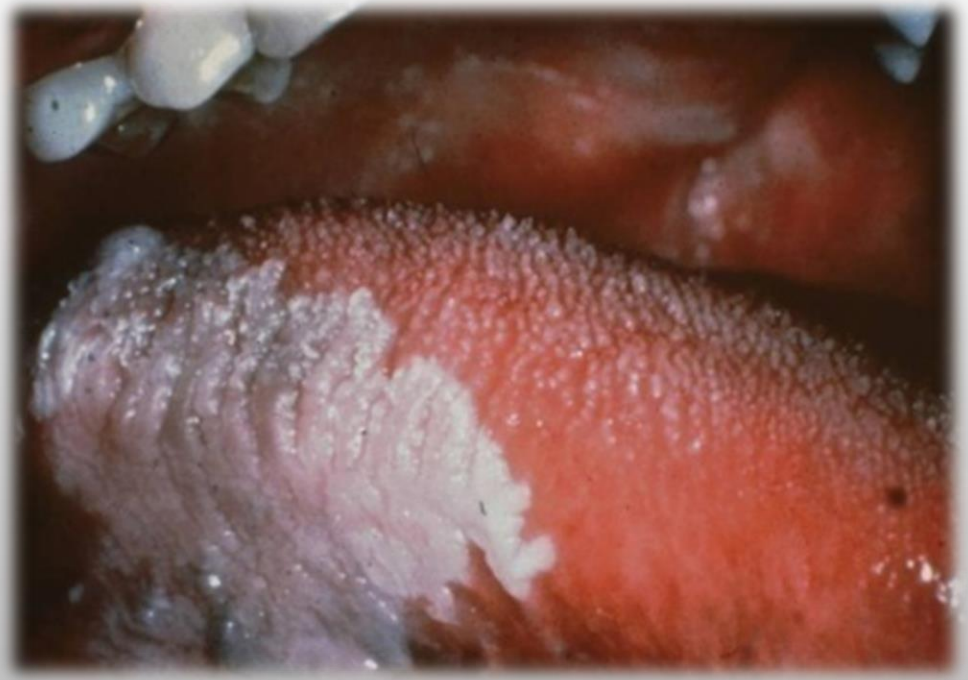
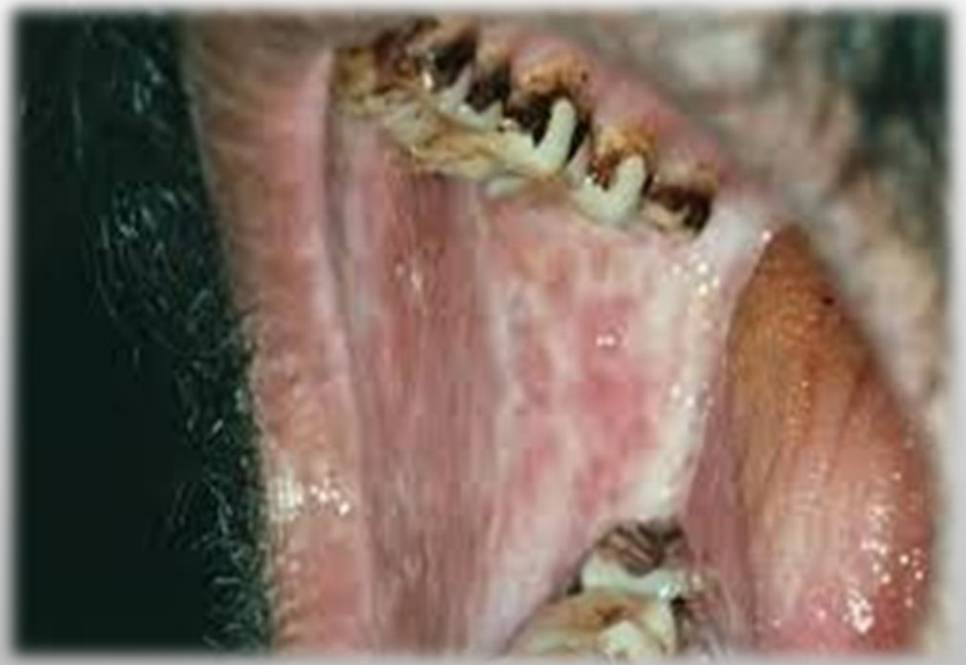
ORAL POTENTIAL MALIGNANT DISORDER





Presentation by :
G. Antony Climacs
CRRI

CONTENTS :

INTRODUCTION:

- Several attempts to produce internationally accepted terminologies and definitions of ‘oral precancer’ have appeared in the literature.
- World Health Organizations (WHO) in 1972 subdivided ‘precancer’ into ‘lesions’ and ‘conditions’ with their definitions.
- Recent working group of WHO is not in favor of such subdivision and recommended the use of the term ‘oral potentially malignant disorder (OPMD)’.

DEFINITION:

"IT IS A GROUP OF DISORDERS OF VARYING ETIOLOGIES, USUALLY TOBACCO CHARACTERIZED BY MUTAGEN ASSOCIATED, SPONTANEOUS OR HEREDITARY ALTERATIONS OR MUTATIONS IN THE GENETIC MATERIAL OF ORAL EPITHELIAL CELLS WITH OR WITHOUT CLINICAL AND HISTOMORPHOLOGICAL ALTERATIONS THAT MAY LEAD TO ORAL SQUAMOUS CELL CARCINOMA TRANSFORMATION".

(REF -ORAL POTENTIALLY MALIGNANT DISORDERS: PRECISING THE DEFINITION) - ORAL ONCOLOGY JOURNAL (2012)

NEW CLASSIFICATION FOR ORAL POTENTIALLY MALIGNANT DISORDERS

SARODE, SARODE, KARMARKAR, TUPKARI(Ref - Oral Oncology xxx, 2011)

CLASSIFIED OPMD INTO 4 GROUPS:

Group I:

Morphologically altered tissue in which external factor is responsible for the etiology and malignant transformation.

Group II:

Morphologically altered tissue in which chronic inflammation is responsible for malignant transformation (chronic inflammation mediated carcinogenesis).

Group III:

Inherited disorders that do not necessarily alter the clinical appearance of local tissue but are associated with a greater than normal risk of PMD or malignant transformation.

Group IV:

No clinically evident lesion but oral cavity is susceptible to Oral squamous cell carcinoma.

Group I: Morphologically altered tissue in which external factor is responsible for the etiology and malignant transformation.

1. Habit related

a. Tobacco associated lesions

- Leukoplakia
- Tobacco pouch keratosis
- Stomatitis palatine nicotini

b. Betel nut associated

- Oral submucous fibrosis

c. Sanguinaria-associated keratosis

2. Non-habit related

- Actinic cheilosis

- Chronic candidiasis

Certain strains of Candida have been shown to produce nitrosamines a chemical carcinogen (external factor) and hence, candidiasis is included under Group I.

Group II: Morphologically altered tissue in which chronic inflammation is responsible for malignant transformation (chronic inflammation mediated carcinogenesis).

Group II a. Chronic inflammation caused by internal derangement.

- 1. Lichen planus
- 2. Discoid lupus erythematosus

Group II b: Chronic inflammation caused by external factors.

1. Chronic mucosal trauma
2. Lichenoid reactions
3. Poor oral hygiene
4. Chronic infections
   - Chronic bacterial infections
   - Chronic viral infections
   - Chronic fungal infections
5. Other pathologies associated with prolonged untreated chronic inflammation of the oral cavity.

- **Group III**: Inherited disorders that do not necessarily alter the clinical appearance of local tissue but are associated with a greater than normal risk of PMD or malignant transformation.

1. Inherited cancer syndromes
   - Xeroderma pigmentosum
   - Ataxia telangiectasia
   - Fanconi's anemia
   - Li Fraumeni syndrome
2. Diskeratosis congenita
3. Epidermolysis bullosa
4. White sponge nevus
5. Darier's disease
6. Hailey–Hailey disease

Group IV: No clinically evident lesion but oral cavity is susceptible to Oral squamous cell carcinoma.

1. Immunosupression

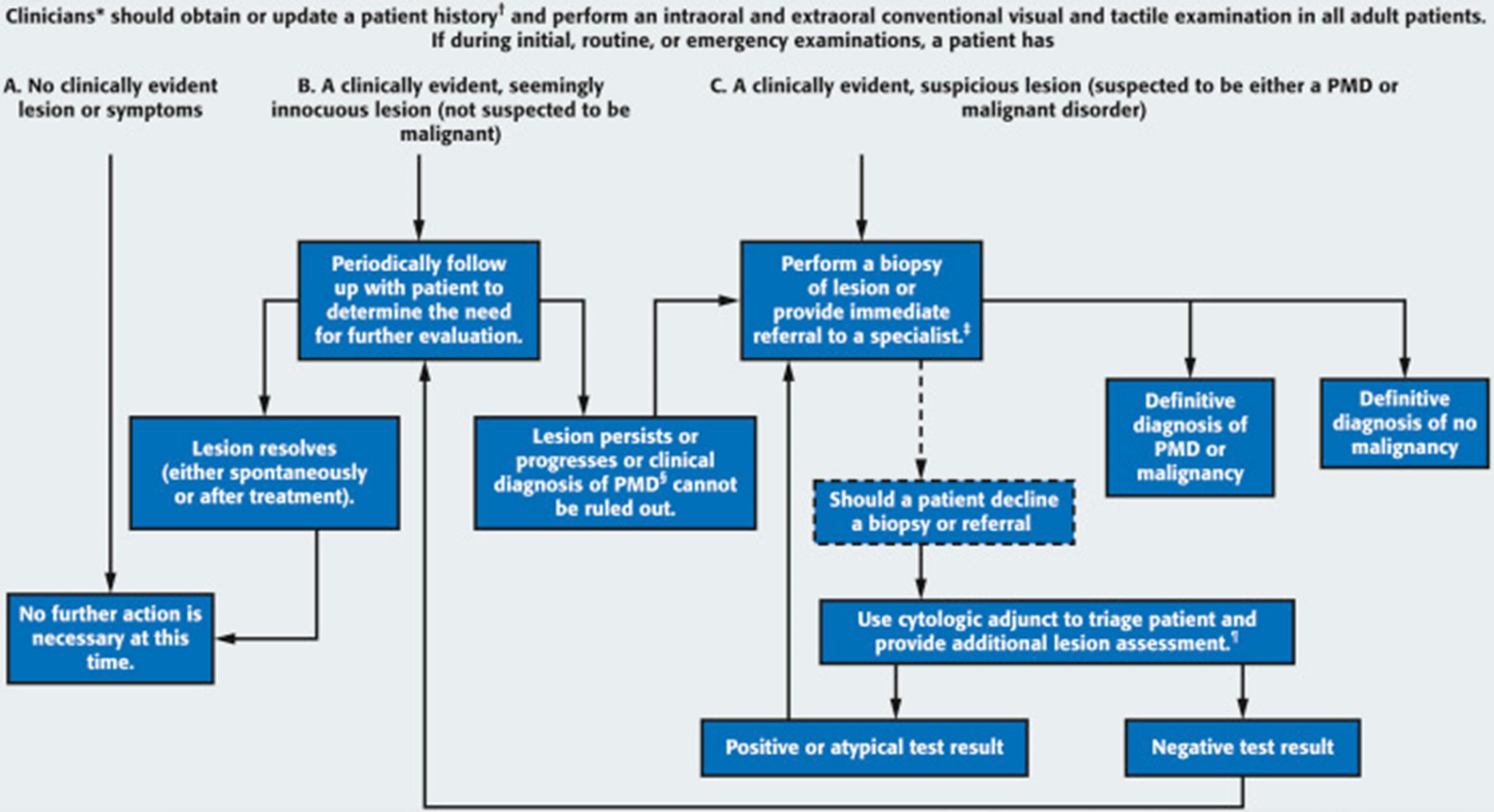
- AIDS
- Immunosupression therapy (for malignancy or organ transplant)

