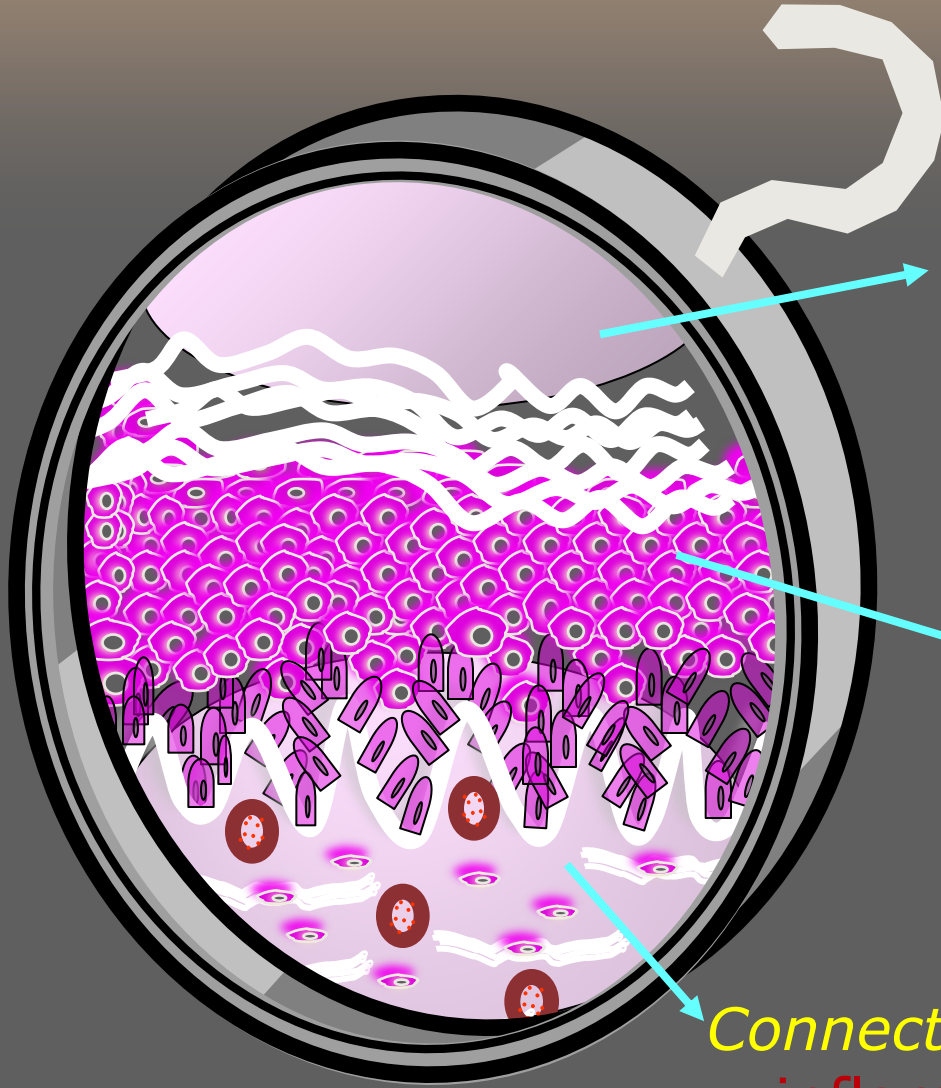


A landscape background showing a horizon line with a blue sky, brown hills, and a dark foreground.

White

and

Lesions of oral cavity



Surface changes :

- ~ increased keratinization
- ~ coagulation necrosis
- ~ deposits e.g. candidial hyphae, food debris

Intra-epithelial changes :

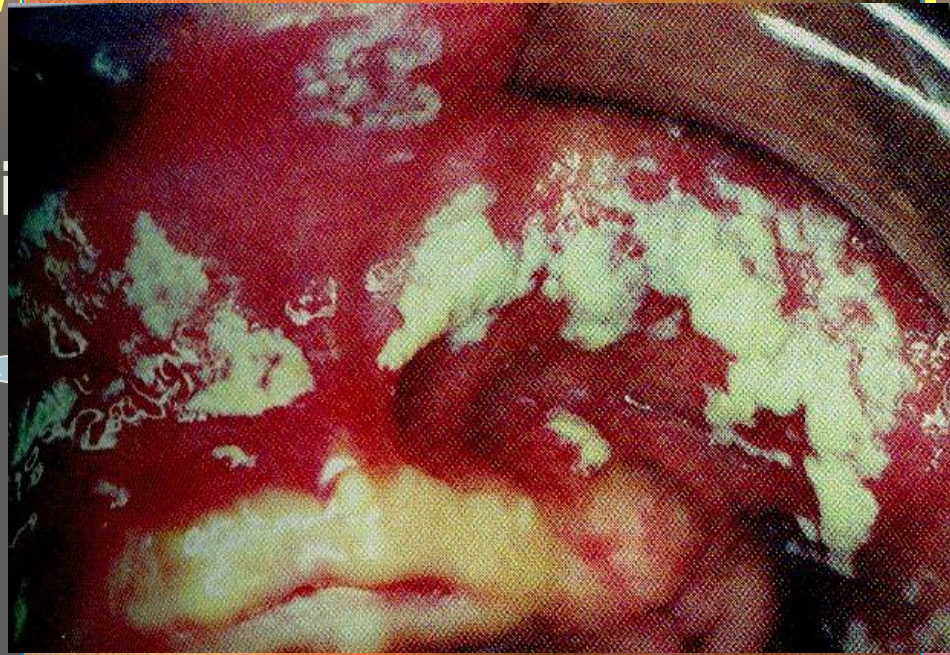
- ~ acanthosis
- ~ atrophy
- ~ erosion / ulceration

Connective tissue changes :

- ~ inflammation
- ~ fibrosis

Why does a white lesion appear white?

- Inc. thickness of epithelium
- Hyperkeratosis
- Acanthosis
- Inc. in edema fluid in epithelium
- Dec vascularity in conn. tissue
- Surface membrane



CLASSIFICATION

- 1. Variations from normal**
- 2. Non-Keratotic white lesions**
- 3. Oral candidiasis**
- 4. Keratotic white lesions with no increased potential for oral cancer**
- 5. Red and white lesions with unknown or increased malignant potential**

1. Variations from normal

- ~ Linea alba
- ~ Fordyce granules
- ~ Leukoedema

1. Variations from normal

2. Non-Keratotic white lesions

- ~ **Habitual cheek / lip biting**
- ~ **Burns**
- ~ **Lesions of specific infections**
- ~ **Uremic stomatitis**
- ~ **Radiation mucositis**

1. Variations from normal
2. Non-Keratotic white lesions
3. Oral candidiasis

~ **Acute pseudomembranous**
~ **Acute atrophic**
~ **Chronic atrophic**
~ **Chronic hypertrophic**

1. Variations from norm

2. Non-Keratotic white

3. Oral candidiasis

4. Keratotic white lesions with no increased potential for oral cancer

- ~ Stomatitis nicotina
- ~ Traumatic keratosis
- ~ Intra-oral skin grafts
- ~ Focal epithelial hyperplasia
- ~ Psoriasiform lesions
- ~ Psoriasis, Reiter's syndrome, Geographic tongue
- ~ Oral genodermatosis

- ~ **Leukoplakia**
- ~ **Erythroplakia**
- ~ **Oral submucous fibrosis**
- ~ **Lichen planus**
- ~ **Lichenoid reactions**
- ~ **Actinic keratosis, elastosis, Cheilitis**
- ~ **Discoid lupus erythematosus**
- ~ **Dyskeratosis congenita**
- ~ **Carcinoma in situ**
- ~ **Bowen's disease**
- ~ **Erythema multiforme, lupus erythematosus**

1. Var

2. No

3. Ora

4. Ker
cancer

5. Red and white lesions with unknown or increased malignant potential

SCRAPABILITY TEST

Scrapable Lesions

Burns

Acute Pseudo.
Candidiasis

Non-scrapable Lesions

- * Leukoedema
- * Linea alba
- * Fordyce Spots
- * Habitual Cheek Biting
- * Chronic Hyperplastic O
- * Traumatic Kerat
- * Leukoplak
- * H
- * O

STRETCHABILITY TEST

STRETCHABILITY TEST

Non-scrapable, non-stretchable Lesions

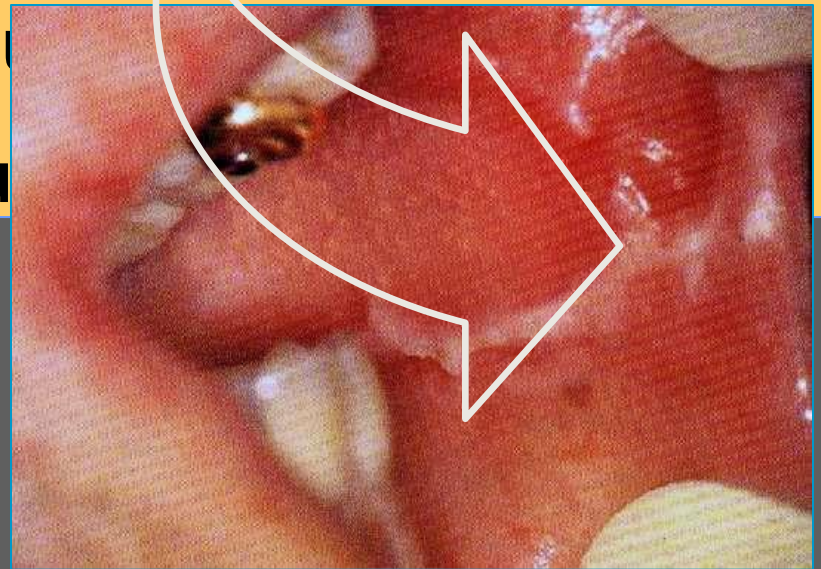
- * **Traumatic Keratosis**
- * **Leukoplakia**
- * **Oral Submucous Fibrosis**

