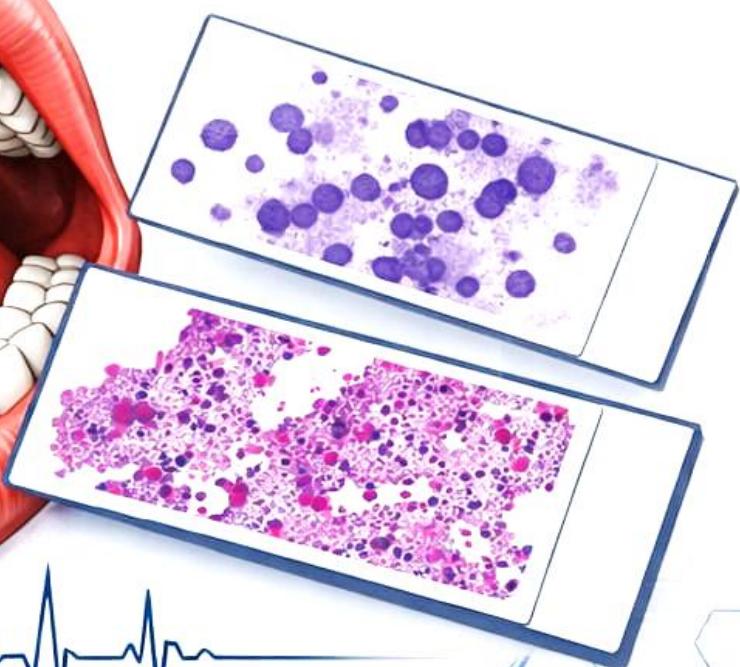


# ORAL PATHOLOGY





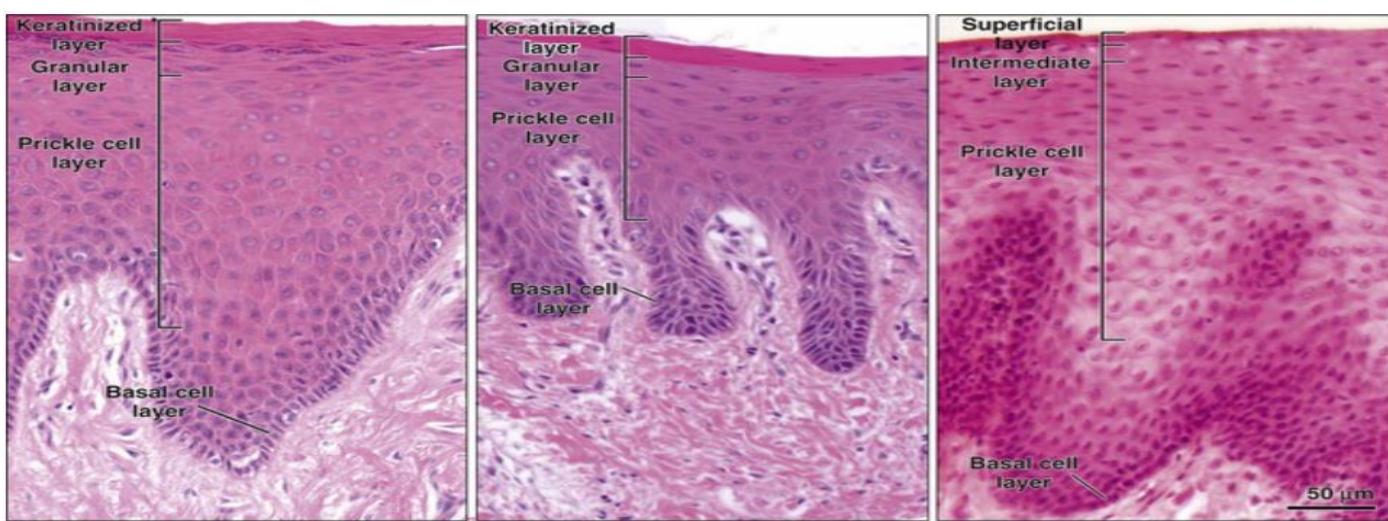
## Objectives

By the end of this lecture, you should be able to:

- 1 Classify oral white lesions according to their etiology.
- 2 Describe the characteristic features of oral white patches.
- 3 Discriminate between similar oral white lesions.
- 4 Correlate the clinical features with histopathologic changes of oral white lesions.