2. Alcohol consumption and abuse

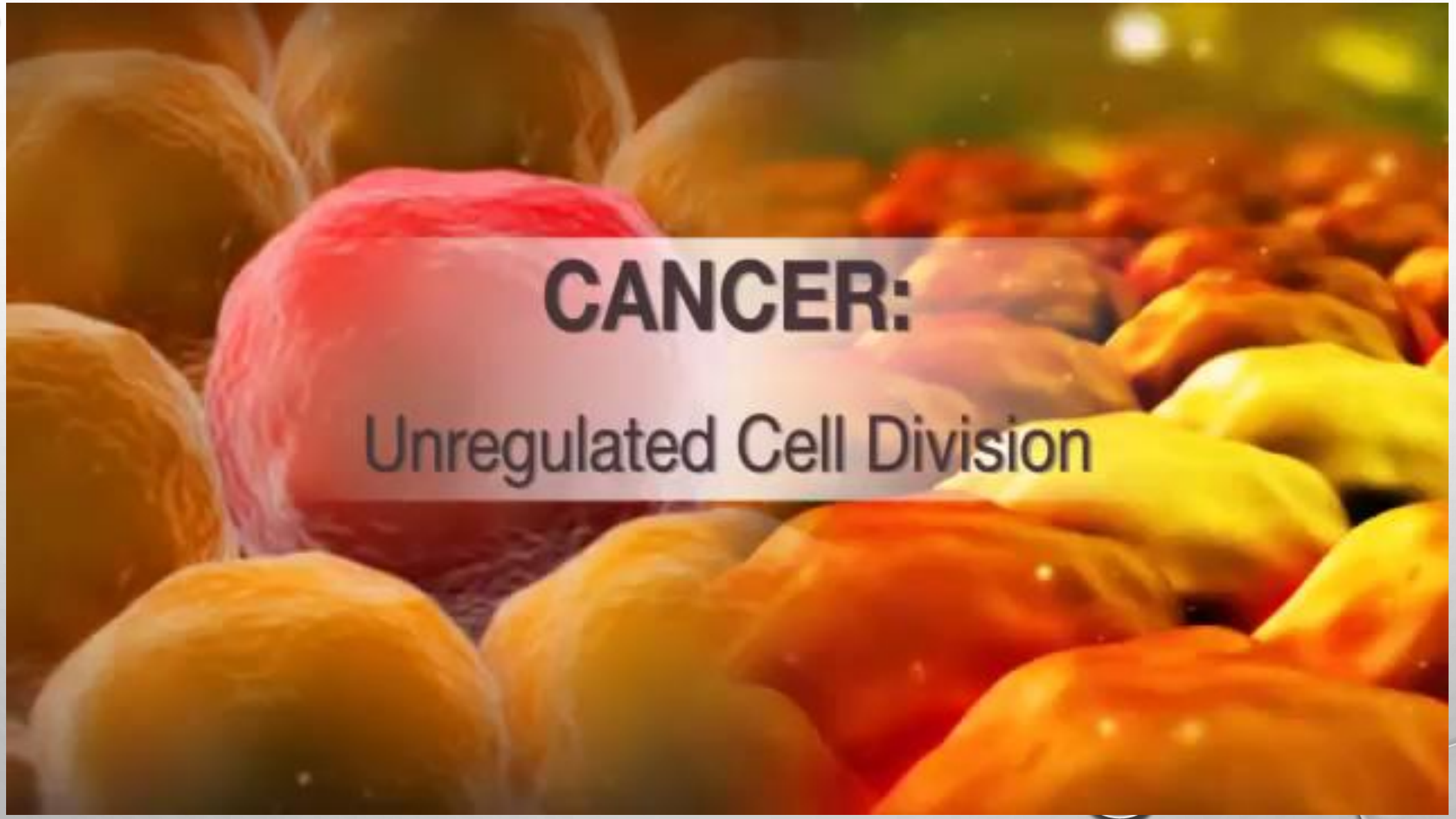
3. Nutritional deficiency

- Sideropenic dysphagia
- Deficiency of micronutrients

CLINICAL PATHWAY FOR THE EVALUATION OF OPMD



TRANSFORMTION OF NORMAL CELLS TO MALIGNANT CELLS



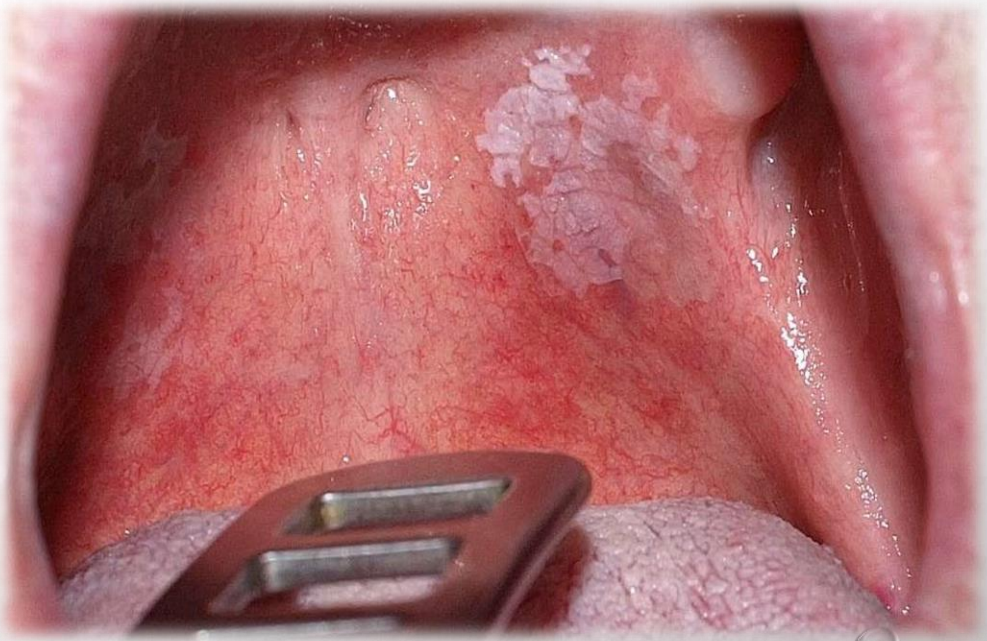
LEUKOPLAKIA

LEUKOPLAKIA

DEFINITION:

"A white patch or plaque that cannot be characterised clinically or pathologically by any other disease and which is not associated with any physical or chemical agent except the use of tobacco". (modified 1984)

"A predominantly white lesion of the oral mucosa that cannot be characterised as any other definable lesion".(Axell T,1996)



LEUKOPLAKIA

EPIDEMIOLOGY:

Prevalence : 2.6% Ernakulam district (India) : 17/1000
Sex : Men
More common Age : 30-50 yrs
Common Site : Buccal mucosa common(habit related) floor of the mouth least affected.

LEUKOPLAKIA

ETIOLOGY:

Local factors :

1. Tobacco
2. Alcohol
3. Chronic irritation
4. Candidiasis
5. Electromagnetic reactions
6. UV radiation

Systemic factors:

1.Hormones

a.Endocrine dysfunction

b. Male and female hormone deficiency

2. Infections

a. HSV

b. HPV

3. Drugs

a. Antimetabolites

b. Systemic alcohol

c. Anticholenergics

4. Vitamin deficiency

5.Conditions :

a.Syphylis

b.Sideropenic dysphagia

c.Salivary gland diseases

LEUKOPLAKIA

PATHOPHYSIOLOGY:

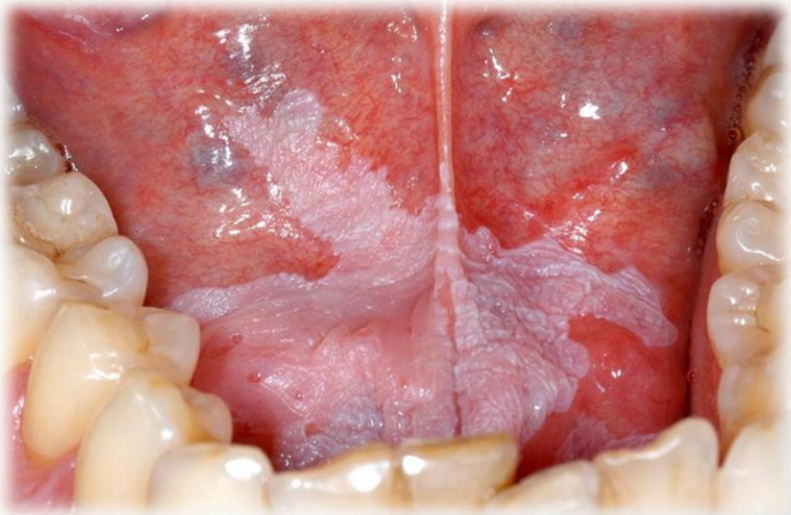
Tumor suppressor genes are genes involved in the regulation of normal cell turnover and apoptosis (programmed cell death). One of the most studied tumor suppressor genes is p53, which is found on the short arm of chromosome. Mutation of p53 can disrupt its regulatory function and lead to uncontrolled cell growth.

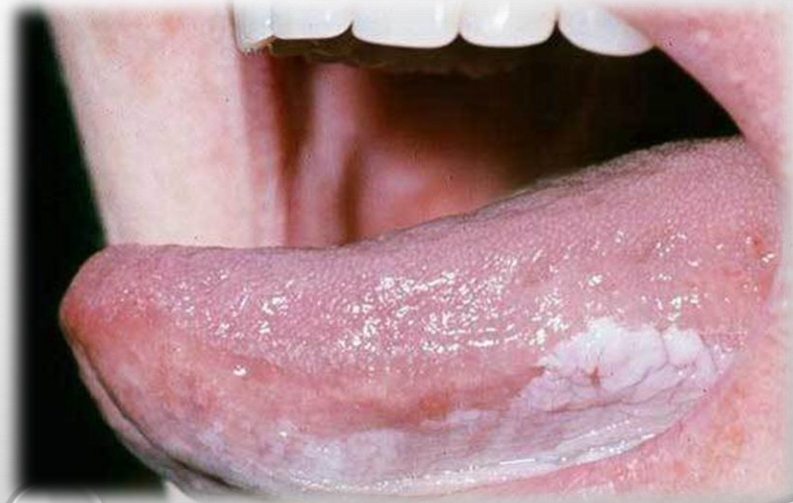
Mutations of p53 have been demonstrated in the cells from areas of some leukoplakias, especially those with dysplasia and in individuals who smoke and drink heavily.

LEUKOPLAKIA

CLINICAL FEATUERS:

Age: 30-50 yrs
Sex: M > F
Site: Buccal/Vestibular mucosa Borders of the tongue Floor of the mouth etc.
Symptoms: Mostly asymptomatic. Discovered on routine examination. Sometimes patient may aware of a white lesion/ roughness. Speckle variety may cause burning sensation.





LEUKOPLAKIA

CLINICAL CLASSIFICATION :

(WHO 1980)

Homogeneous:

1. Smooth
2. Furrowed
3. Ulcerated

Nonhomogeneous:

1. Nodulospeckled
2. Verrucous

STAGING OF LEUKOPLAKIA

PROVISIONAL(CLINICAL) DIAGNOSIS

L: Extent of leukoplakia

L0, no evidence of lesion
L1, <= 2cm
L2, 2-4cm
L3, >= 4cm
Lx, not specified

S: Site of leukoplakia

S1, all sites excluding FOM, tongue
S2, FOM and/or tongue
Sx, not specified

C: Clinical aspect

C1, homogenous
C2, nonhomogenous
C3, not specified X

DEFINITIVE(HISTOPATHOLOGIC) DIAGNOSIS

P: Histopathologic features

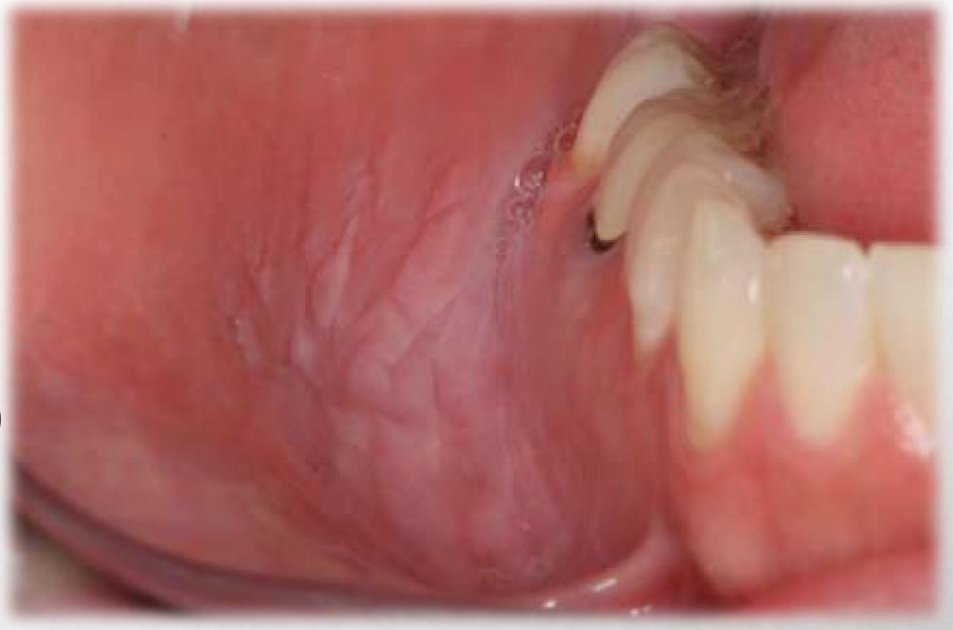
P1, no dysplasia
P2, mild dysplasia
P3, moderate dysplasia
P4, severe dysplasia
Px, not specified

STAGING

1: any L, S1, C1, P1 or P2
2: any L, S1 or S2, C2, P1 or P2
3: any L, S2, C2, P1 or P2
4: any L, any S, any C, P3 or P4

PRE-LEUKOPLAKIA

- ✓Low grade or very mild reaction of the oral mucosa
- ✓Precursor of leukoplakia
- ✓Prevalence – 0.5-4.1%
- ✓Low malignant potential
- ✓Appear gray or greyish white (never completely white)
- ✓Flat lesion with slightly lobular pattern with indistinct borders blending into the adjacent normal mucosa.
- ✓Partially scrapable.