Non-scrapable, stretchable Lesions

- * **Leukoedema**
- * **Linea alba**
- * **Fordyces Spots**
- * **Habitual Cheek Biting**
- * **Chronic Hyperplastic Candidiasis**
- * **Hypertrophic form of Lichen Planus**

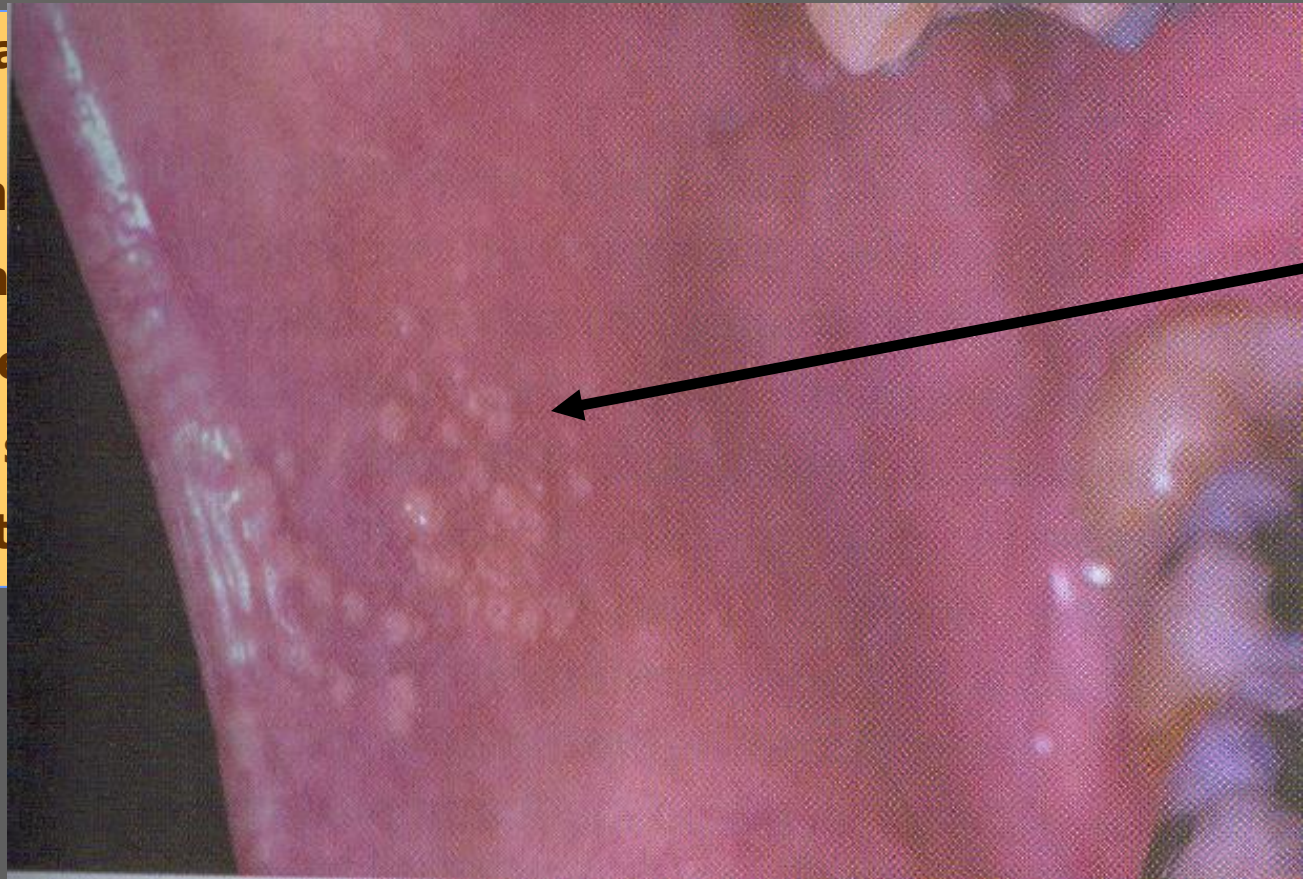
LINEA ALBA

- Horizontal streak at level of occlusal plane
- Extends from anterior teeth to posterior teeth
- Uniformly colored, only dentulous areas
- Present in all ages
- No associated pathology



FORDYCE'S GRANULES/ SPOTS

- Fordyce's granules are a type of sebaceous gland called Fordyce's granules or Fordyce's spots.
- present as multiple small, yellowish, raised bumps on the skin.
- often seen in the genital area.
- Men usually have them on the shaft of the penis.
- completely asymptomatic.
- no treatment needed.