## Introduction



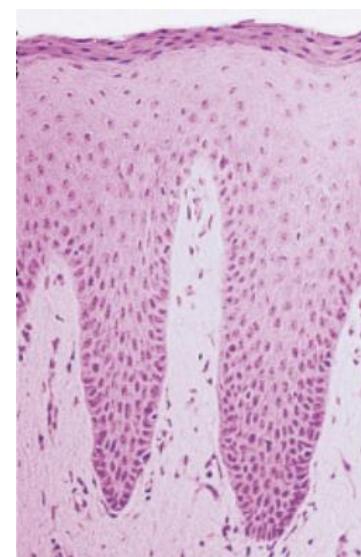
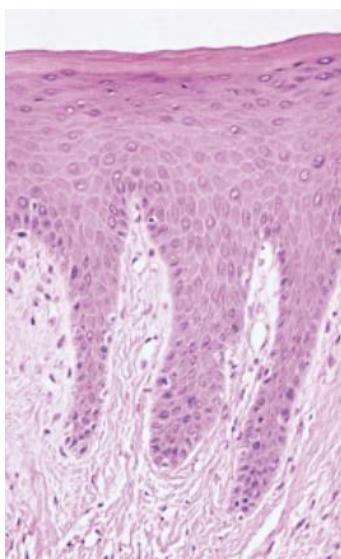

## Types of Epithelium

### 1 Orthokeratin

- Keratin layer present
- Nuclei are lost
- Granular cell layer: Prominent

### 2 Parakeratin

- Keratin layer present
- Nuclei are retained
- Granular cell layer: Absent

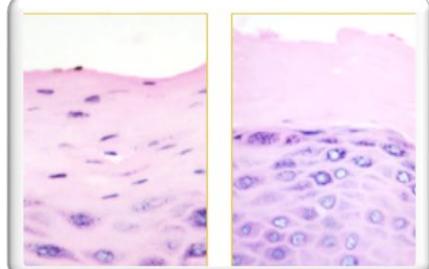


## 📌 Important Histologic Terms

### ◆ Hyperkeratosis

Increased thickness of keratin layer, either:

- Hyperparakeratosis
- Hyperorthokeratosis



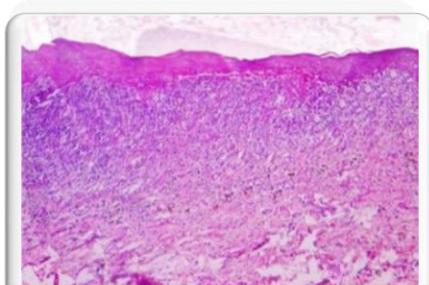
### ◆ Acanthosis

- Hyperplasia of prickle cell layer
- Results in increased epithelial thickness
- Broad and elongated rete ridges



### ◆ Epithelial Atrophy

- Decreased epithelial thickness
- Usually associated with loss of rete ridges



## ○ White Lesions

**Definition** Lesions that appear as white patches in **the oral cavity**.

## ⚙️ Causes of White Appearance

- 1 Increased keratin production
- 2 Hyperplasia of spinous layer (acanthosis) without keratin production
- 3 Intracellular edema of spinous cell layer
- 4 Increased fibrosis in underlying connective tissue



# Classification of Oral White Lesions (According to Etiology)

## 1 Hereditary Conditions

- Leukoedema
- White sponge nevus
- Hereditary benign intraepithelial dyskeratosis
- Follicular keratosis (Darier's disease)

## 2 Reactive Lesions

- Focal (Frictional) hyperkeratosis
- Nicotine stomatitis
- Oral hairy leukoplakia
- White lesions associated with smokeless tobacco
- Hairy tongue

## 3 Immune-Mediated Lesions

- Lichen planus
- Psoriasis
- Lupus erythematosus

## 4 Non-Epithelial White–Yellow Lesions

- Mucosal burns
- Submucous fibrosis
- Fordyce's granules
- Ectopic lymphoid tissue
- Gingival cysts
- Lipoma

## 5 Preneoplastic Lesions

- Actinic cheilitis
- Idiopathic leukoplakia
- Candidal leukoplakia

## 6 Neoplastic Lesions

- ◆ Benign
  - Squamous cell papilloma
- ◆ Malignant
  - Squamous cell carcinoma
  - Verrucous carcinoma