HOMOGENOUS LEUKOPLAKIA

✓White plaques, have no red component but have a fine white grainy texture/more mottled rough appearance (cracked mud appearance).

✓Site mostly the buccal mucosa.

CLINICAL FEATURES:

✓At the site that comes in contact with tobacco.

✓White,brownish white plaque with more or less uniform appearance.

✓Cracked mud or corrugated appearance /like a beach at ebbing tide.

✓Size- from 10mm to extensive lesions.

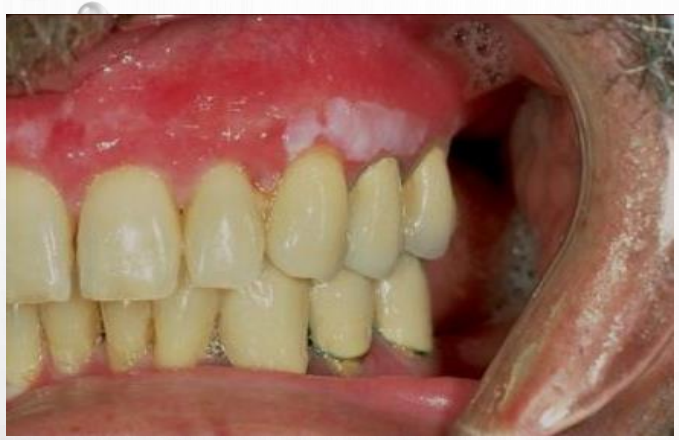
✓Distinct borders.

✓Non-scrapable.

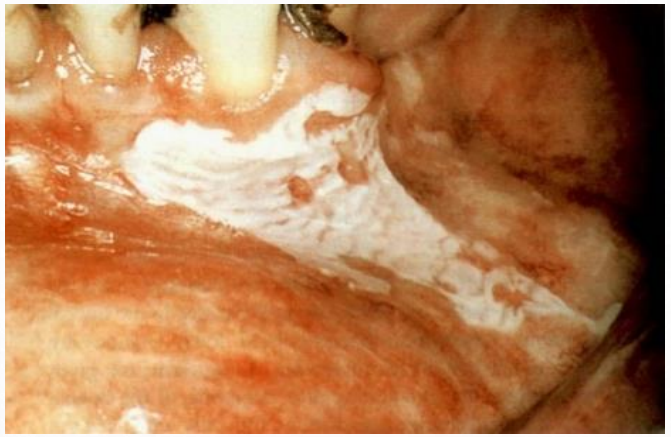
✓Loss of elasticity/pliability of affected mucosa.

✓Loss of papillae, if on tongue dorsum.

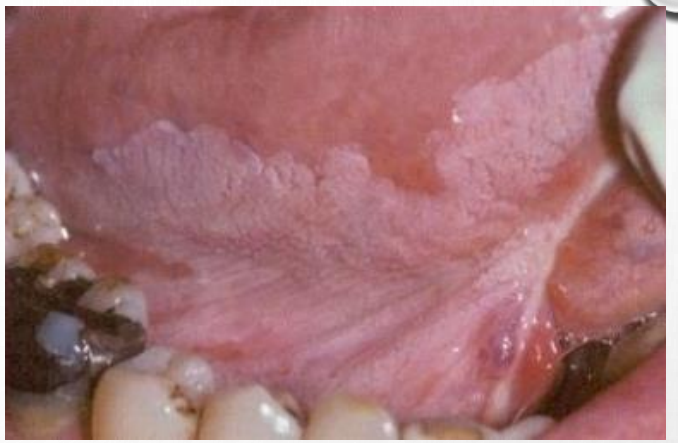
HOMOGENOUS LEUKOPLAKIA



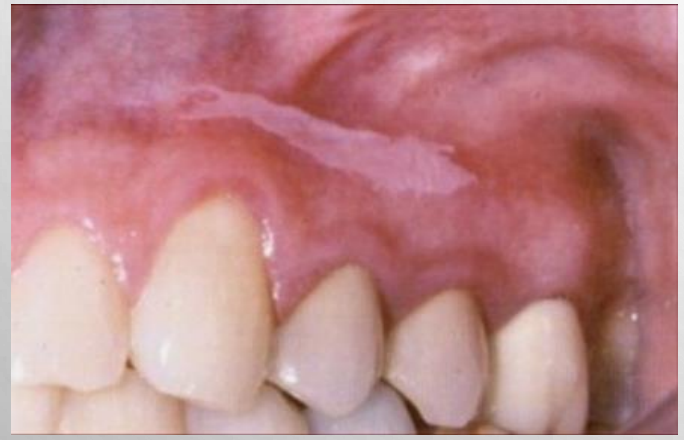
PATCH ON GINGIVA



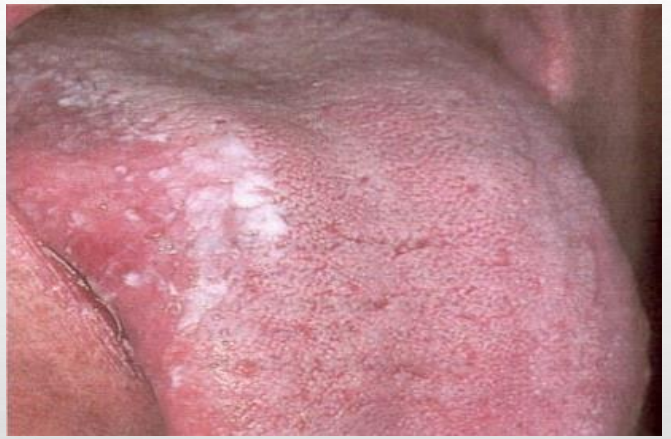
PATCH ON LABIAL MUCOSA



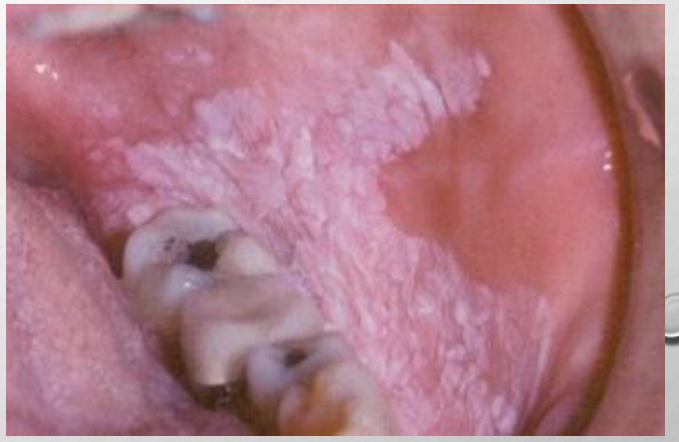
PATCH ON FLOOR OF THE MOUTH



PATCH ON GINGIVA



PATCH ON TONGUE



PATCH ON LEFT BUCCAL MUCOSA

NON-HOMOGENOUS LEUKOPLAKIA

✓Lesions consist of white flecks or fine nodules on an atrophic erythematous base.

✓Combination of transtion between leukoplakia and erythroplakia.

✓Small papillary like projections.

CLINICAL FEATURES:

✓. Site that comes in contact with tobacco.

✓Appears as a mixed red and white lesion ie small multiple keratotic (white) nodules scattered over an atrophic (red) patch of mucosa.

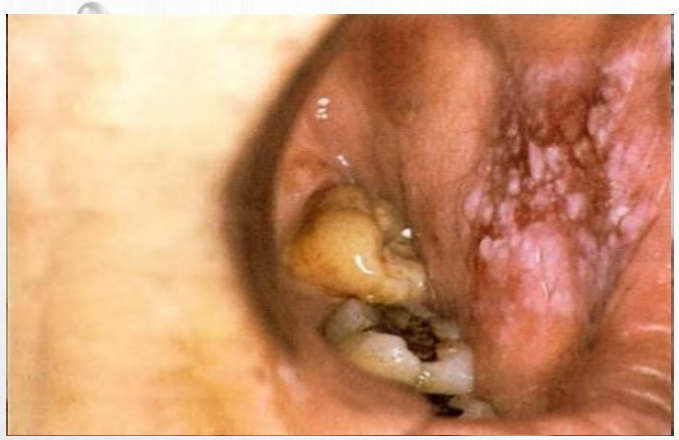
✓Size: from about 10mm to extensive lesions.

✓Relatively less distinct borders.

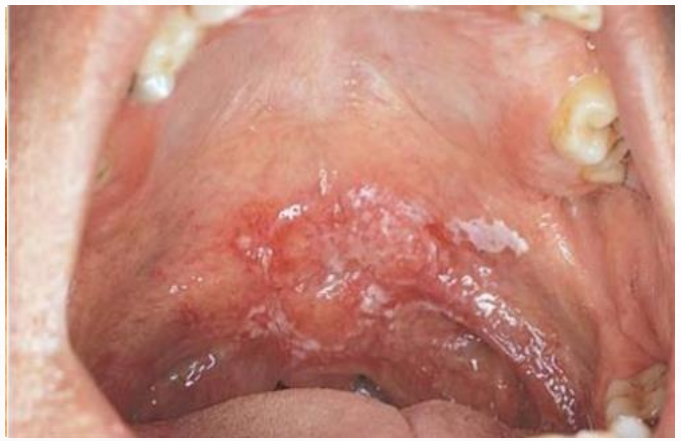
✓Non-scrapable.

✓Higher rate of malignant transformation.