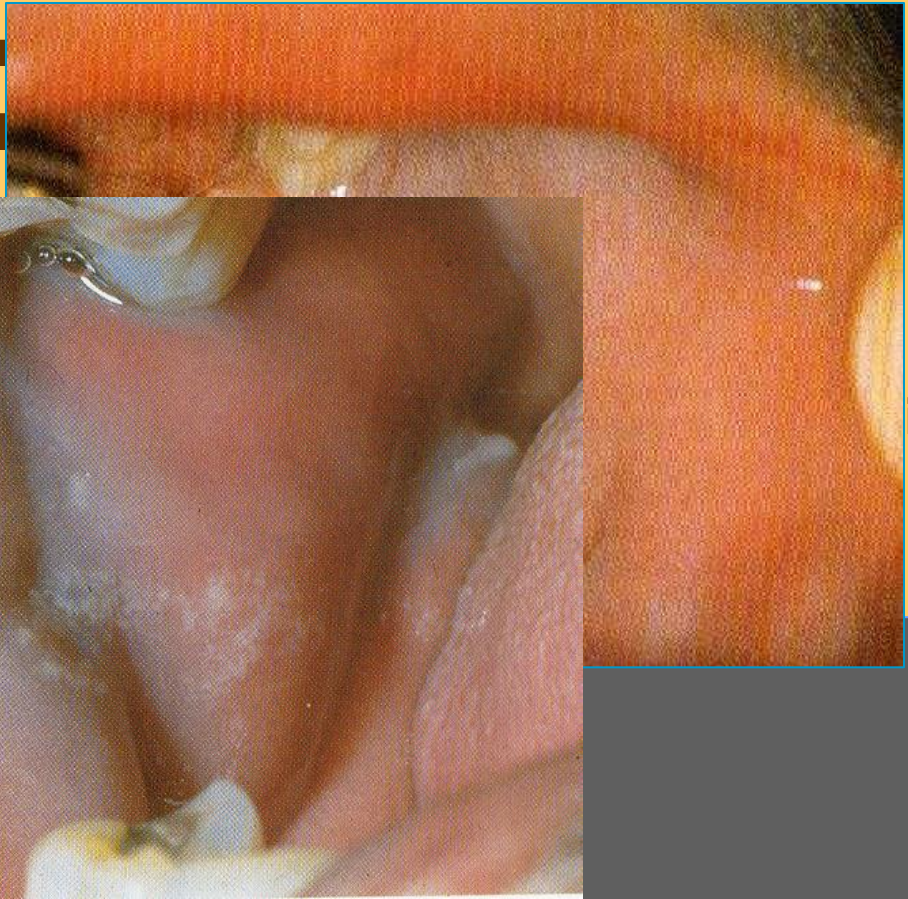


IS

LEUKOEDEMA



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- No treatment is indicated

Non-keratotic white lesions

Habitual cheek/lip biting



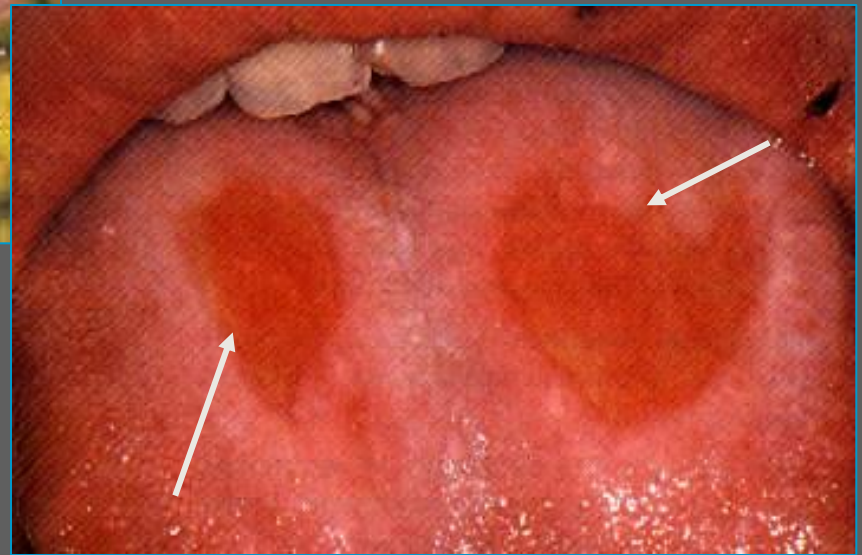
~ Radiation



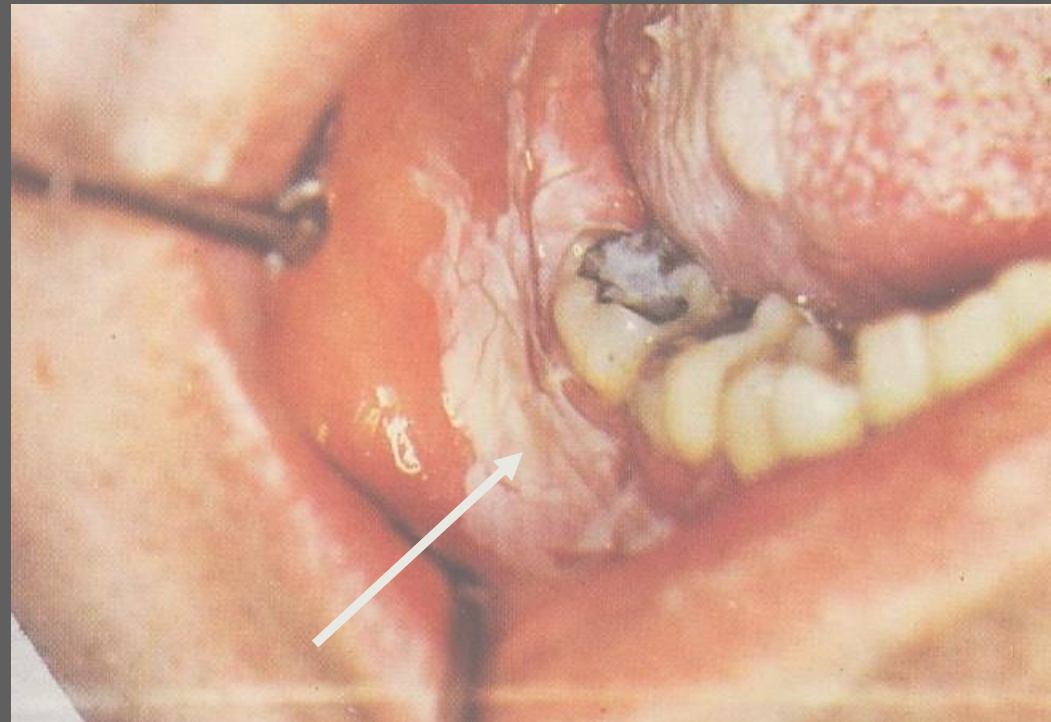
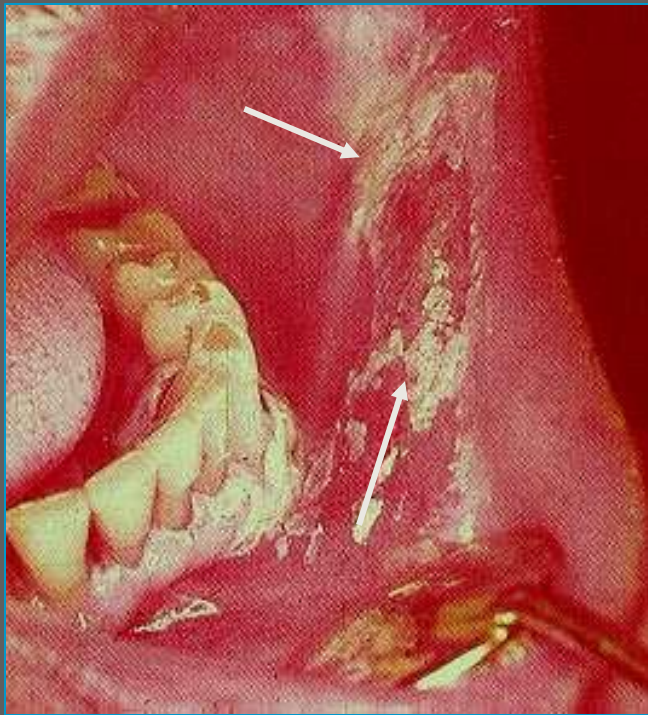
Burns- thermal, chemical, electrical



Thermal burns



Burns- thermal, chemical, electrical



Aspirin burn

Lesions of specific infections

Koplik's spot- Measles

- small white spots
- buccal mucosa



• bases
• lower lip

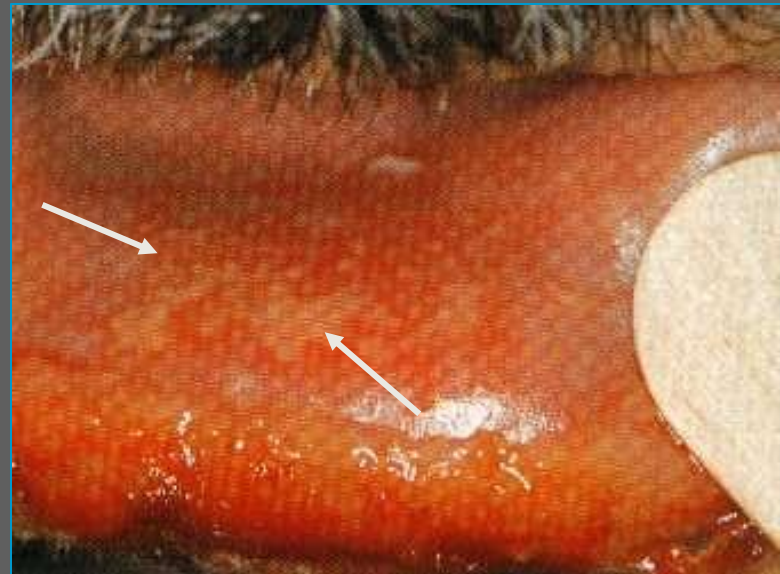
Lesions of specific infections

Mucous patches- Secondary syphilis



Uremic stomatitis

Radiation mucositis



CANDIDIASIS

```
graph TD; A[CANDIDIASIS] --> B[MUCOCUTANEOUS]; A --> C[SYSTEMIC];
```

MUCOCUTANEOUS

- Oropharyngeal
- Esophageal
- Intestinal

SYSTEMIC

- Eyes
- Kidney
- Skin

CANDIDIASIS

Oro facial & intertriginous sites

- Moist surface
- Tissue debris
- Inadequate surface cleansing

- Mouth
- Vagina
- Colon
- Rectum
- Skin folds

CANDIDIASIS

Gastrointestinal candidiasis

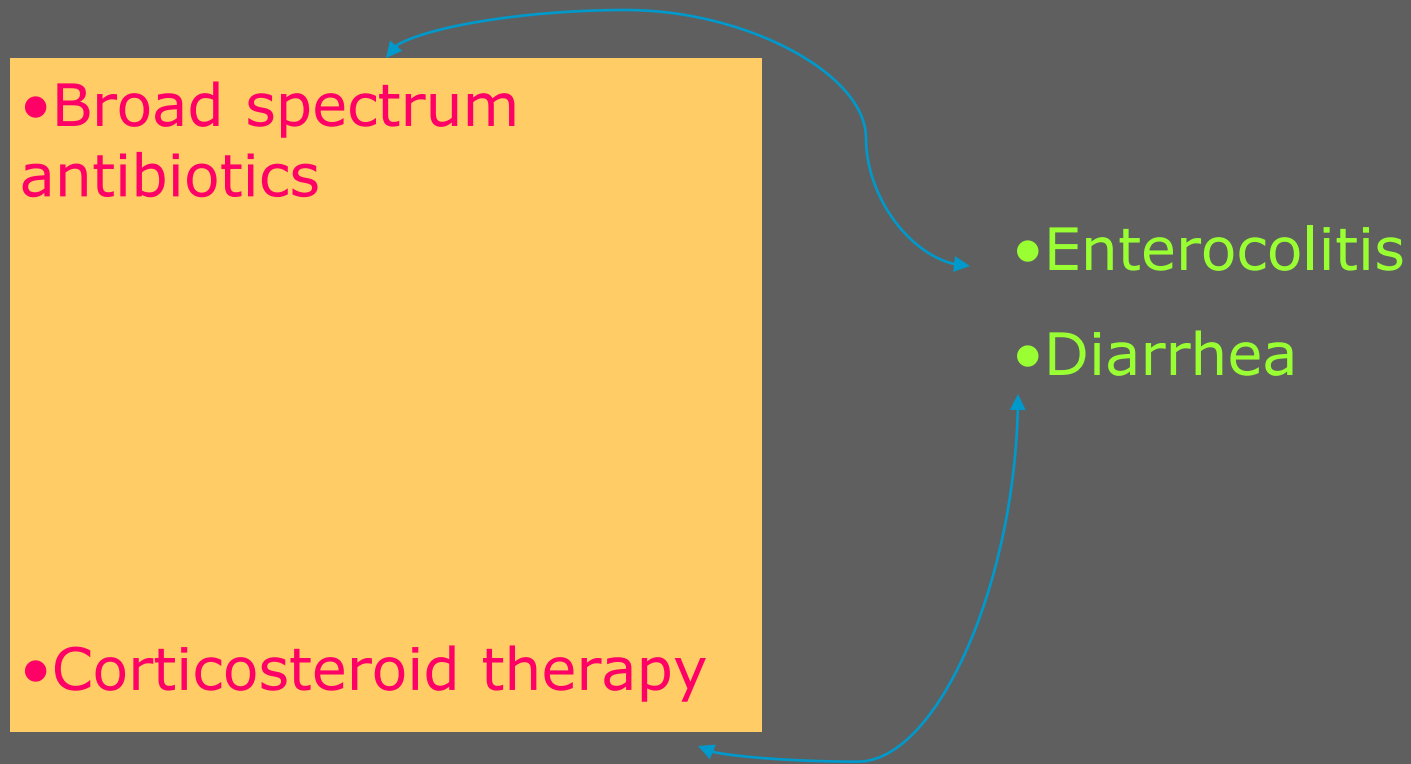
• Broad spectrum antibiotics

• Corticosteroid therapy

• Enterocolitis

• Diarrhea

□ Candida in faeces



CANDIDIASIS

Chronic mucocutaneous candidiasis

Chronic candidal inf.

