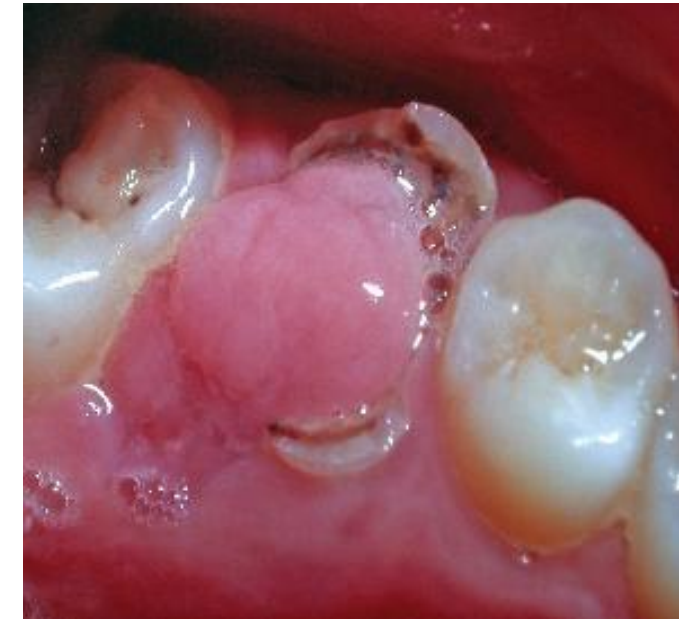
## **Pulp polyps** or chronic hyperplastic pulpitis

They occur when the pulpal connective tissue proliferates through a large pulpal exposure and fills the cavity in the tooth with a mushroom-shaped polyp that is connected by a stalk to the pulp chamber.

Masticatory pressure may lead to keratinization of the epithelium covering these lesions.

Pulp polyps contain few sensory nerve fibers and are remarkably insensitive.

The crowns of teeth affected by pulp polyps are usually so badly destroyed by caries that endodontic treatment is not feasible.



## **Pyogenic Granuloma:**

It is a hemorrhagic nodule that occurs most frequently on the gingiva (although it can occur on any surface) and that has a strong tendency to recur after simple excision if the associated irritant is not removed.

It may be difficult on occasion to identify the causative chronic irritation for these lesions, but their proximity to the gingival margin suggests that calculus, food materials, and overhanging dental restoration margins are important irritants that should be eliminated when the lesion is excised.

Identical lesions with the same histologic structure occur in association with the gingivitis and periodontitis that may complicate pregnancy and are referred to as **pregnancy epulis** or **pregnancy tumor**.

The prevalence of pregnancy epulis increases toward the end of pregnancy (when levels of circulating estrogens are highest), and they tend to shrink after delivery (when there is a precipitous drop in circulating estrogens). This suggests that hormones play a role in the etiology of the lesion.

Both pyogenic granulomas and pregnancy epulis may mature and become less vascular and more collagenous, gradually converting to fibrous epulis.

Small isolated pregnancy tumors occurring in a mouth that is otherwise in excellent gingival health may sometimes be observed for resolution following delivery, but the size of the lesion or the presence of a generalized pregnancy gingivitis or periodontitis supports the need for treatment during pregnancy.



## **The peripheral ossifying or cementifying fibroma**

Is found exclusively on the gingiva; it does not arise in other oral mucosal locations.

Clinically, it varies from pale pink to cherry red and is typically located in the interdental papilla region.

This reactive proliferation is named because of the histologic evidence of calcifications that are seen in the context of a hypercellular fibroblastic stroma.

Peripheral ossifying or cementifying fibromas occur in teenagers and young adults and are more common in women.

The existence of these lesions indicates the need for a periodontal consultation.

Treatment should include the elimination of subgingival irritants and gingival pockets throughout the mouth, as well as excision of the gingival growth.



# Peripheral Giant Cell Granuloma

It occurs either as a peripheral exophytic lesion found exclusively on the gingiva or as a centrally located lesion within the jaw skull or facial bones.

PGC granulomas are five times as common as the central lesions.

Both peripheral and central lesions are histologically similar and are considered to be examples of benign inflammatory hyperplasia in which cells with fibroblastic, osteoblastic and osteoclastic potential predominate in the tissue.

# Vascular Anomalies

## Hemangioma

Hemangiomas of the head and neck are true neoplasms and appear a few weeks after birth and grow rapidly.

They have been described in almost all head and neck locations in a variety of presentations: superficial and deep, small and large, most commonly as solitary lesions but also as multiple lesions.

Small lesions may be clinically indistinguishable from pyogenic granulomas and superficial venous varicosities.

Care should be taken in performing biopsies or excising all vascular lesions:

- 1- They have a tendency for uncontrolled hemorrhage
- 2- The extent of the lesion is unknown since only a small portion may be evident in the mouth.



# Lymphangioma

It is characterized by an abnormal proliferation of lymphatic vessels.

The most common extraoral and intraoral sites are the neck (predominantly in the posterior triangle) and tongue, respectively.