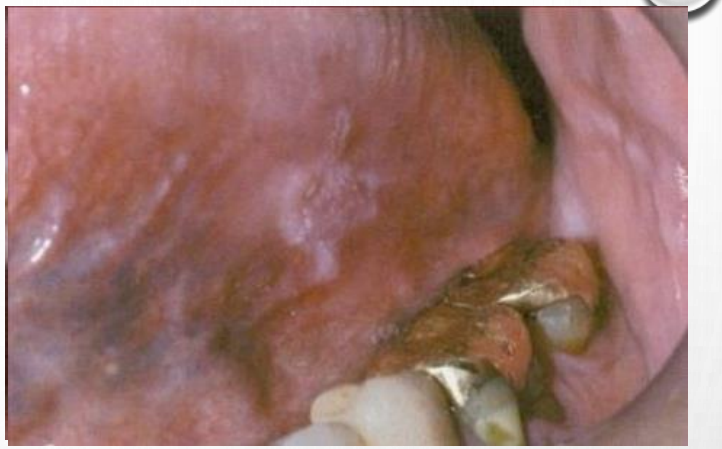
NON-HOMOGENOUS LEUKOPLAKIA



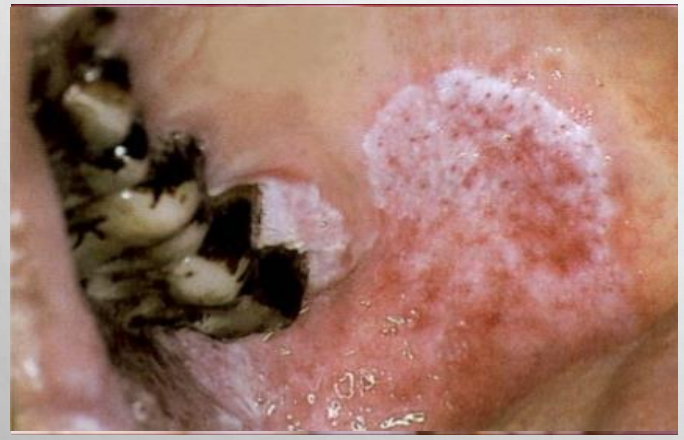
SPECKLED LEUKOPLAKIA



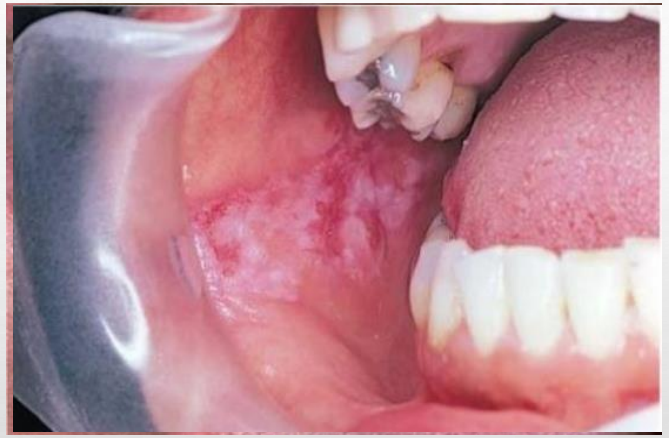
ERYTHROLEUKOPLAKIA



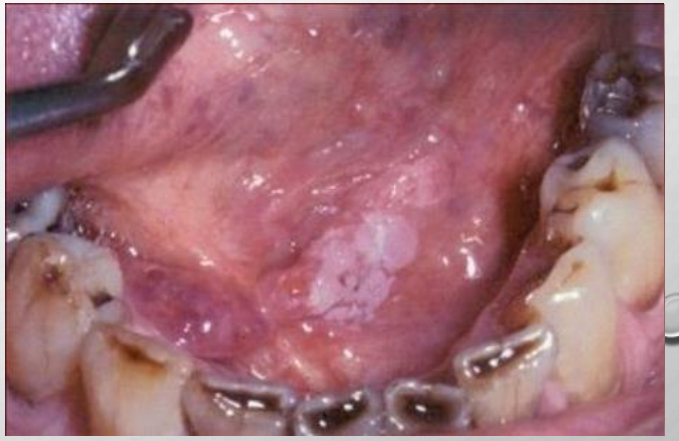
GRANULAR/ ROUGH LEUKOPLAKIA



SPECKLED LEUKOPLAKIA



ERYTHROLEUKOPLAKIA



GRANULAR/ ROUGH LEUKOPLAKIA

NON-HOMOGENOUS LEUKOPLAKIA

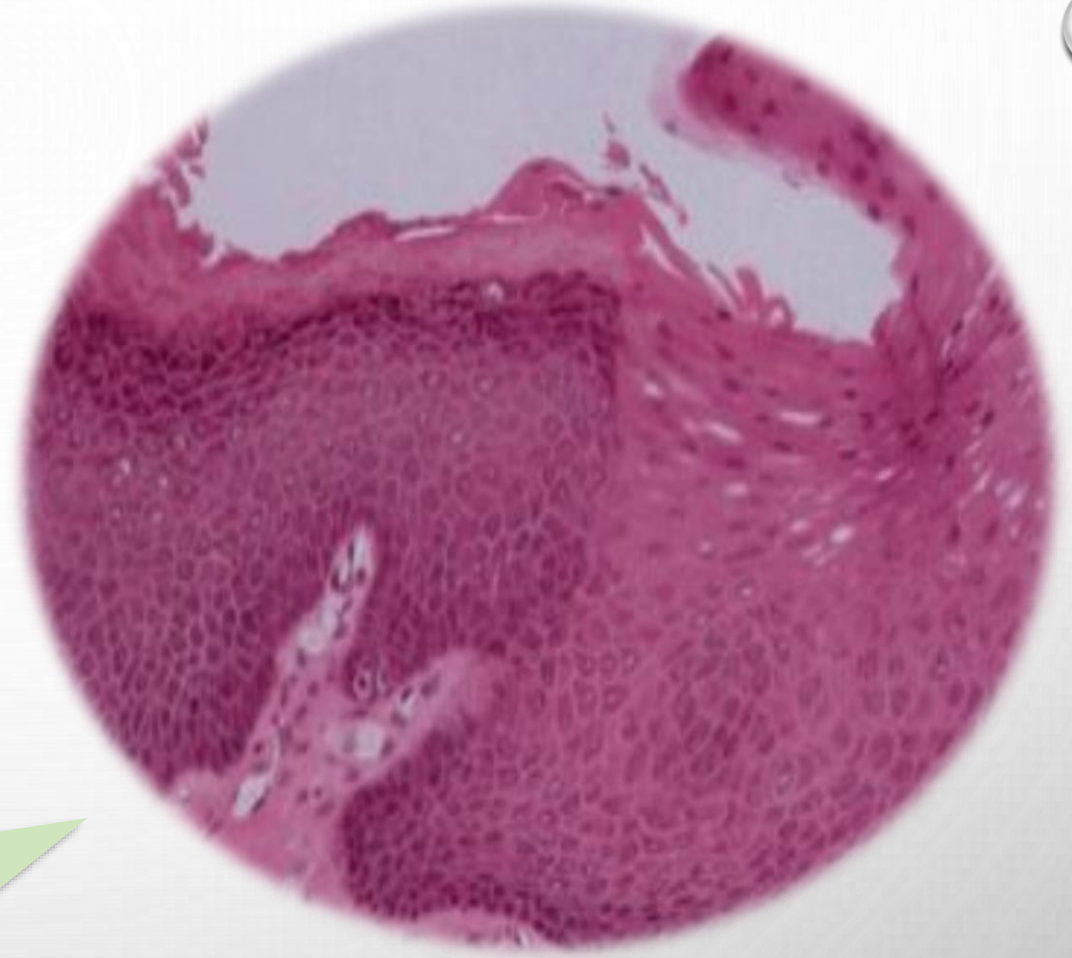
HISTOPATHOLOGY:

EPITHELIUM:

- ✓ Hyperkeratosis
- ✓Acanthosis
- ✓Epithelial dysplasia

CONNECTIVE TISSUE:

- ✓Chronic inflammatory cells



Hyperkeratosis: Ortho and Para variants

Microscopic Diagnoses at Initial Presentation Regezi, 4th Ed.

Hyperkeratosis - 80%
Dysplasia - 12%
In situ carcinoma - 3%
Squamous cell carcinoma - 5%

CLASSIFICATION OF EPITHELIAL DYSPLASIA

Mild:

✓Alterations limited to the basal and parabasal layers.
✓Changes involve only the basal third of the epithelium Moderate.

Moderate:

✓Alterations extending from the basal layer to the midportion of the spinous layer.
✓Changes involve up to the basal twothirds of the epithelium.

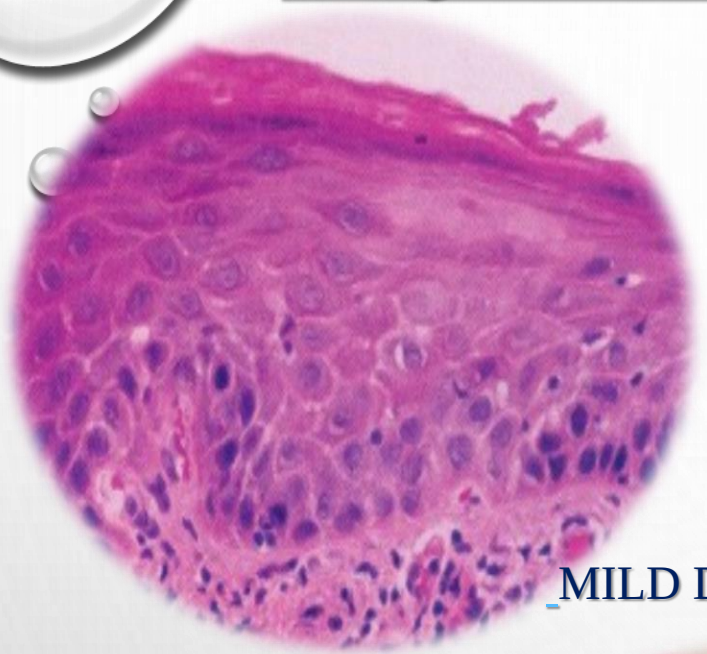
Severe:

✓Alterations from the basal layer to a level above the midpoint of the epithelium.
✓Changes involve more than the basal two-thirds of the epithelium.

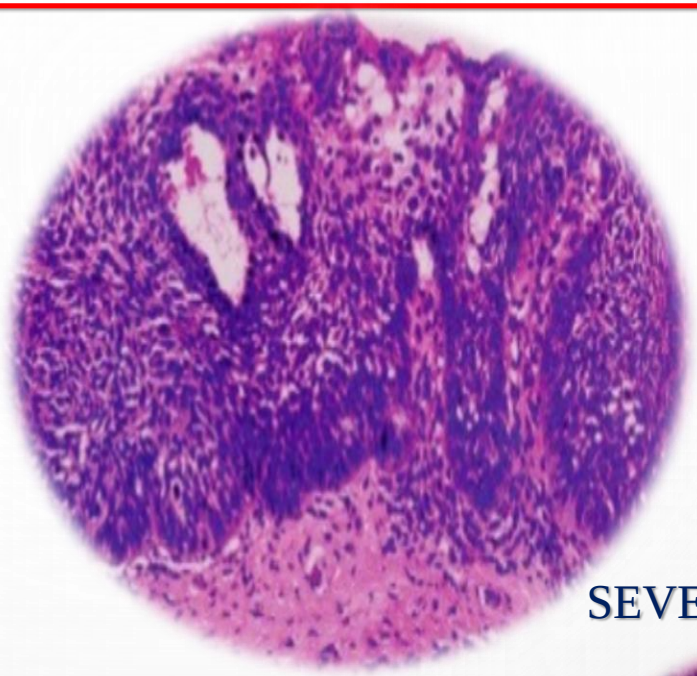
Carcinoma in situ:

✓Alterations involve the entire thickness of the epithelium – NO INVASION.
✓Changes involve the full thickness of the epithelium; however, the basement membrane is intact.