- Defect in cellular immunity
- Structure of epidermis

Systemic candidiasis

Candidal granuloma formation in viscera

- AIDS patients
- Mainline drug abusers

ORAL CANDIDIASIS

- ~ Acute pseudomembranous
- ~ Acute atrophic
- ~ Chronic atrophic
- ~ Chronic hypertrophic

Etiology and pathogenesis

- Causative organism: *candida albicans*, commensals
- Predisposing factors:

ORAL CANDIDIASIS

Local

- ~ Change in oral microflora- xerostomia, local/systemic antibiotics
- ~ Local irritants- dentures, orthodontic appliances, smoking
- ~ Corticosteroids - topical/systemic
- ~ Radiation – head & neck
- ~ epithelial dysplasias- leukoplakia, lichen planus

ORAL CANDIDIASIS

Systemic

~ Age

~ Hospitalization

~ Immunological
deficiencies-

congenital, acquired

ORAL CANDIDIASIS

Clinical features

- **Age: varies with the clinical type**
- **Sex: no predilection for either males or females**
- **Site: varies with clinical type and predisposing factor**
- **Symptoms: burning sensation, metallic taste, pain, excessive salivation**

ORAL CANDIDIASIS

Acute pseudomembranous candidiasis ('thrush')

Clinical features

Predisposing factor

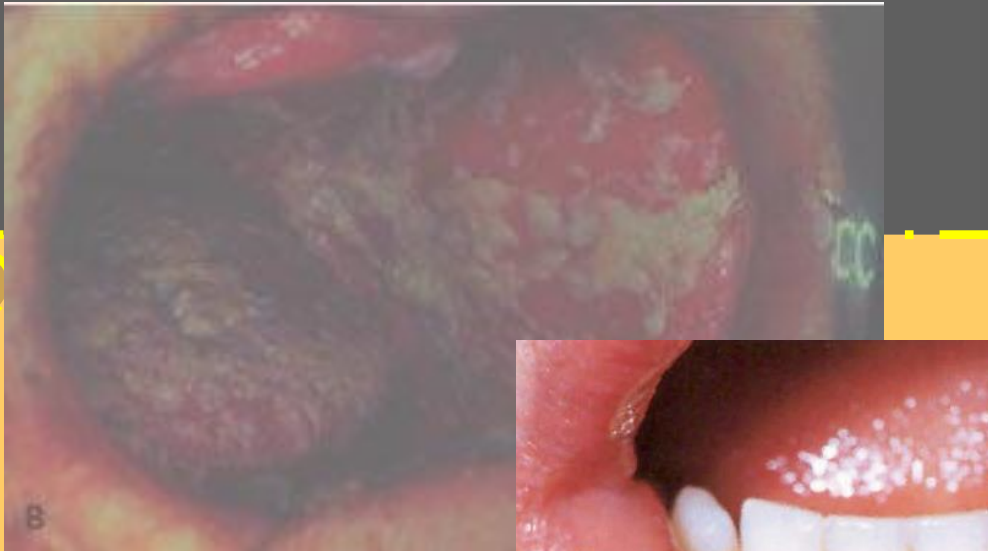
- ~ Age- infancy
- ~ Immunological deficiencies- congenital, acquired

Appearance

- ~ usually on palatal mucosa
- ~ curd-like white pseudomembranous lesion
- ~ Removal -erosion underneath, which may bleed-
'pin point` bleeding

ORAL CANDIDIASIS

Acute pseudomembranous candidiasis ('thrush')



~Sore throat

ORAL CANDIDIASIS

Acute atrophic candidiasis ('antibiotic sore mouth')

Predisposing factor

- ~ Prolonged topical or systemic antibiotics
- ~ Hospitalization

ORAL CANDIDIASIS

**Acute atrophic candidiasis ('ant
Clinical features**



ORAL CANDIDIASIS

Chronic atrophic candidiasis (`denture sore mouth`)

Clinical features

Predisposing factors

~ Ill-fitting denture
~ orthodontic appliances

Appearance

~ red, atrophic patches
denture/ appliance

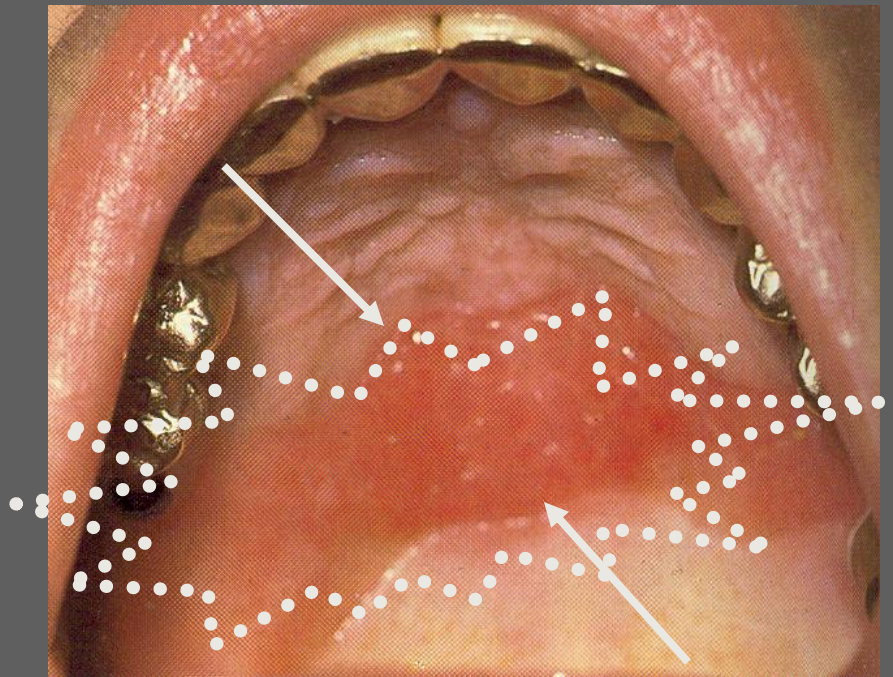
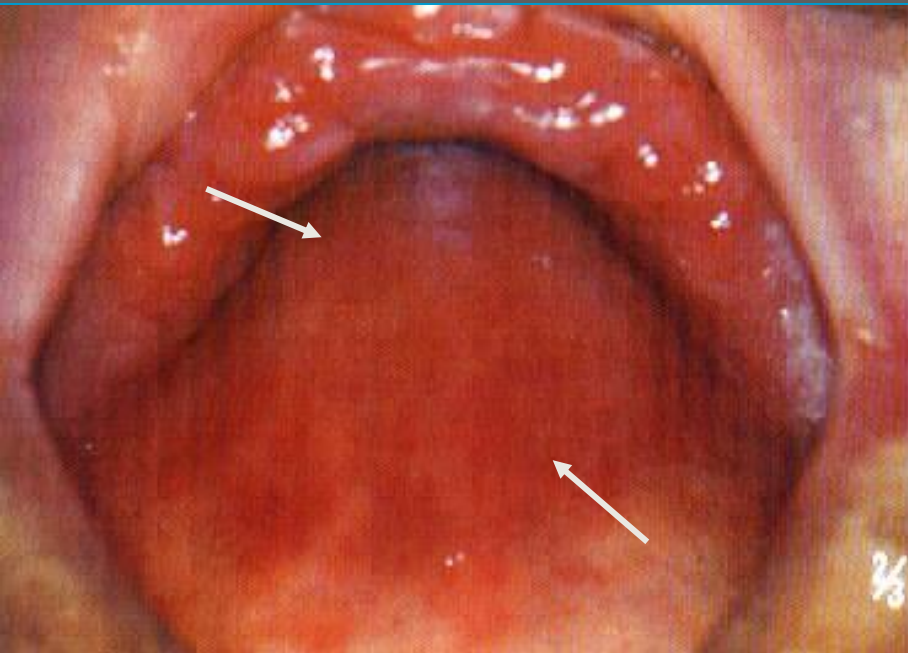
~ some white plaques

~ mucosal surface of denture/ appliance shows matted hyphae



ORAL CANDIDIASIS

Chronic atrophic candidiasis ('denture sore mouth')



ORAL CANDIDIASIS

Chronic atrophic candidiasis ('angular cheilitis')

Clinical features

Predisposing factor

~ Pooling of saliva at corners of mouth

Appearance

~ red, atrophic/erosive at corners of mouth

~ some membranous areas may be seen

~ bleeding on movement

ORAL CANDIASIS

Clinical features



Chronic atrophic candidiasis ('angular cheilitis')

ORAL CANDIDIASIS

Clinical features

Chronic atrophic candidiasis ('median rhomboid glossitis')

Predisposing factor

(?) Developmental defect in tongue mucosa

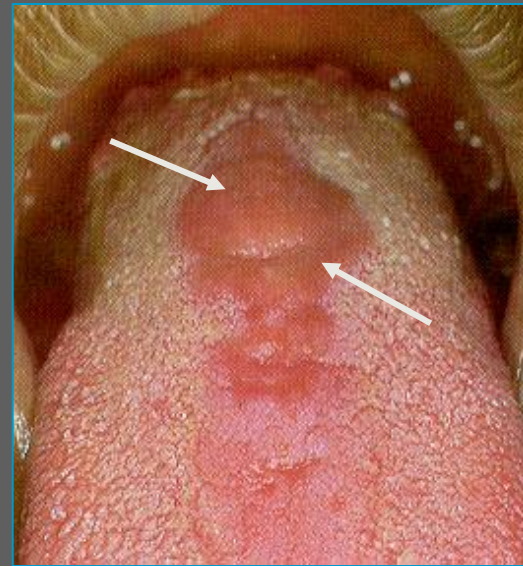
Appearance

~ depapillated area on dorsum of tongue- anterior to circumvallate papillae

ORAL CANDIDIASIS

Clinical features

Chronic atrophic candidiasis ('median rhomboid glossitis')



ORAL CANDIDIASIS

Clinical features

Chronic atrophic candidiasis ('median rhomboid glossitis')



ORAL CANDIDIASIS

Clinical features

Chronic hyperplastic candidiasis



Predisposing factor
epithelial dysplasia
when planus
immunodeficiency

Prevalence
non-scratching
existing leukoplakia

planus

a,

ORAL CANDIDIASIS

Investigations

- **Demonstration of large number of mycelia in salivary sample**
- **Culture on Sabouraud's medium**
- **Histological examination with PAS stain**