The vast majority (80%–90%) of lymphangiomas arises within the first 2 years of life and are an important cause of congenital macroglossia.

Clinically, lymphangiomas are a slow-growing and painless soft tissue masses.

They may undergo a rapid increase in size secondary to inflammation from an infection or hemorrhage from trauma.

Large lymphangiomas may become life threatening if they compromise the airway or vital blood vessels and those spreading into and distending the neck are macrocystic and are referred to as cystic hygromas.

Differential diagnoses of lymphatic malformations of the tongue include infantile hemangioma or other vascular malformations, congenital hypothyroidism, mongolism, amyloidosis, neurofibromatosis, various storage diseases, and primary muscular hypertrophy of the tongue, all of which may cause macroglossia.

# Neurogenic Lesions

## Traumatic Neuroma

A traumatic neuroma is not a true tumor but a proliferation of nerve tissue that is caused by injury to a peripheral nerve.

Nerve tissue is encased in a sheath composed of Schwann cells and their fibers. When this sheath is disrupted, the nerve loses its framework. When a nerve and its sheath are damaged, the proximal end of the damaged nerve proliferates into a mass of nerve and Schwann cells mixed with dense fibrous scar tissue.

In the oral cavity, injury to a nerve may occur from injection of local anesthesia, surgery, or other sources of trauma.

Traumatic neuromas are often painful. The discomfort may range from pain on palpation to severe and constant pain. Most traumatic neuromas occur in adults.

Traumatic neuromas in the oral cavity may occur in any location where a nerve is damaged; the mental foramen area is the most common location.

The definitive diagnosis is made on the basis of a biopsy and microscopic examination.

Traumatic neuromas are treated by surgical excision. Recurrence rates for neuromas are rare.

# Neurofibromatosis

Multiple neurofibromas occur in a genetically inherited disorder known as neurofibromatosis 1 (NF1) or von Recklinghausen's disease.

This disease is transmitted as an autosomal dominant trait, and the *NF1* gene has been identified.

Oral neurofibromas are a common feature of the disease. The presence of numerous neurofibromas or a plexiform-type neurofibroma is pathognomonic of NF1.

Patients with NF1 are at increased risk of the development of malignant tumors, especially malignant peripheral nerve sheath tumor, leukemia, and rhabdomyosarcoma





## Lipoma

Is a benign tumor of mature fat cells. When occurring in the superficial soft tissue, the lipoma appears as a yellowish mass with a thin surface of epithelium. Because of this thin epithelium, a delicate pattern of blood vessels is usually observed on the surface.

Deeper lesions may not demonstrate this finding and therefore are not as easily identified clinically.

The majority of oral lipomas are found on the buccal mucosa and tongue and occur in individuals over 40 years of age, without any sex predilection.

The lipoma is treated by conservative surgical excision and generally does not recur.



# Premalignant lesions of the oral mucosa

## 1-Hyperkeratosis (focal keratosis)

Is a microscopic term meaning increased thickness of the keratin layer of stratified squamous epithelium with no microscopic evidence of atypical epithelial cells.

Clinically, hyperkeratotic lesions appear as white, rough, non-painful patches that do not rub off. They are often secondary to chronic irritation, such as biting, tooth irritation, or tobacco use.

Hyperkeratotic lesions on oral mucosal surfaces that are normally keratinized, such as dorsum of the tongue, hard palate, and attached gingiva, sometimes represent a physiologic response (callus) to chronic irritation.

These lesions will usually resolve if the irritant is removed. Hyperkeratotic lesions on surfaces that are normally non-keratinized are potentially more serious and should be biopsied if they do not resolve if irritants are removed.

## **2- Epithelial dysplasia**

Is atypical or abnormal growth of the stratified squamous epithelium lining a mucosal surface. It is a diagnosis that must be made microscopically.

These lesions appear clinically as white, rough, non-painful areas, or non-painful red patches (“erythroplakia” or “erythroplasia”), or patches that demonstrate both red and white areas.

Because these lesions are asymptomatic, the patient is usually not aware of them. Some lesions diagnosed as epithelial dysplasia will progress to squamous cell carcinoma, while others will resolve.

Since it is impossible to determine by microscopic examination which lesions will progress or resolve, treatment is complete surgical excision, if possible, and follow-up.

# Oral Cancer

Over 90% of malignant neoplasms of mouth are squamous cell carcinoma arising from mucosal epithelium.

Most remainder are adenocarcinoma of minor salivary glands, and only a few are undifferentiated or metastases.

Oral cancer is an aged-related disease and 98% of patients are over the age of 40 years and it is more common in males than females.

## **Aetiology**

The etiology of malignancy is complex & multifactorial.

Oral cancer is age related disease, which may reflect time for the accumulation of genetic changes and duration of exposure to initiators and promoters.

These include chemical and physical irritants, viruses, and hormonal effects, In addition, decreased immunologic surveillance over time.

Tobacco products and alcohol are the risk factors for oral cancer. Nicotine is a powerful and addicting drug. Epidemiologic studies have reported that up to 80% of oral cancer patients were smokers.