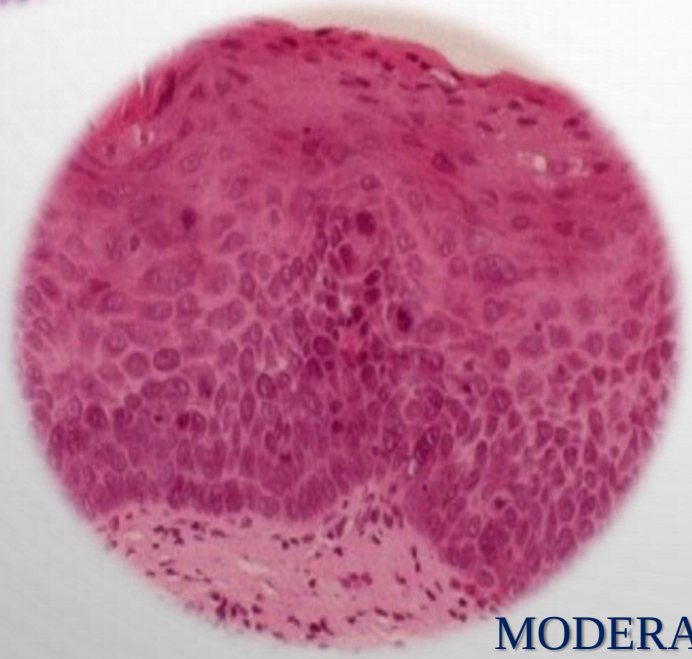
CLASSIFICATION OF EPITHELIAL DYSPLASIA



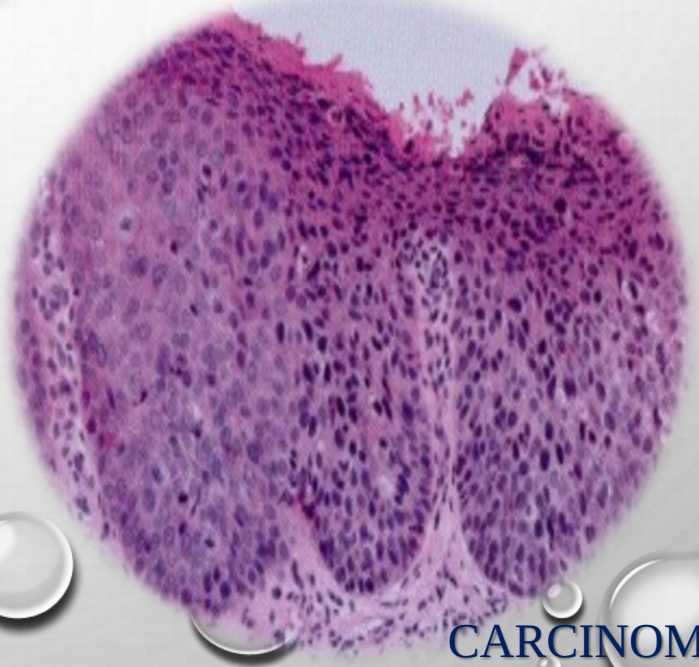
MILD DYSPLASIA



SEVERE DYSPLASIA

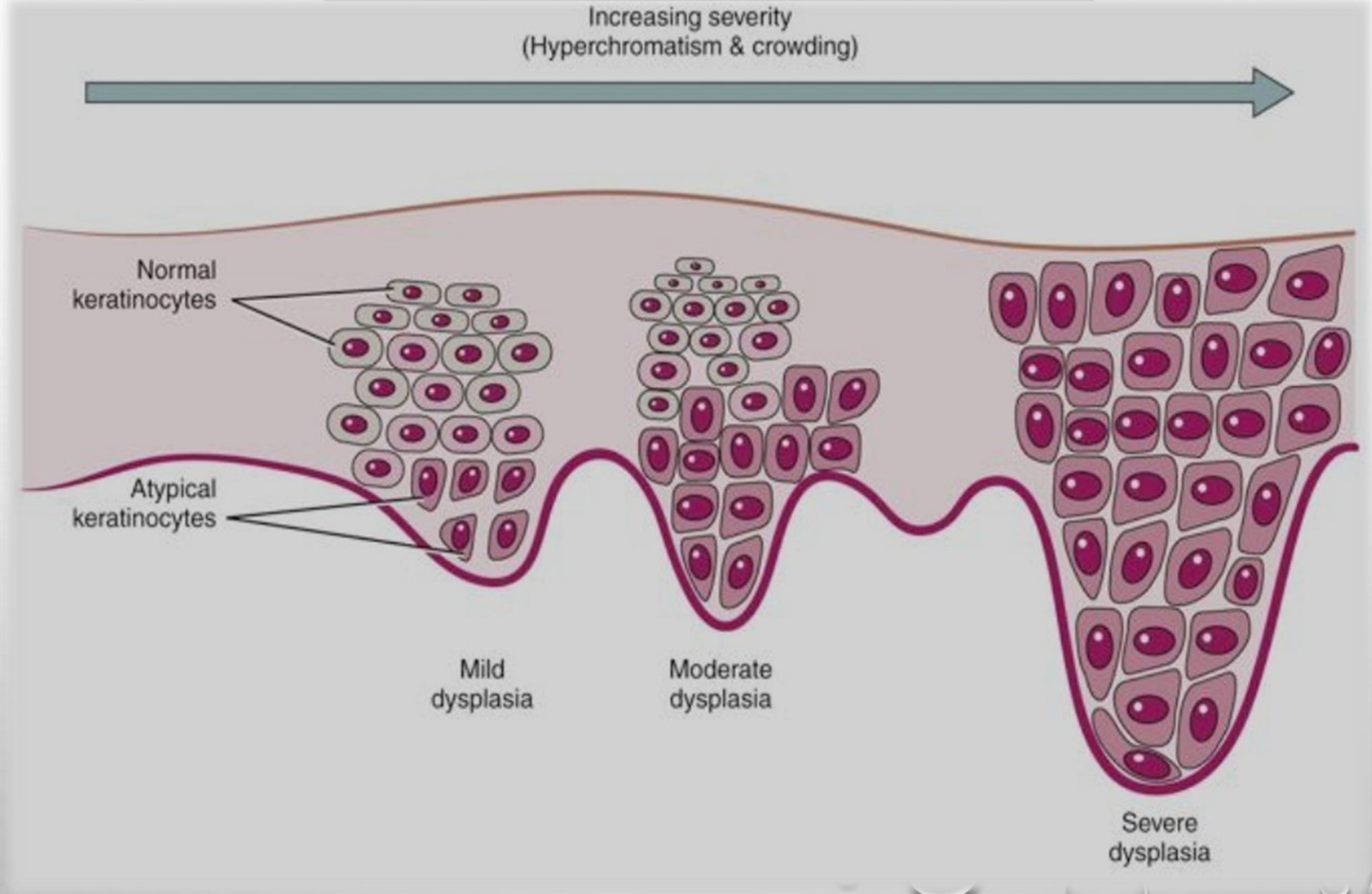


MODERATE DYSPLASIA

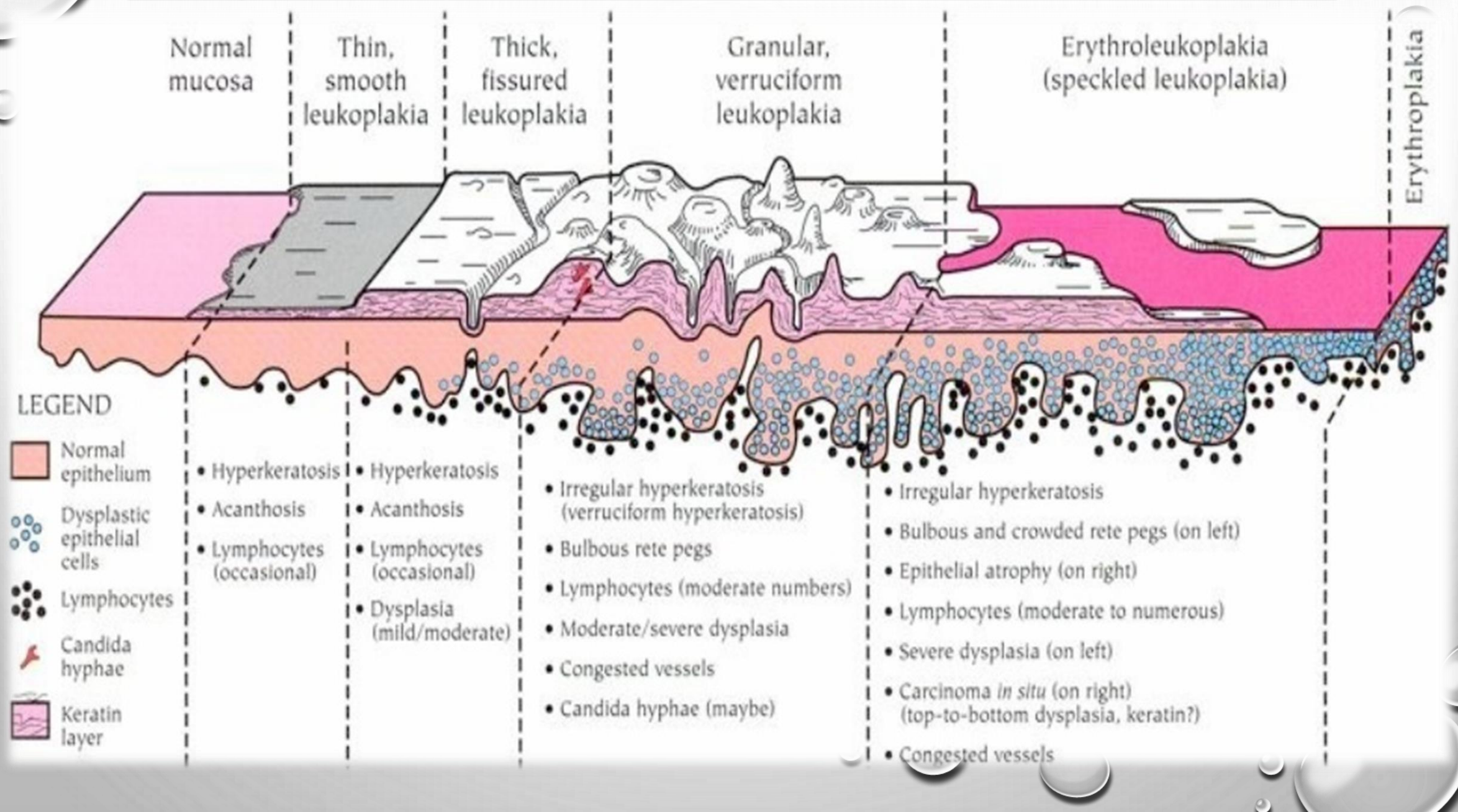


CARCINOMA IN- SITU

SEVERITY OF DYSPLASIA



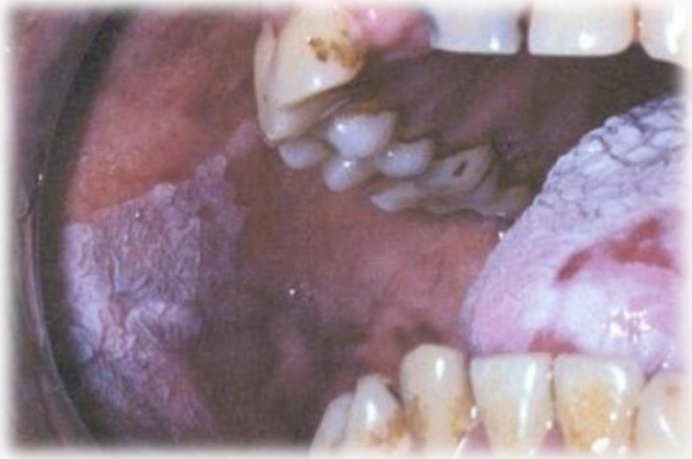
THE PHASES OF LEUKOPLAKIA & DYSPLASIA

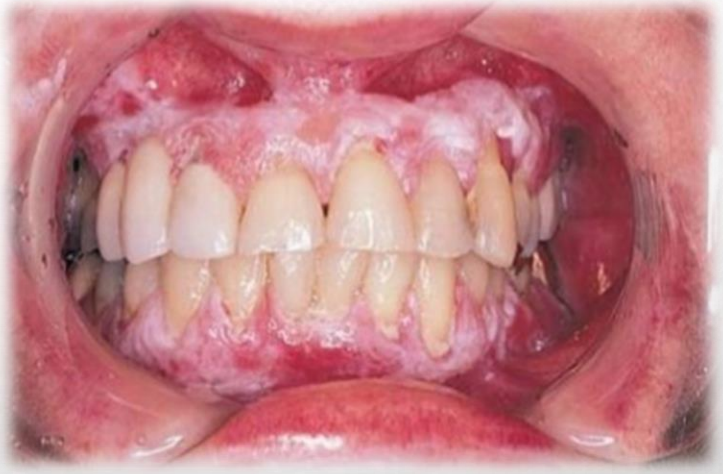


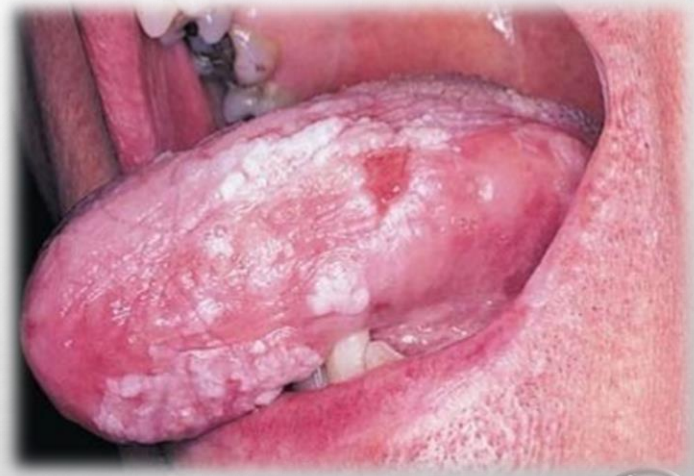
PROLIFERATIVE VERRUCOUS LEUKOPLAKIA (PVL)

PROLIFERATIVE VERRUCOUS LEUKOPLAKIA (PVL)

- ✓A special high-risk form of leukoplakia
- ✓Multiple keratotic plaques with roughened surface projections.
- ✓Plaques tend to slowly spread and involve additional oral mucosal sites.
- ✓Strong female predilection.
- ✓Variable microscopic appearance – Hyperkeratosis to dysplasia to SCC.

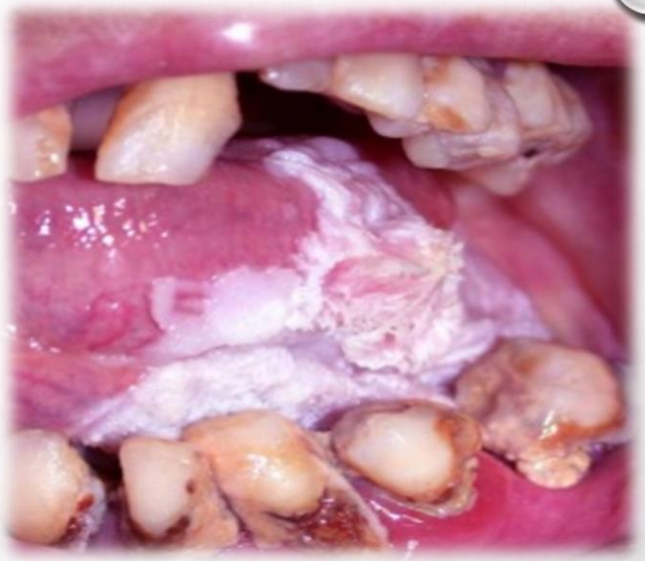






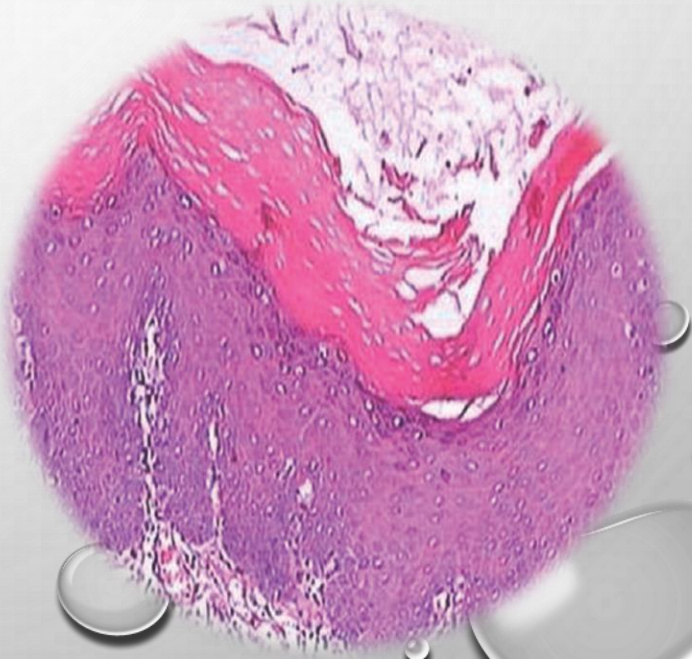
PROLIFERATIVE VERRUCOUS LEUKOPLAKIA

CLINICAL FEATUERS:



✓White lesion with raised corrugated surface.
✓White component is thicker than red & protrudes over surface mucosa.
✓The surface exhibits multiple papillary projections which are heavily keratinized 60 – 80 years.