Differential diagnosis

ORAL CANDIDIASIS

Treatment

1. Identification and removal of predisposing factor
2. Anti-fungal agents
3. Symptomatic relief

Topical

- **Nystatin: lactose containing dissolvable tablets, 1,00,000 units/tab, 1 tab allowed to dissolve in mouth, 3 times a day for 14 days, *Mycostatin***
- **Clotrimazole: 1% cream/solution, to apply/rinse 5 times a day for 14 days, *Candid, Imidil***

ORAL CANDIDIASIS

Treatment

1. Identification and removal of predisposing factor
2. Anti-fungal agents
3. Symptomatic relief

Topical

- Miconazole: 2% gel, to apply 5 times a day for 14 days, *Micogel*
- Chlorhexidine: 0.2% mouth wash, rinse with 10 ml solution 3 times a day for 7-10 days, also immerse dentures/appliance in the solution, *Clohex*

ORAL CANDIDIASIS

Treatment

1. Identification and removal of predisposing factor
2. Anti-fungal agents
3. Symptomatic relief

Systemic

- Ketoconazole: 200 mg tablet, once daily for 14 days, *Nizral*
- Fluconazole: 100/200 mg tablet, 200 mg on the first day, followed by 100 mg tablet once daily for 13 days, *Flucan*

ORAL CANDIDIASIS

Treatment

1. Identification and removal of predisposing factor
2. Anti-fungal agents
3. Symptomatic relief

Topical anesthetic

- Lignocain: 5% ointment, as required, *Gesicain*
- Benzydamine: 5% gel / 0.15% oral rinse, as required, *Tantum*

Prognosis

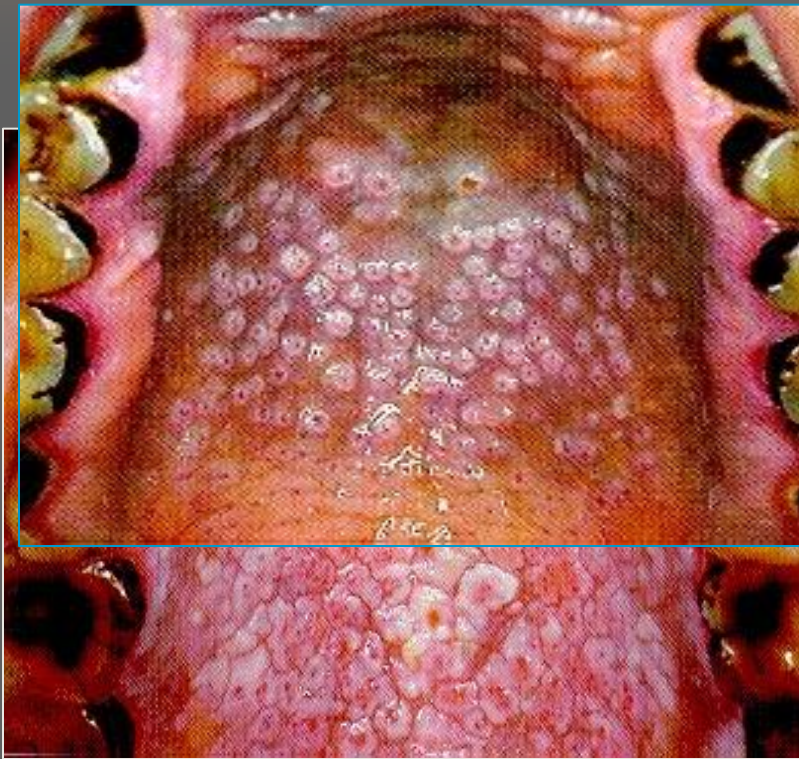
- Good, if predisposing factor could be eliminated.



4. Keratotic white lesions with no increased potential for oral cancer

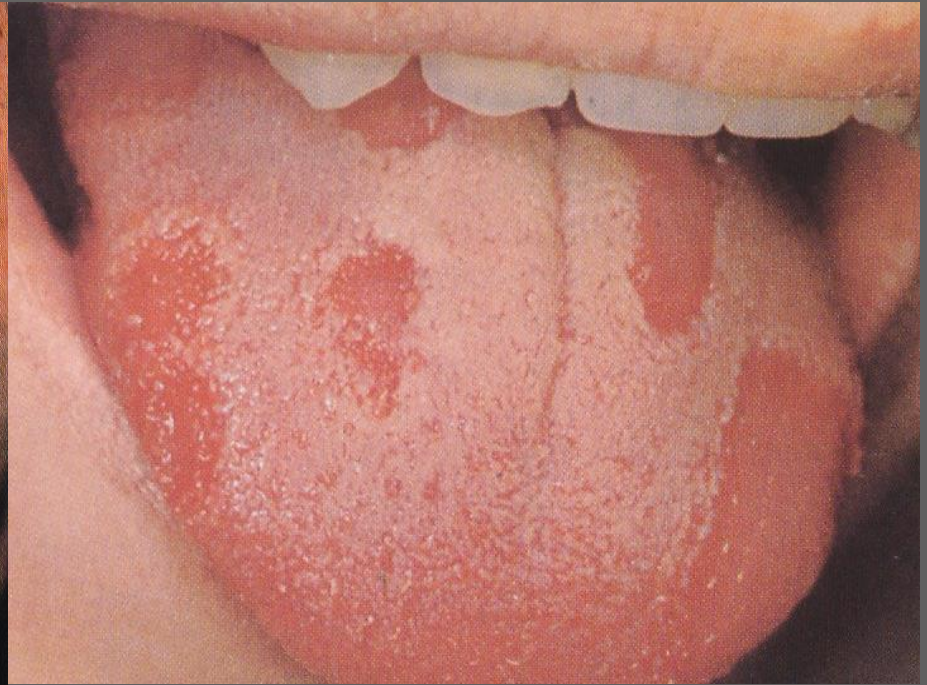
- ~ **Stomatitis nicotina**
- ~ **Traumatic keratosis**
- ~ **Intra-oral skin grafts**
- ~ **Focal epithelial hyperplasia**
- ~ **Psoriasiform lesions**
- ~ **Psoriasis, Reiter's syndrome, Geographic tongue**
- ~ **Oral genodermatosis**

STOMATITIS NICOTINA



Reverse smoking

GEOGRAPHIC TONGUE



Red and white lesions with unknown or increased malignant potential

- ~ Leukoplakia
- ~ Erythroplakia
- ~ Oral submucous fibrosis
- ~ Lichen planus
- ~ Lichenoid reactions
- ~ Actinic keratosis, elastosis, Cheilitis
- ~ Discoid lupus erythematosus
- ~ Dyskeratosis congenita
- ~ Carcinoma in situ
- ~ Bowen's disease
- ~ Erythema multiforme, lupus erythematosus

ORAL LICHEN PLANUS

Introduction

- **lichen planus is a common, chronic inflammatory disease of the skin and mucous membrane**
- **Prevalence in approximately 1% of the population**
- **40%-50% of patients with oral lesions have skin lesions**
- **Oral lesions precede or after skin lesions**



ORAL LICHEN PLANUS

- **Autoimmune response to probably basement membrane antigen**
- **Drug-induced antigen-antibody reaction**
- **Psychosomatic- Intense and prolonged emotional stress**
- **Hereditary tendency**

ORAL LICHEN PLANUS

Lichen planus



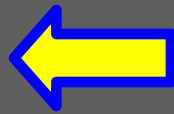
No definite etiology

"Lichen planus" like lesion



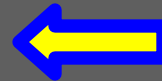
- Drugs
- Chemicals
- Metals
- Foods

DISAPPEARS
Lichenoid reaction



Agent (drug, chemical, metals, foods)

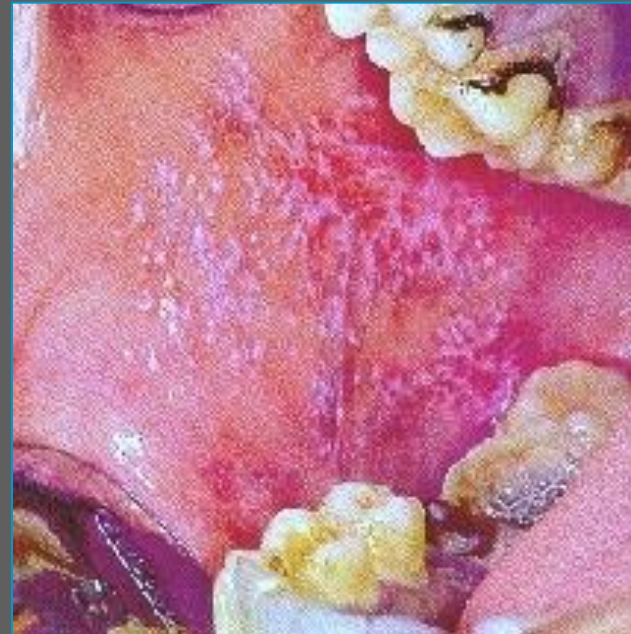
REMOVED



Lichenoid reaction



ORAL LICHEN PLANUS



ORAL LICHEN PLANUS



ORAL LICHEN PLANUS

Clinical features

- 1. Age: majority of cases in the 4rd to 6th decades.**
- 2. Sex: females are more frequently affected**
- 3. Site: bilateral buccal involvement followed by labial, lingual, palatal mucosae. Gingiva is less commonly involved.**