 Leukoedema

 Definition

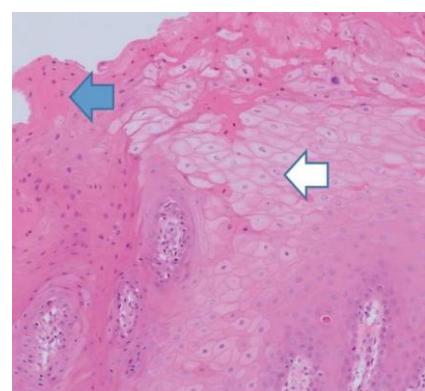
- An abnormality of the buccal mucosa of **unknown cause**
- Considered a **variation of normal** rather than a disease

 Predisposing Factors

- Smoking
- Chewing tobacco
- Alcohol ingestion
- Bacterial infection


 Clinical Features

- **Race:** More common in **black** individuals
- **Site:** Buccal mucosa, labial mucosa
- **Shape:** Bilateral, symmetrical gray-white diffuse milky opalescent mucosa
- **Late stages:** Wrinkling or corrugation
- **Symptoms:** Asymptomatic

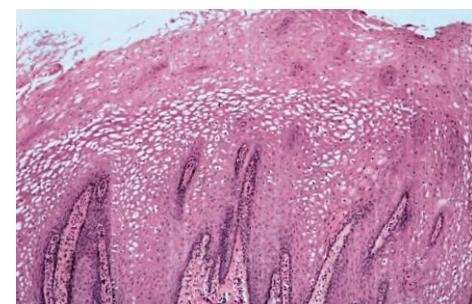

 Histopathology

- Hyperkeratosis
- Acanthosis
- Broad and elongated rete ridges
- **Intra**cellular edema of spinous cell layer
- Enlarged epithelial cells with small pyknotic nuclei in clear cytoplasm

## Diagnosis



4





# White Sponge Nevus

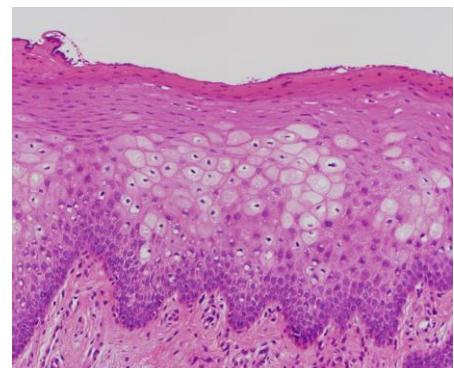
(Also called: Cannon's disease / Familial white folded gingivostomatitis)

## Etiology

- Autosomal dominant inherited condition
- Defect in keratinization due to **mutations in keratin 4 and 13**

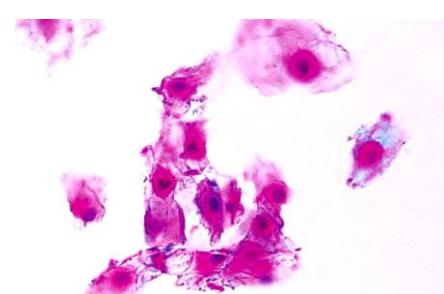
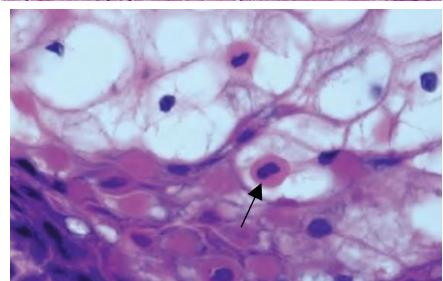
## Clinical Features

- Age: At birth or early life (before puberty)
- Site: Buccal mucosa
- Bilateral and symmetrical
- Corrugated or folded surface
- Spongy consistency
- Asymptomatic



## Histopathology

- Hyperparakeratosis
- Acanthosis
- Intercellular edema (**spongiosis**)
- Marked hydropic / clear cell changes
- Clear cytoplasm with pyknotic nuclei
- Basket-weave appearance
- Perinuclear eosinophilic condensation (characteristic feature)
- Tangled masses of keratin tonofilaments
- Papanicolaou smear shows eosinophilic perinuclear condensation





# Frictional Keratosis

(Focal Frictional Hyperkeratosis)

## Definition

White lesion related to chronic rubbing or friction against oral mucosa.