HISTOLOGICAL FEATUERS:



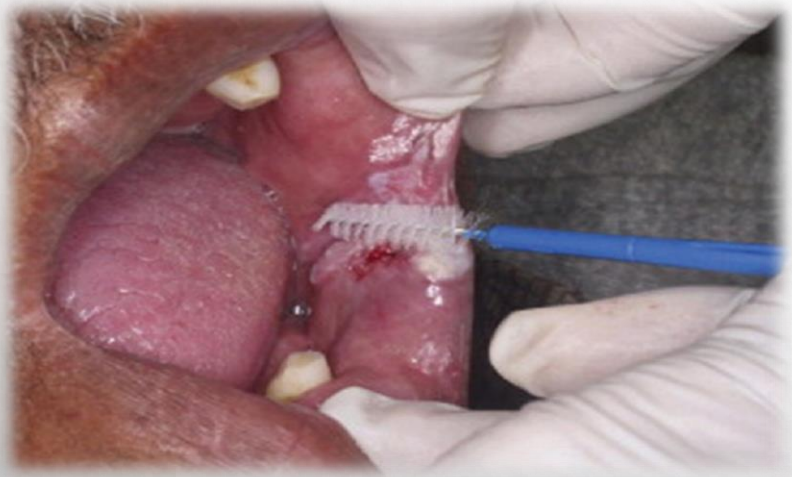
✓Irregular hyperkeratosis- verruciform hyperkeratosis
✓Bulbous rete pegs
✓Lymphocytes
✓Moderate/Severe dysplasia
✓Congested vessels

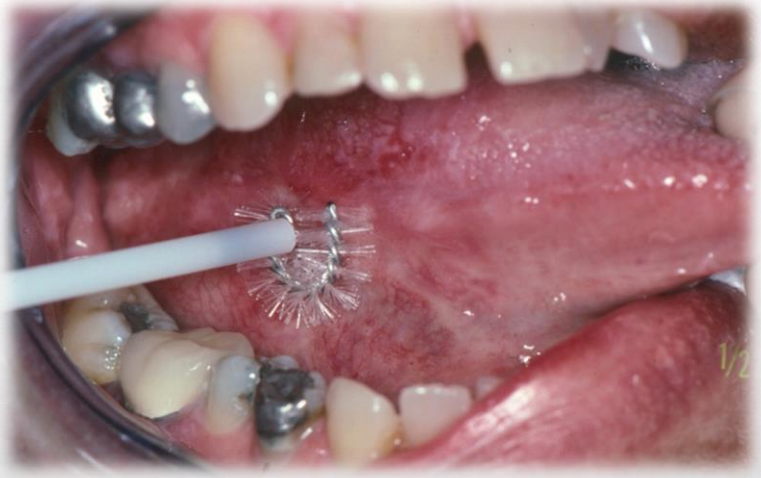
MALIGNANT POTENTIAL OF LEUKOPLAKIA & PVL

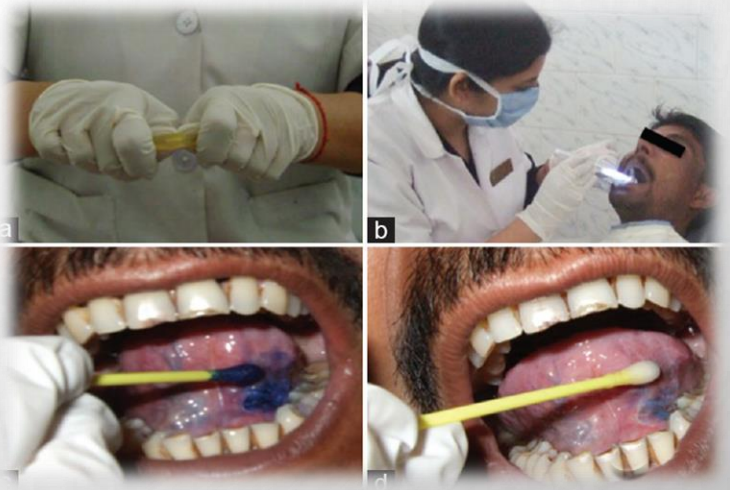
- ✓It is development of oral cancer from pre-existing leukoplakia.
- ✓Occurs in 0.3 to10% of cases.
- ✓When associated with habits shows higher rate of transformation as compared to others.
- ✓In buccal mucosa and Commisures region 108% malignant transformation occurs.
- ✓In lip and tongue 16% to 38% malignant transformation occurs.
- ✓Nodular leukoplakia has got higher rate of malignant transformation.
- ✓Idiopathic leukoplakia and Candida associated leukoplakia also come under high group.
- ✓PVL has a malignant transformation rate of 61.0% in an average follow-up period of 7.4 years (15)

INVESTIGATIONS

- ✓Exfoliative cytology
- ✓Brush (incisional or excisional biopsy)
- ✓Toluidine blue vital staining to select the biopsy site.

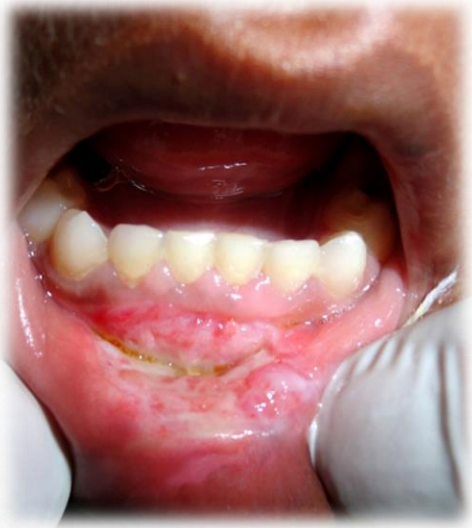


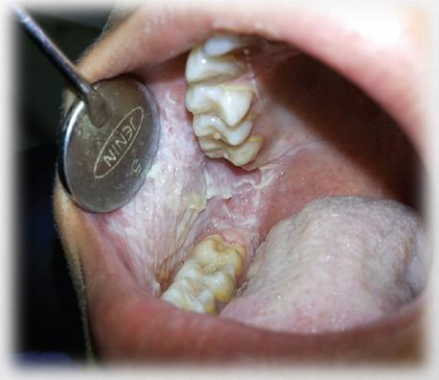


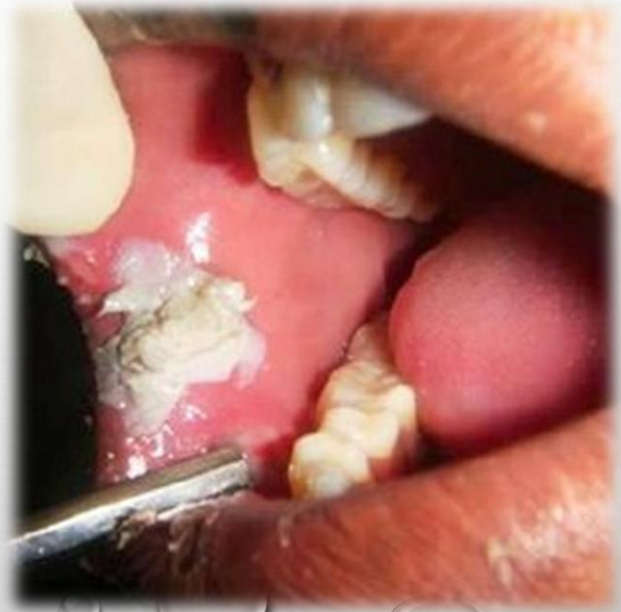


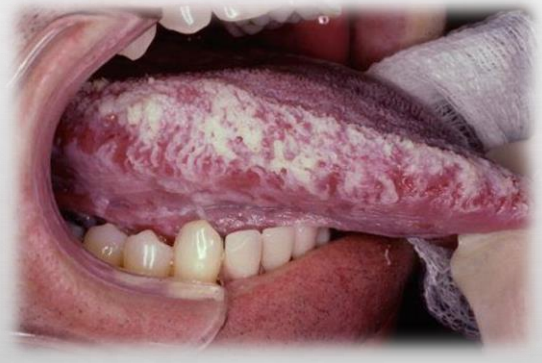
DIFFERENTIAL DIAGNOSIS

- ✓ Leukoedema
- ✓Chemical burn
- ✓Hairy leukoplakia
- ✓Verrucous vulgaris
- ✓Cheek biting lesion
- ✓White spongey nevus
- ✓Verrucous carcinoma
- ✓Galvanic white lesion
- ✓Syphilitic mucous patch
- ✓Discoid lupus erythematosus









TREATMENT PLAN

Definive Treatment of leukoplakia includes :

1.Removal of causative factors and maintaining the dietary levels of nutrients.
2. Medical Management.
3. Surgical Management.
4.Fulguration with electrocautery.
5. Cryosurgery.
6.Carbon dioxide Laser Therapy.

TREATMENT PLAN

1.Removal of causative factors and maintaining the dietary levels of nutrients.

•Removal of causative factors like stopping alcohol consumption, Betel chewing, smoking, and use of tobacco and removal of the source of Irritation like sharp edges of teeth, irregular denture surface, or fillings.

•Maintaining the dietary levels of nutrients that is used, to prevent Leukoplakia to occur and to promote treatment to complete include, Vitamin A,Vitamin C, Vitamin E, Betacarotene,Lysene, Vitamin B complex.

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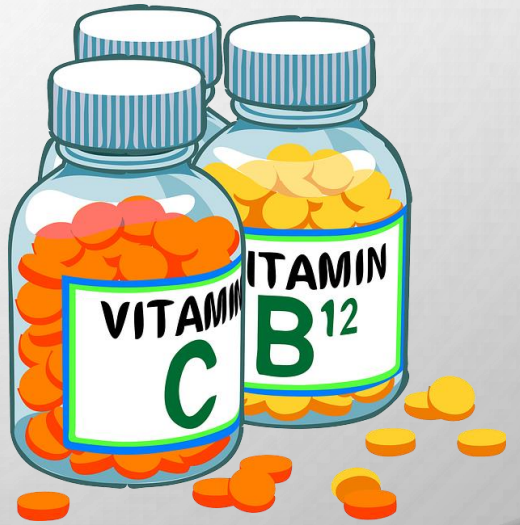


TREATMENT PLAN

2. Medical Treatment includes:

Topical medications.

a. Green tea, mixture of whole green tea, green tea polyphenols, and green Tea pigments painted on the lesions three times per day for six months.

b. Retinoids — derivatives of vitamin A: Retinoic acid, a vitamin A Derivative, seems to inhibit the replication of the Epstein-Barr virus (for the Treatment of hairy leukoplakia).

c. Podophyllum resin solution: Podophyllum solution is a mixture obtained from the dried rhizomes and roots of two common plants. When applied topically, It can heal leukoplakic patches, but it may cause some discomfort and affect your sense of taste. In addition, the patches often return several weeks after being treated.

d. Topical bleomycin.

TREATMENT PLAN

Systemic medications.

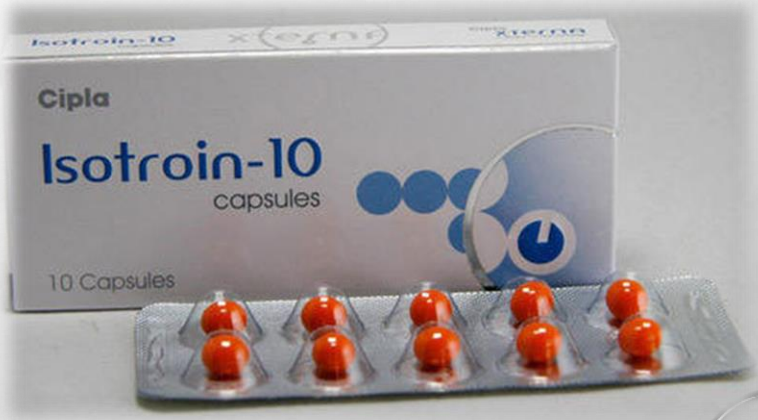
1.Beta-carotene 150,000 IU of beta-carotene twice per week for six months significantly increased the remission rate.

2.Vitamin A derivative, isotretinoin, and 13-cis retinoic acid: 28500IU per day.

3.Combination of beta-carotene (150000 IU per week and vitamin A (100000 IU per week).

4.Combination of betacarotene(50000IU) , VitaminC(1gram) and VitaminE (800IU) Per day for nine months .

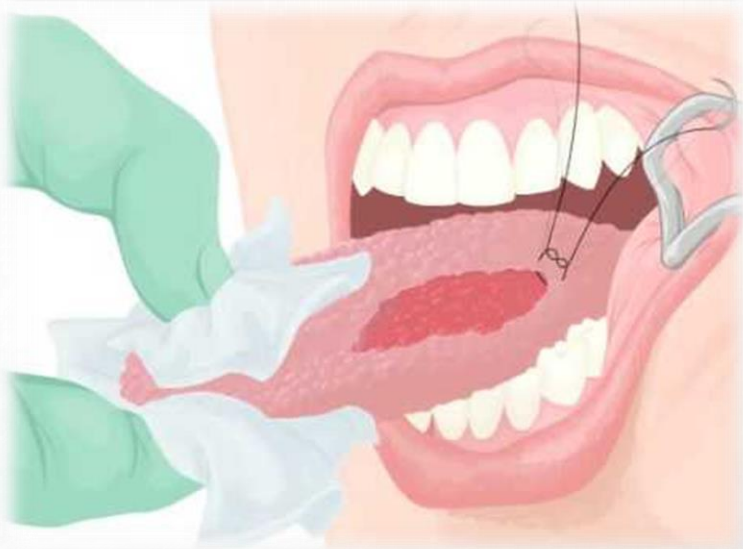
5. Lysine A. Lysine is an organic compound which is one of the 20 amino acids commonly found in animal proteins. Young adults need about 23 mg of this amino acid per day per kilogram (10 mg per lb) of body weight.