ORAL LICHEN PLANUS

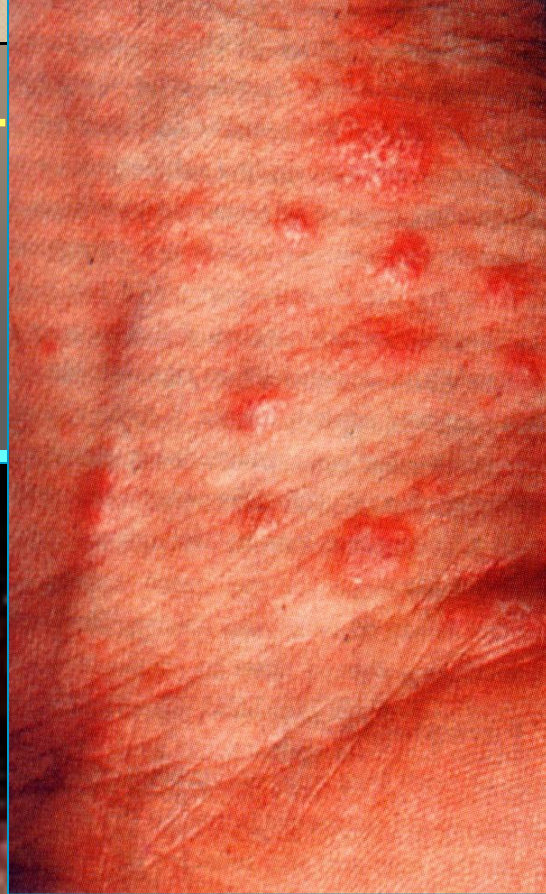
Clinical features

4. Symptoms: *some lesions are asymptomatic*
- Roughness/thickening of mucosa
 - Burning sensation, intolerance to spicy food
 - In some patients, intense pain causing difficulty in speech, swallowing or mastication
 - Anxiety

ORAL LICHEN PL

Clinical features

5. Signs:



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ORAL LICHEN PLANUS

Clinical features

5. Signs:

oral lesions-Categories

Reticular- lacelike keratotic mucosal configurations

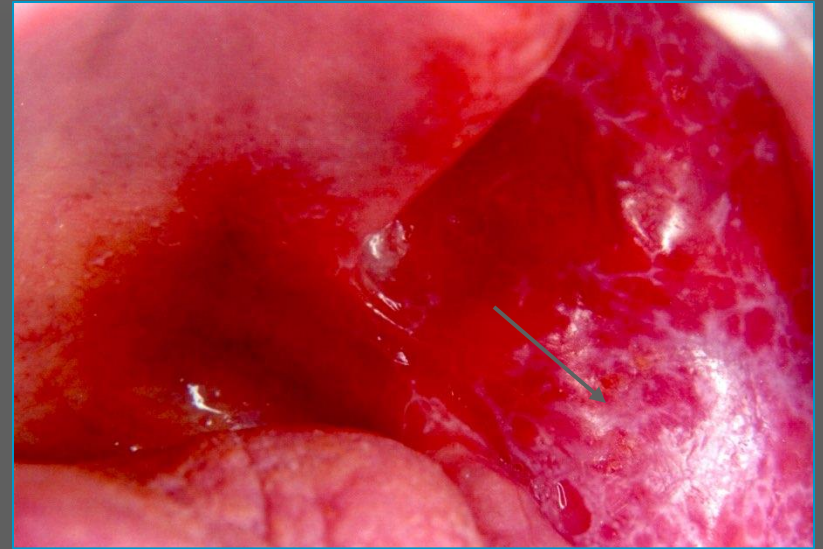
Erosive- pseudomembrane covered ulcerations combined with keratosis & erythema

Atrophic- keratotic changes combined with mucosal erythema

Bullous- vesiculobullous presentation combined with reticular or erosive patterns

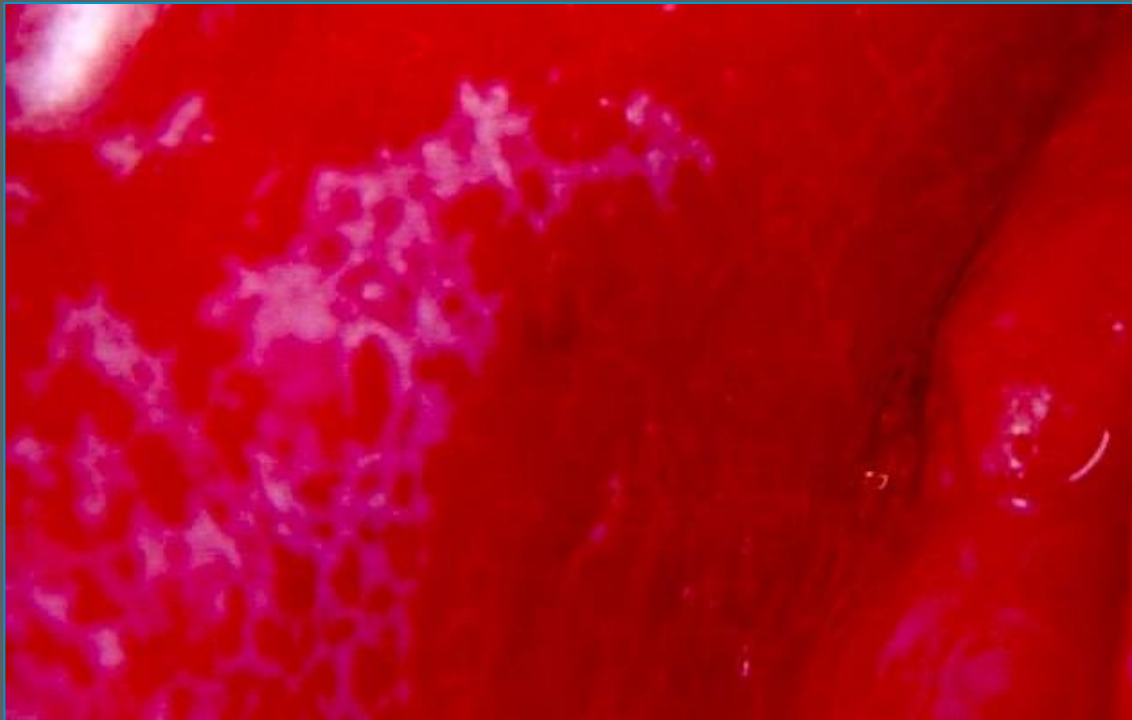
ORAL LICHEN PLANUS

Clinical features



ORAL LICHEN PLANUS

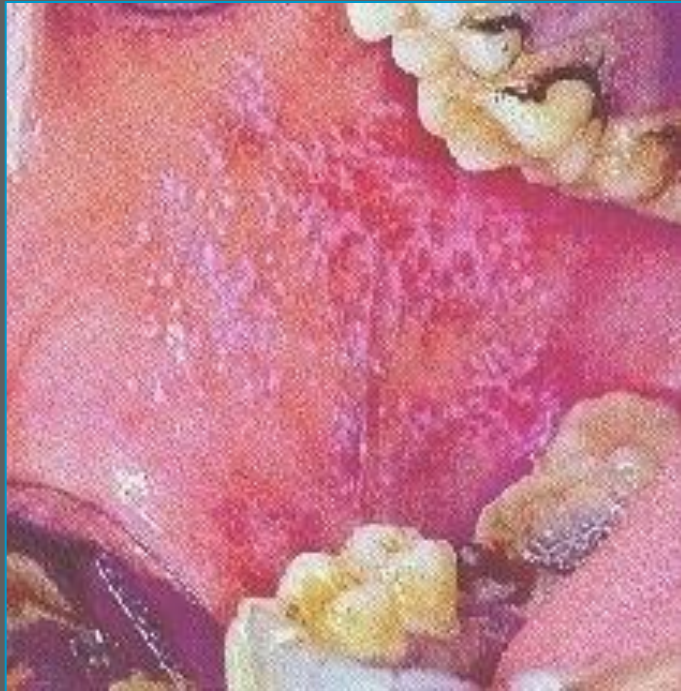
Clinical features



Reticular

ORAL LICHEN PLANUS

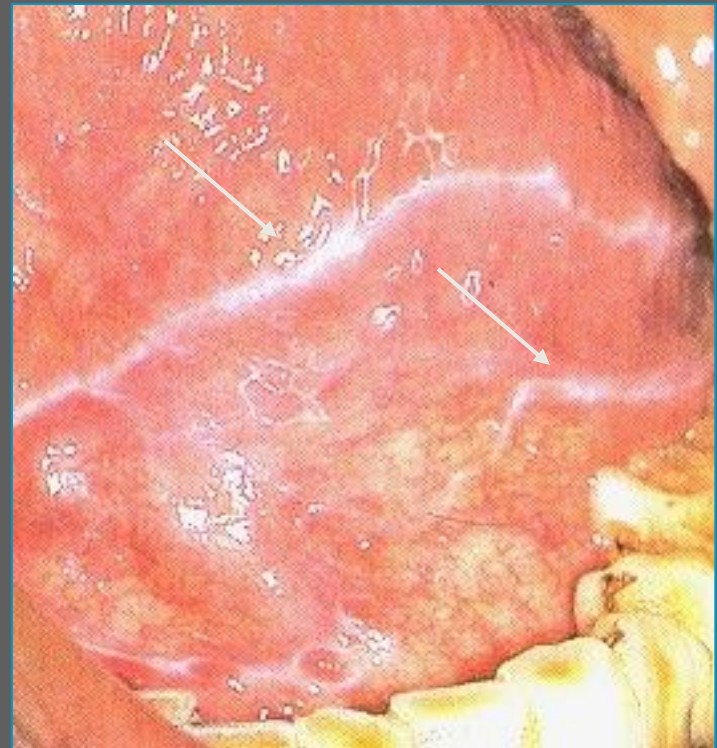
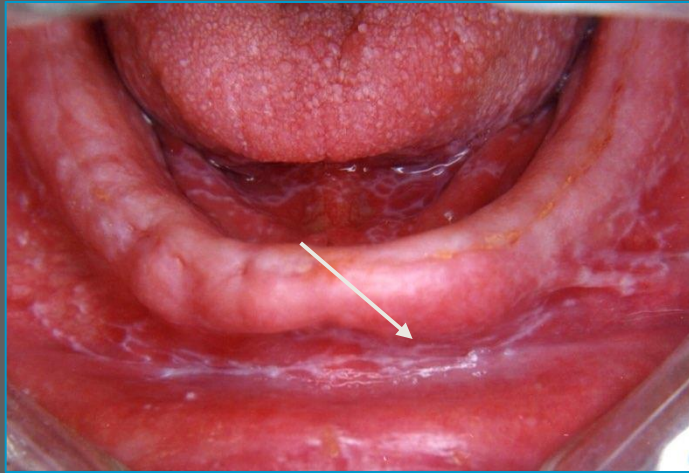
Clinical features