## Common Sites

- Lateral borders of tongue
- Buccal mucosa along occlusal line
- Lip
- Edentulous alveolar ridge



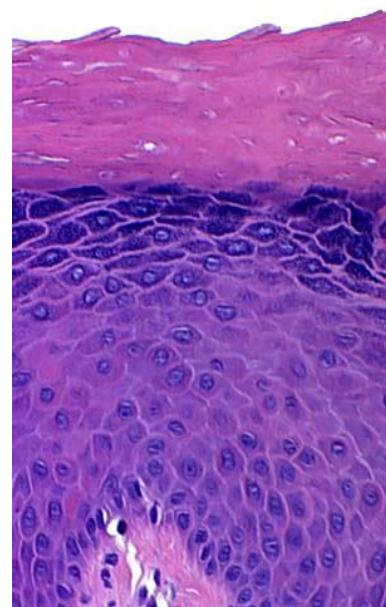
## Causes

- Sharp tooth
- Cheek biting



## Histopathology

- Hyperkeratosis
- Acanthosis
- Few chronic inflammatory cells



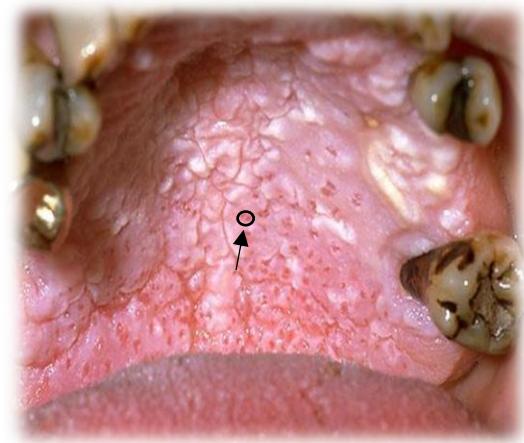


# Nicotine Stomatitis

(Smoker's Palate)

## 📌 Association

- Pipe and cigar smoking
- Severity correlates with intensity of smoking



## ⚙️ Pathogenesis

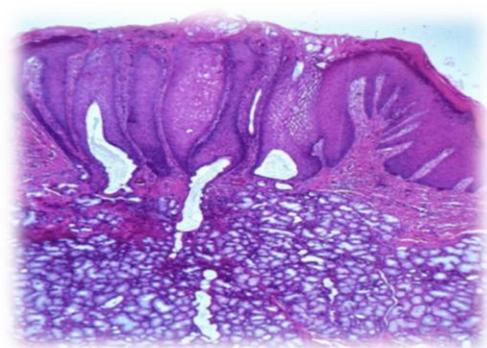
- Long-term heat exposure
- Initial erythematous change
- Followed by keratinization
- Red dots surrounded by white keratotic rings  
(Inflamed salivary gland duct orifices)

## ⚕️ Clinical Features

- Sex: More common in men
- Site: Palate
- Appearance: Fissured or "dried mud" palate

## 🔬 Histopathology

- 1 Epithelial hyperplasia
- 2 Hyperkeratosis
- 3 Inflammation of minor salivary glands
- 4 Squamous metaplasia of excretory ducts



## 📈 Prognosis

- Completely reversible
- Returns to normal within 1–2 weeks after smoking cessation
- Not precancerous





# Oral Hairy Leukoplakia

## Definition

A white mucosal plaque with hairy or corrugated surface that cannot be rubbed off.

## Etiology

- Epstein–Barr Virus (EBV)
- Reported in up to **80% of AIDS** cases



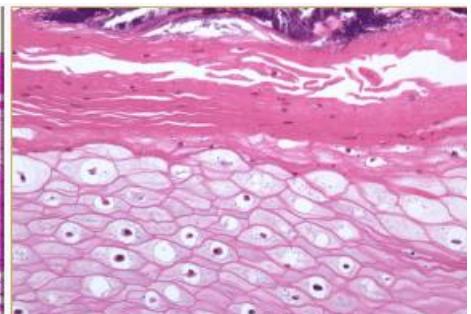
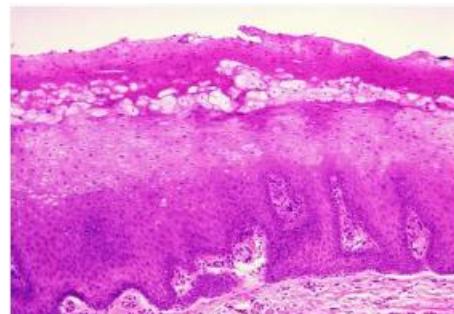
## Clinical Features

- Site: Lateral border of tongue (most common), then ventral surface
- Appearance:
  - Faint white vertical streaks
  - Thickened, furrowed shaggy leukoplakia
- Symptoms: Asymptomatic



## Histopathology

- Koilocytes (Balloon cells)



# Lichen Planus

## Definition

A common dermatological disease that manifests in the oral cavity and may precede skin lesions.