TREATMENT PLAN

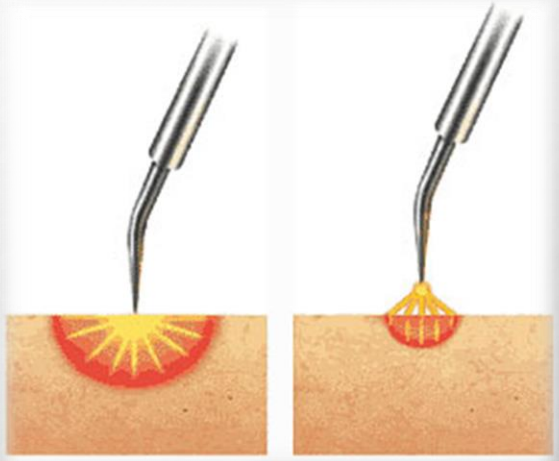
3. Surgical Management :

- Surgical striping (leukoplakia of lip which causes esthetic problems)
- Excision and primary closure, in case of small lesions.



4. Fulguration with electrocautery :

- Fulguration with electrocautery appliance is another treatment of leukoplakia.
- This procedure requires local or general anaesthesia.
- The healing process is slow and painful.

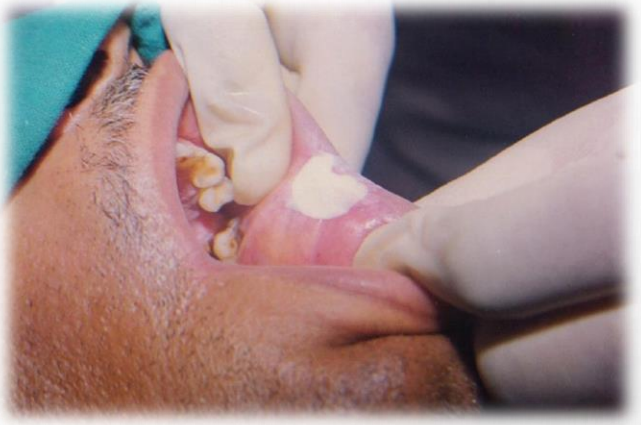


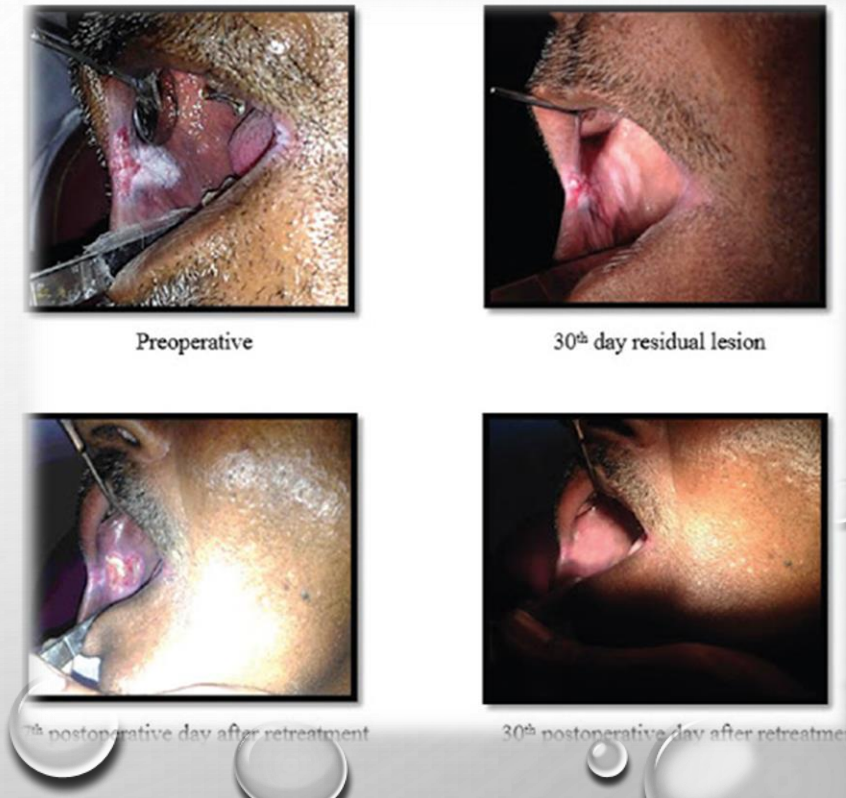
TREATMENT PLAN

5. *Cryosurgery:*

Cryosurgery has several advantages over fulguration: application can take place without an anesthetic, desquamation is completely no painful process; during he healing phase there is absence of infection and pain; and the wound is cleaner without foul odor.

The technique of cryosurgery consists of applying a disc type cryophobe to the moistened surface lesion that produces a very low freezing temperature in the tissue. The first freeze is for one minute followed by a five minutes thaw. A second one minute freeze is then administered. Freezing of the tissue produces a white area of necrotic tissue.





TREATMENT PLAN

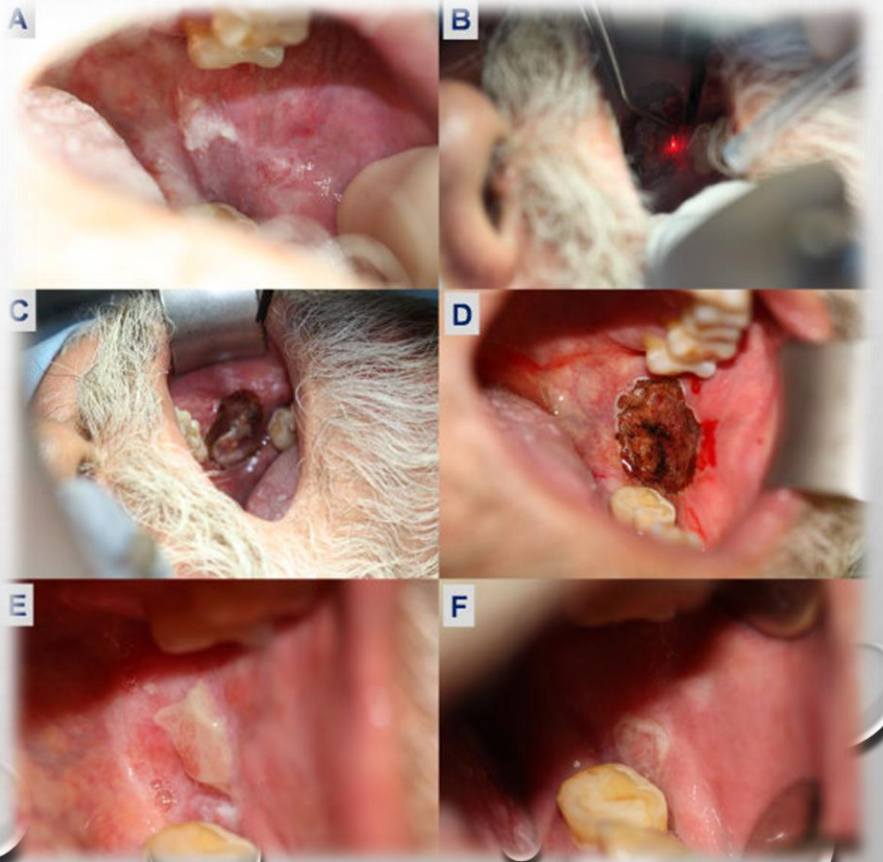
6. Carbon dioxide Laser Therapy :

•A carbon dioxide (CO_2) laser uses CO_2 gas. Watery tissue absorbs this type of laser energy, which doesn't penetrate very deeply, but vaporizes surface cells.

• A CO_2 laser leaves a residue of carbon, called char. If a dentist leaves char in place, it serves as a biological dressing, maintaining sterility.

•Advantages of laser therapy include durable timely hemostasis, less stress for soft tissue, applications minimal anesthetic, immediate aesthetic, result fiber access to confined areas ,precise incision/excision, minimal requirement for anesthetic ,minimized requirement for sutures ,selective removal of diseased tissue ,enhanced healing less postoperative inflammation

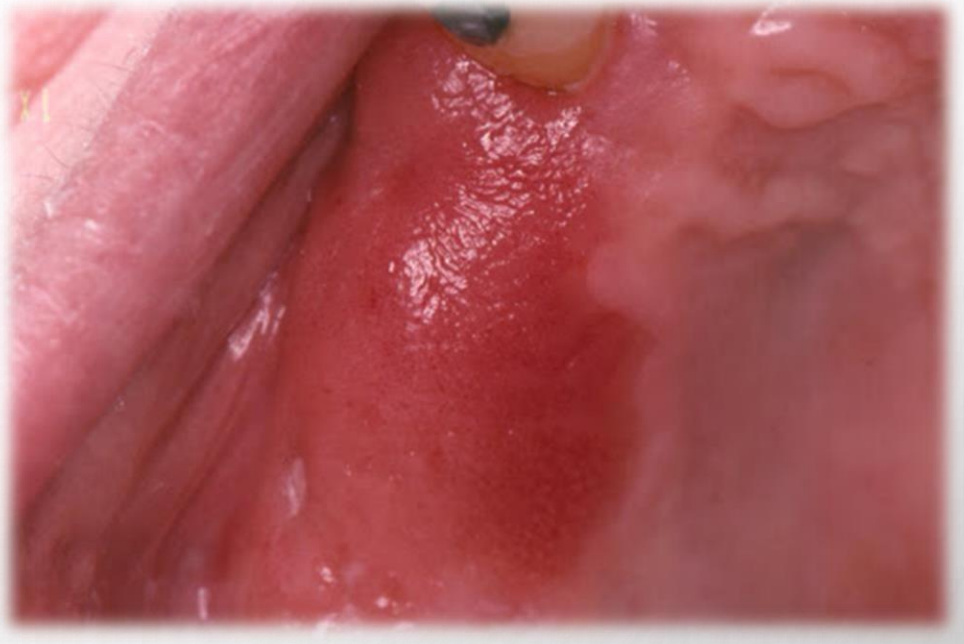
•Disadvantages of laser therapy include High cost, Needs protection of eyes, Delayed wound healing



ERYTHROPLAKIA

ERYTHROPLAKIA

DEFINITION:



•It is defined as “A bright red velvety plaque or patch which cannot be characterised clinically or pathologically as being due to any other condition.

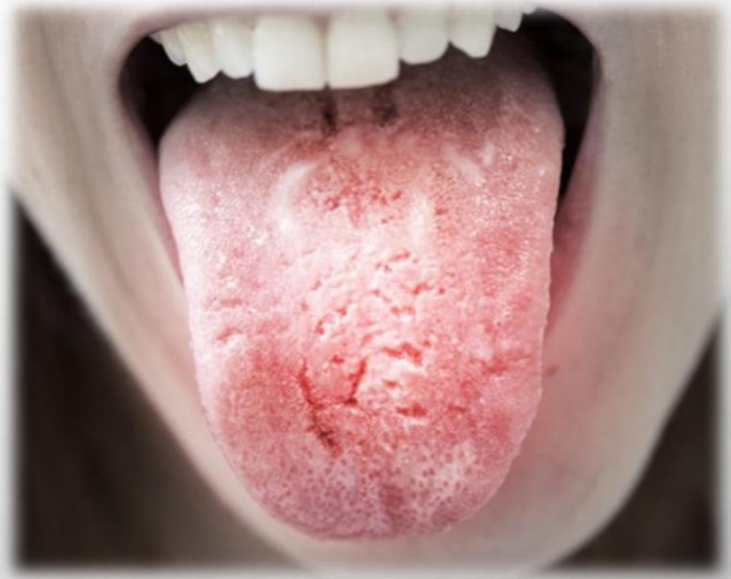
•It is a clinical term.

•Also known as erythroplasia of Querat.