reticular

ORAL LICHEN PLANUS

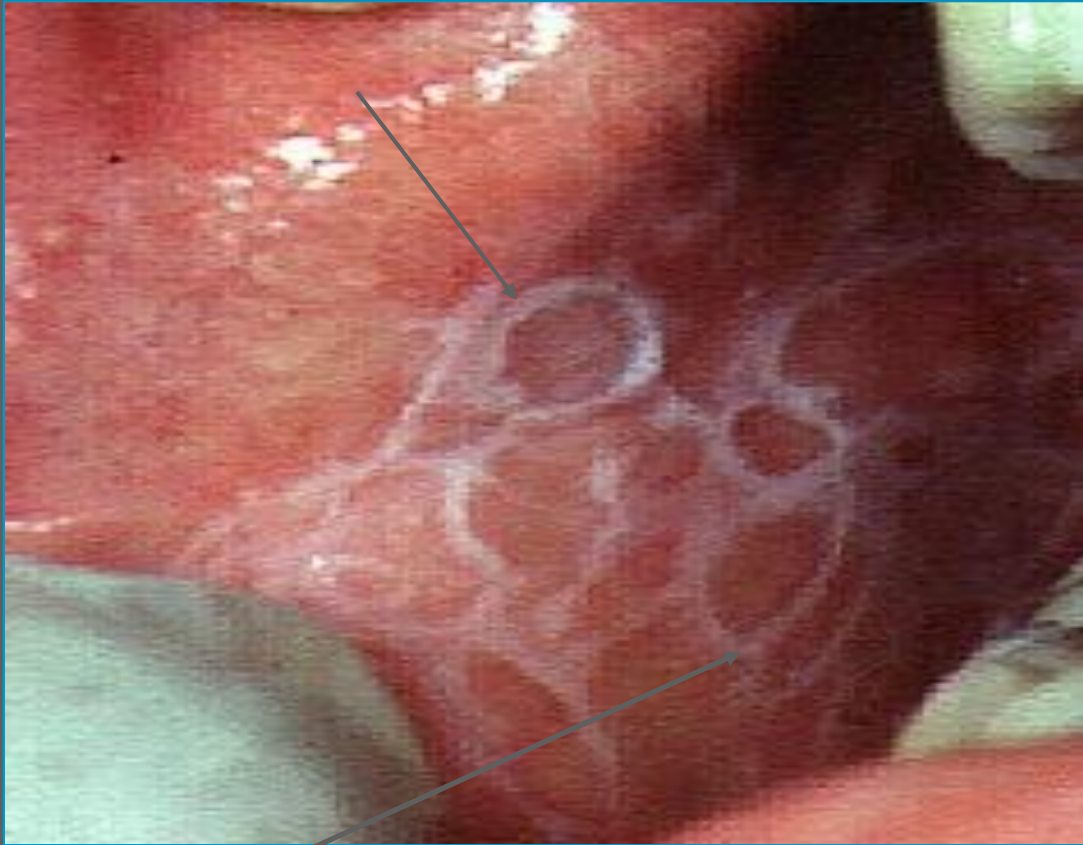
Clinical features



RETICULAR: linear pattern

ORAL LICHEN PLANUS

Clinical features



annular pattern

ORAL LICHEN PLANUS

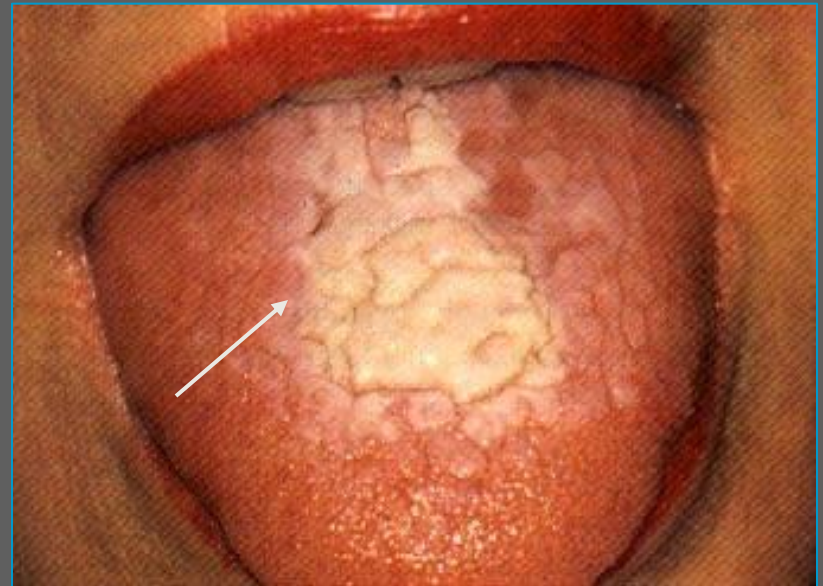
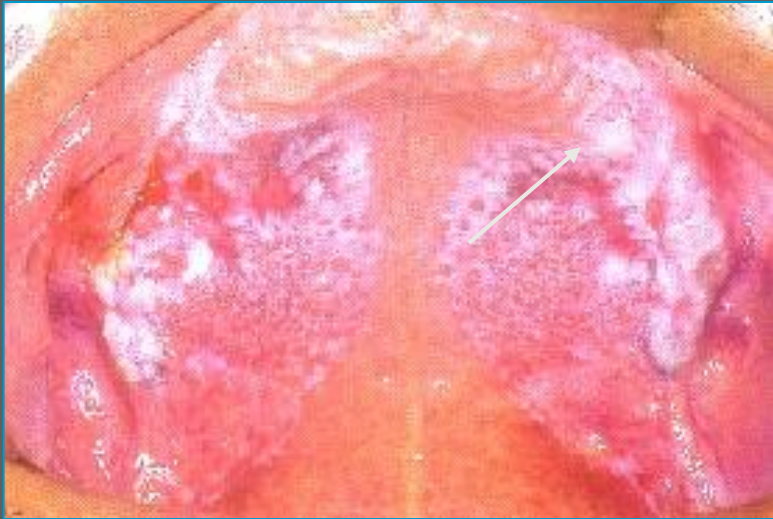
Clinical features



annular

ORAL LICHEN PLANUS

Clinical features



plaque-like

ORAL LICHEN PLANUS

Clinical features



plaque-like

ORAL LICHEN PLANUS

Clinical features



Reticular: with melanosis

ORAL LICHEN PLANUS

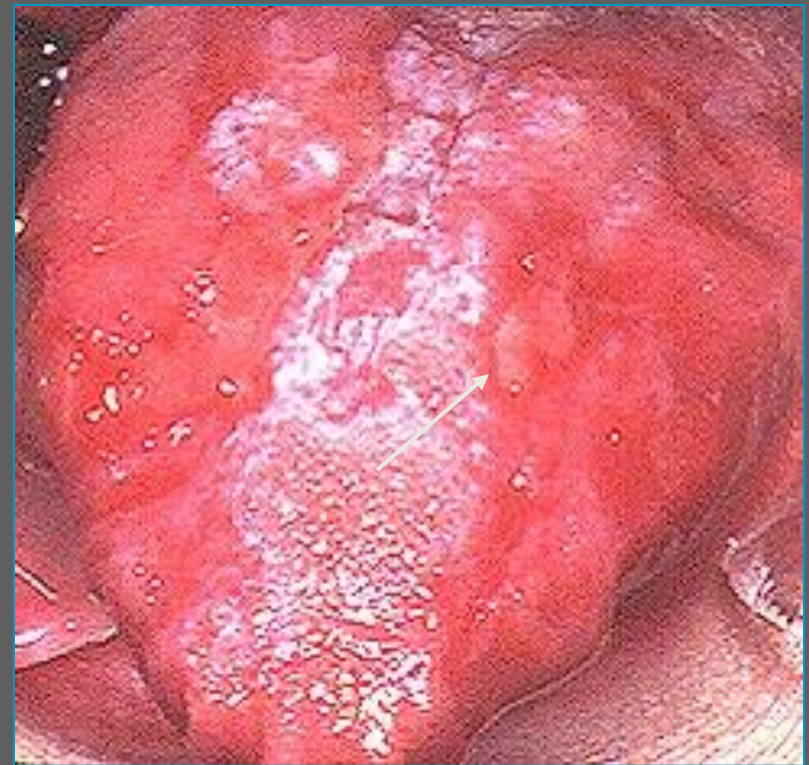
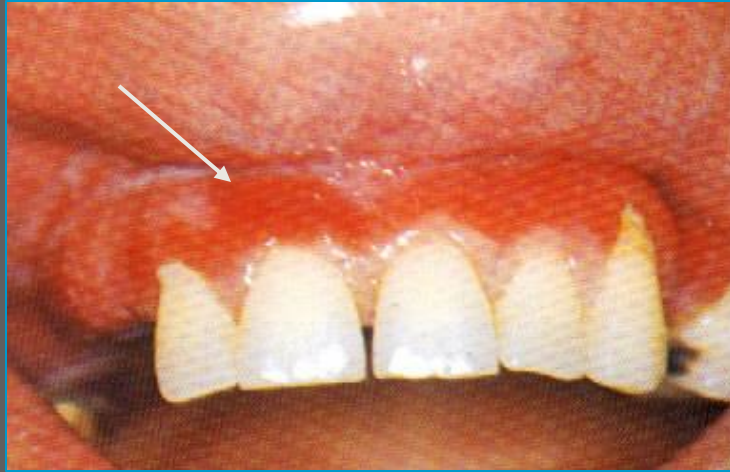
Clinical features