## Clinical Features

- Age:** Adults (rare in children)
- Sex:** Female > Male
- Oral Sites:** Gingiva, cheek, lips, tongue, palate
- Skin lesions:** Flexor surfaces of extremities



## Skin Lesions (4 Ps)

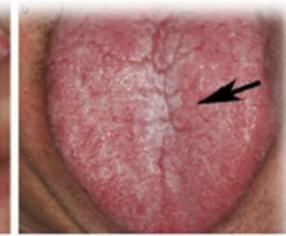
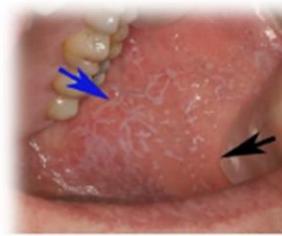
- Purple
- Pruritic
- Polygonal Flat-topped papules
- Bilateral and symmetrical
- Severe pruritis



## Forms of Oral Lichen Planus

### 1 Reticular LP (Classic form)

- Bilateral buccal mucosa
- Wickham's striae (diagnostic)



### 2 Hypertrophic LP

- Slightly elevated to smooth plaques
- Common on dorsum of tongue



### 3 Atrophic LP

Commonly affects attached gingiva

### 4 Erosive LP:

Usually symptomatic    Peripheral white radiating striae    Malignant potential

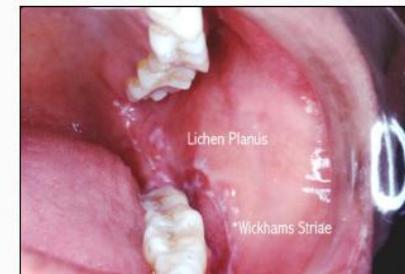
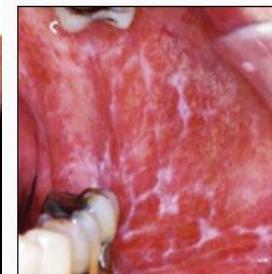
### 5 Bullous LP





## Reticular lichen planus

Wickham's striae are diagnostic



**Classic Form.**  
Mainly involve buccal mucosa bilaterally.

## Atrophic Lichen planus



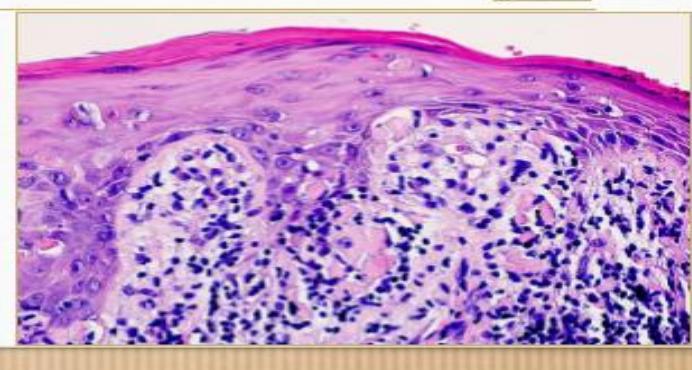
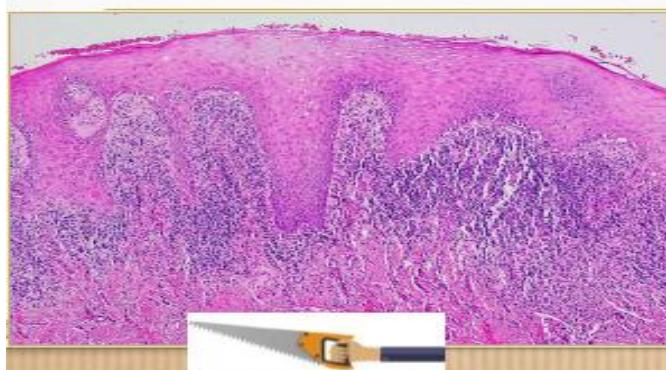
Usually,  
symptomatic

The periphery bordered by fine, white radiating striae.  
**Malignant Potentially**

## Erosive lichen planus



## Histopathology



## Chemical Burns

### ⚠ Etiology

- Drug abuse (e.g., Aspirin)
- Iatrogenic (e.g., phosphoric acid etching)

### ⚙ Pathogenesis      Tissue necrosis

### 🔬 Histopathology

- Coagulative necrosis of epithelium
- Fibrinous exudate
- Inflamed connective tissue