- Keratotic form manifests as different arrangement of white striae, viz. *reticular, linear, annular, lace-like, papular*
- Sometimes a *plaque-like* white lesions with very few striae is seen
- All forms are non-scrapable
- The pliability of mucosa is not lost
- Papillae on the tongue may not be lost
- Sometimes associated with melanosis

Reticular/ Keratotic

ORAL LICHEN PLANUS

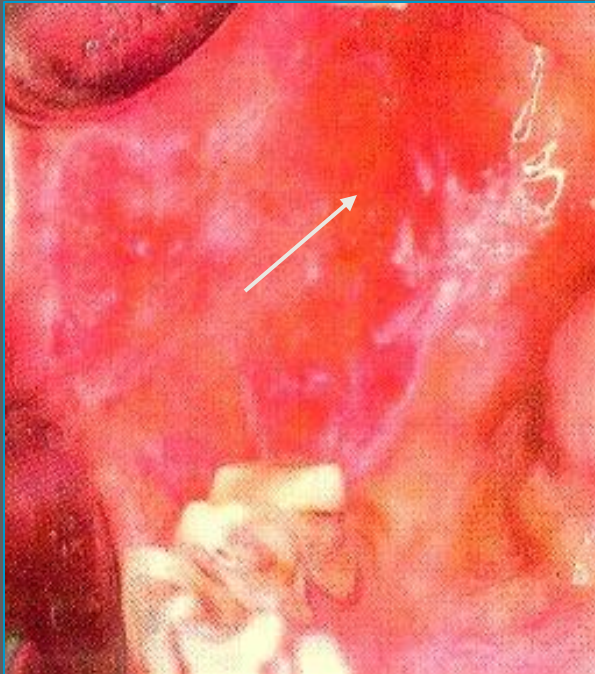
Clinical features



Atrophic/Ulcerative

ORAL LICHEN PLANUS

Clinical features



21 years later:
Malignant transformation



Atrophic/Ulcerative

ORAL LICHEN PLANUS

Clinical features



Atrophic/Ulcerative

ORAL LICHEN PLANUS

Clinical features



ORAL LICHEN PLANUS

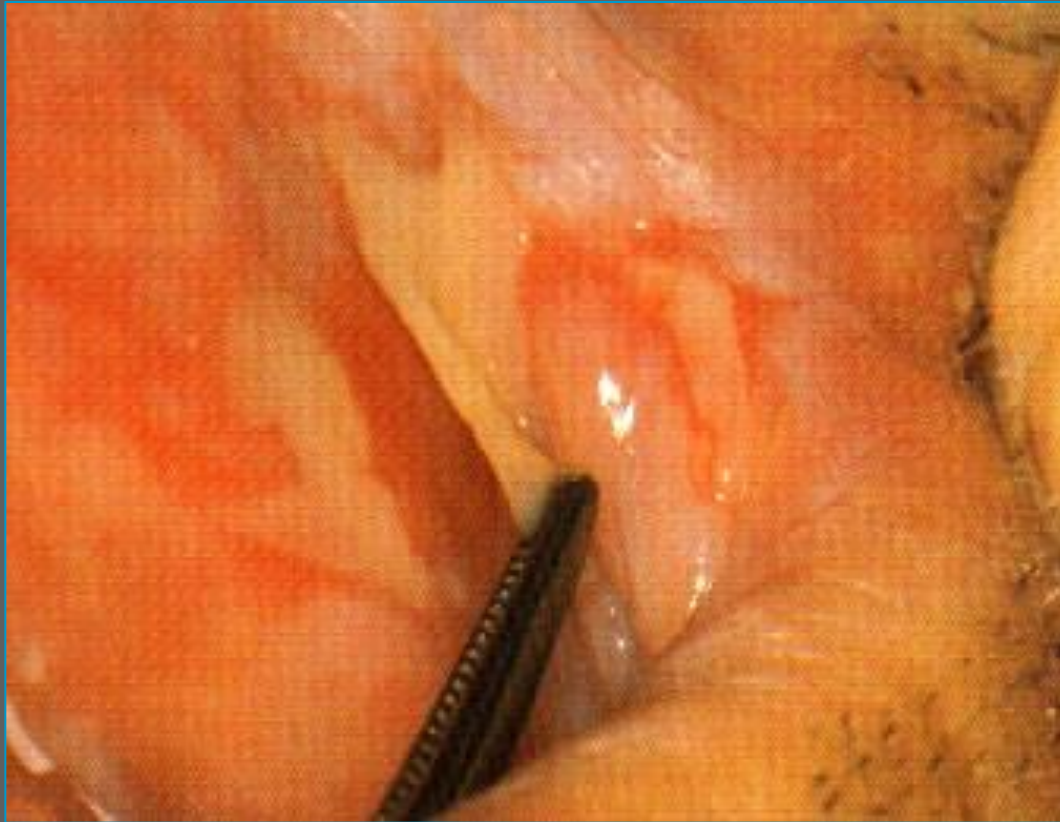
Clinical features

- Atrophic form is less common
- Atrophy may vary from erosions to deep ulcerations
- Usually associated with some hypertrophic (striae) form
- Tender to palpation and may bleed
- More prone to malignant transformation

Atrophic/Ulcerative

ORAL LICHEN PLANUS

Clinical features



Bullous

ORAL LICHEN PLANUS

Clinical features

- Least common
- Appears as a bulla surrounded by some striations
- Ruptures easily to form ulceration
- Tender to palpation and may bleed

Bullous

ORAL LICHEN PLANUS

Investigations:

1. Clinical features of reticular OLPs can be differentiated by histological examination.
2. Histological examination can diagnose atrophic OLPs.
3. Immunofluorescence can differentiate OLPs from other bullous conditions.
4. To detect *Grinspan's syndrome*: OLP, diabetes mellitus, hypertension.

DIFFERENTIAL

L

DIAGNOSIS

?

Differential diagnosis

ORAL LICHEN PLANUS

Differential diagnosis

- leukoplakia
- squamous cell carcinoma
- mucous membrane pemphigoid
- candidiasis
- lichenoid lesions - drug-induced lesions, contact mercury hypersensitivity, erythema multiforme, lupus erythematosus and graft-versus-host reaction

BIOPSY

ORAL LICHEN PLANUS

Clinical course: *unpredictable*

1. Hypertrophic forms may remain asymptomatic and unchanged for years. Spontaneous regression may occur in some patients. Rarely, hypertrophic form may change to atrophic/ulcerative form and become symptomatic.
2. Atrophic forms are always symptomatic and rarely regress spontaneously; hence, need treatment.
3. All forms may recur after regression or successful treatment.
4. Malignant transformation is rare (about 0.4%) and usually takes place in atrophic forms.

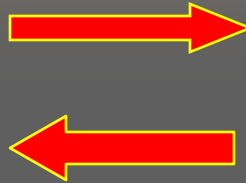
ORAL LICHEN PLANUS

Clinical course: *unpredictable*

ORAL LICHEN PLANUS

Management:

Regress



Reappear

OLP is neither curable nor preventable.

- The clinical course and behaviour is unpredictable.
 - Management objectives, therefore, are symptomatic relief, general support and an attempt to cure.
 - Asymptomatic lesions should be periodically observed for any changes.
1. Medical management
 2. Surgical management

ORAL LICHEN PLANUS

Management: *medical*

1. Hypertrophic/reticular form without symptoms:
 - Patient counseling
 - Periodic observation
2. Hypertrophic form with mild symptoms:
 - Patient counseling
 - Topical anesthetics- 5% lignocain (*Xylocain*), 0.15% benzydamine (*Tantum oral rinse*)
 - Periodic observation

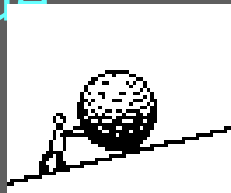
Plaque-like lesions may benefit from a course of anti-fungal therapy.

ORAL LICHEN PLANUS

Management: *medical*

3. Atrophic form with mild to moderate symptoms:

- Patient counseling
- Topical anesthetics- 5% lignocain (*Xylocain*), 0.15% benzydamine (*Tantum oral rinse*) before every meal
- Topical steroids- 0.1% triamcenolone acetonide (*Kenacort oral paste*) to be applied after every meal and at bed time
- High potency coticosteroids-0.05% fluocinonide and 0.05% clobetasol
- Anti-anxiety medication- 5 mg diazepam (*Valium, Calmpose*) at bed time for 1-2 weeks
- Periodic observation



ORAL LICHEN PLANUS

Management: *medical*

4. Atrophic form with severe symptoms and bullous form:
 - Basic management is similar to atrophic form with mild to moderate symptoms
 - Additionally, systemic steroids may be prescribed-
 - Prednisolone (*Wysolone*), 20 mg tablet, twice a day for 5 days.
 - Betamethasone (*Betnesol*), 0.5 mg tablet thrice daily for 5 days.

- Intra-lesional injection of steroid -betamethasone, 4 mg/ml solution(*Betnesol*) may heal stubborn lesions.

TAPER

ORAL LICHEN PLANUS

Management: *medical*

5. Cyclosporin, chloroquine, retinoids and UV-light have shown resolution of lesions in some patients. However, therapy with these is still under trials and should not be prescribed routinely.

ORAL LICHEN PLANUS

Management: surgical

Surgical removal (scalpel, cryoprobe, laser) may help in stubborn lesions. However, recurrence may yet occur.

Prognosis: is unpredictable, particularly in atrophic forms. Lesions may resolve completely, only to recur later. Therefore, management is customized to patient's needs.

LICHENOID REACTION

- Lichenoid reactions are similar in clinical presentation and behaviour to oral lichen planus.

Lichenoid reactions are differentiated from lichen planus on the basis of

- (1) their association with the administration of a drug, contact with a metal, the use of a food flavoring, or systemic disease and
- (2) their resolution when the drug or other factor was eliminated or when the disease was treated

Management is similar to that of oral lichen planus.