ERYTHROPLAKIA

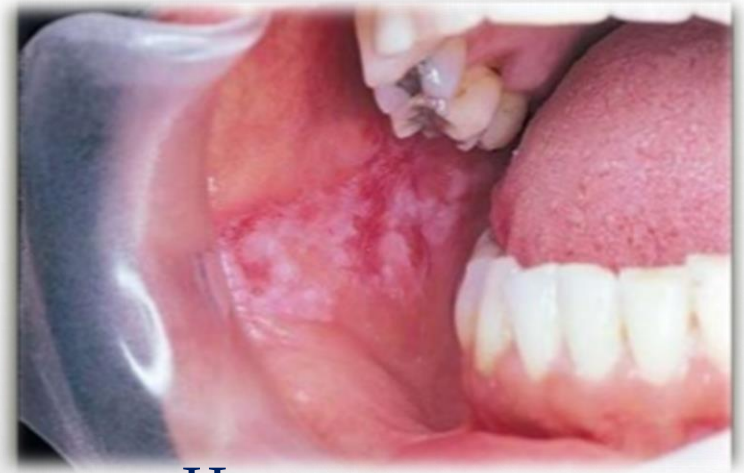
ETIOLOGY:

1. Alcohol
2. Smoking
3. Idiopathic
4. Secondary infection with candidiasis

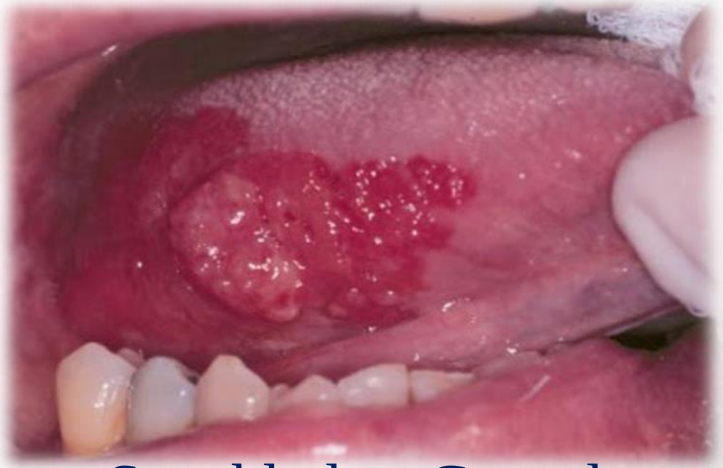


ERYTHROPLAKIA

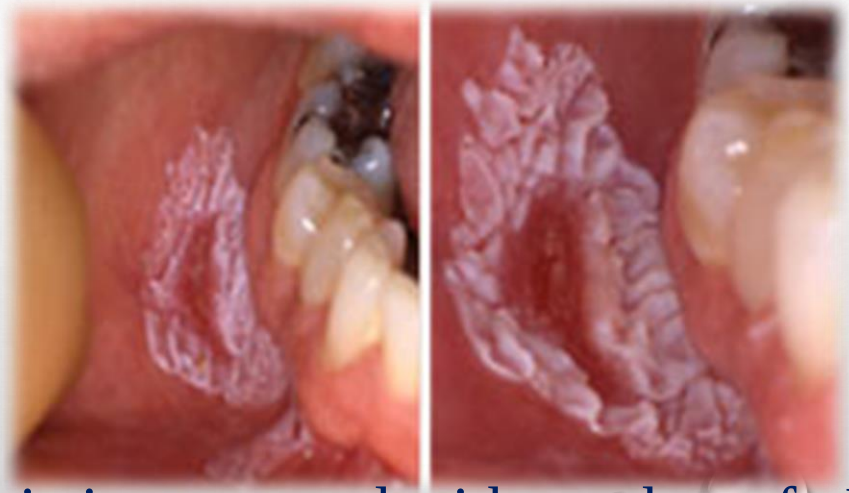
CLASSIFICATION :



Homogenous



Speckled or Granular

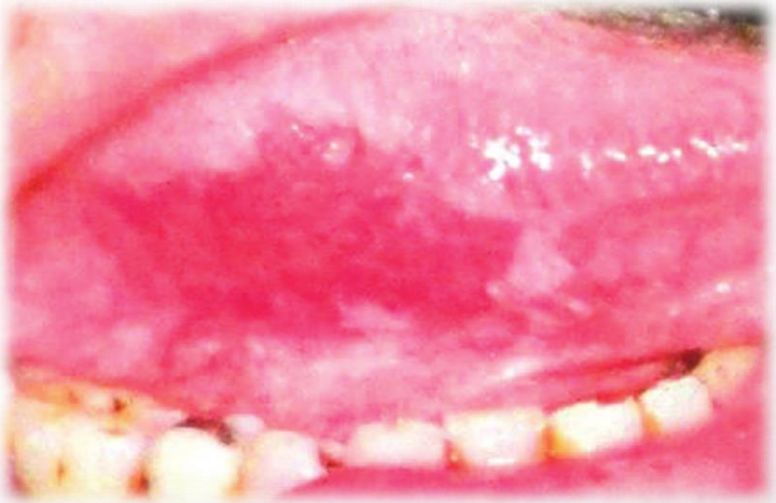


Erythroplakia interspersed with patches of Leukoplakia

ERYTHROPLAKIA

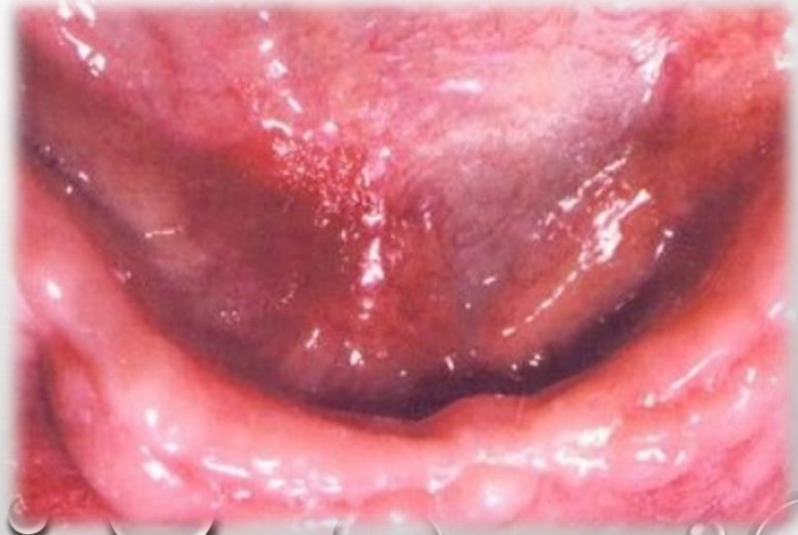
CLINICAL FEATUERS:

Age: 6th and 7th decades.
Sex: No predilection.
Site: Floor of the mouth Ventral surface of the tongue Soft palate Anterior faucial pillars.



CLINICAL PRESENTATION:

•Lesions are asymptomatic.
•Non-elevatad, flat or depresssed red macule or patch on an epithelial surface.
•Typical lesion less than 1.5cm.
•Margins sharply demarcated from surrounding pink mucosa.
•Surface is smooth and regular.



ERYTHROPLAKIA

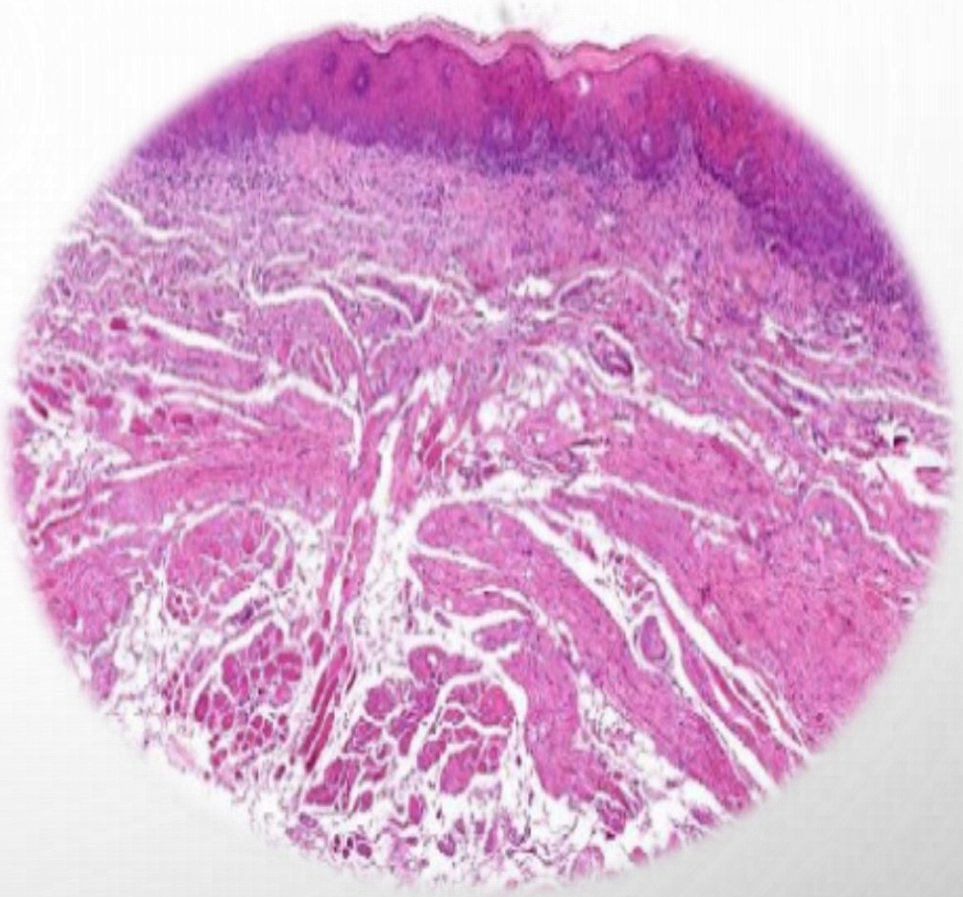
HISTOPATHOLOGY:

EPITHELIUM:

- ✓Lack of keratin
- ✓Atrophic and may be hyperplastic.

CONNECTIVE TISSUE:

- ✓Chronic inflammatory cells



ERYTHROPLAKIA

Differentiation of erythroplakia with malignant change and early squamous cell carcinoma :

•1% toulidine blue (tolonium chloride) solution is applied topically with a swab or oral rinse.

• Drying the mucosa.

•1% acetic acid rinse after application of toulidine blue solution.

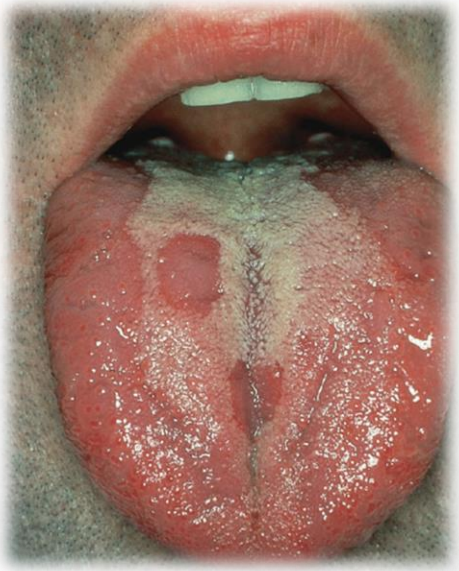
RESULT: Erythroplakic lesions retain the stains.

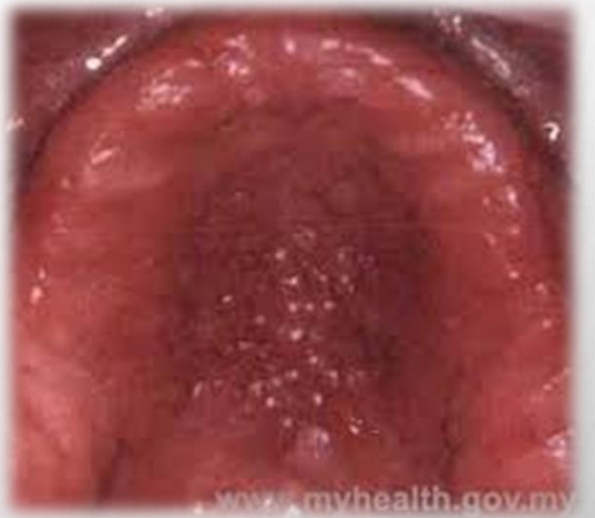
MALIGNANT POTENTIAL OF ERYTHROPLAKIA

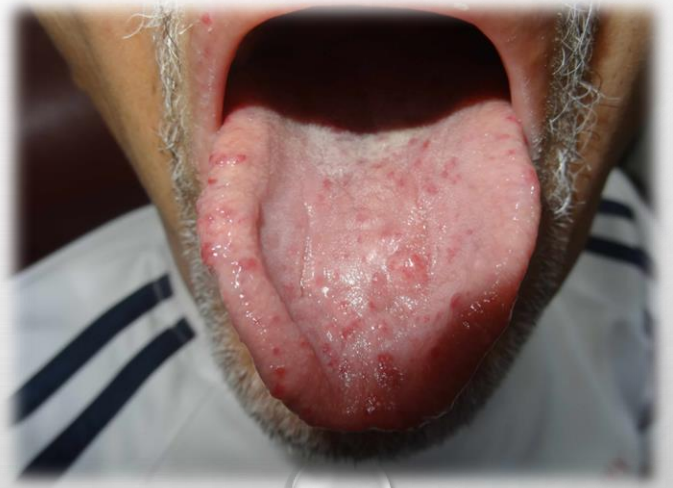
✓**Malignant transformation rates** is very high (vary from 14% to 50%), so it needs to be treated expeditiously.

DIFFERENTIAL DIAGNOSIS

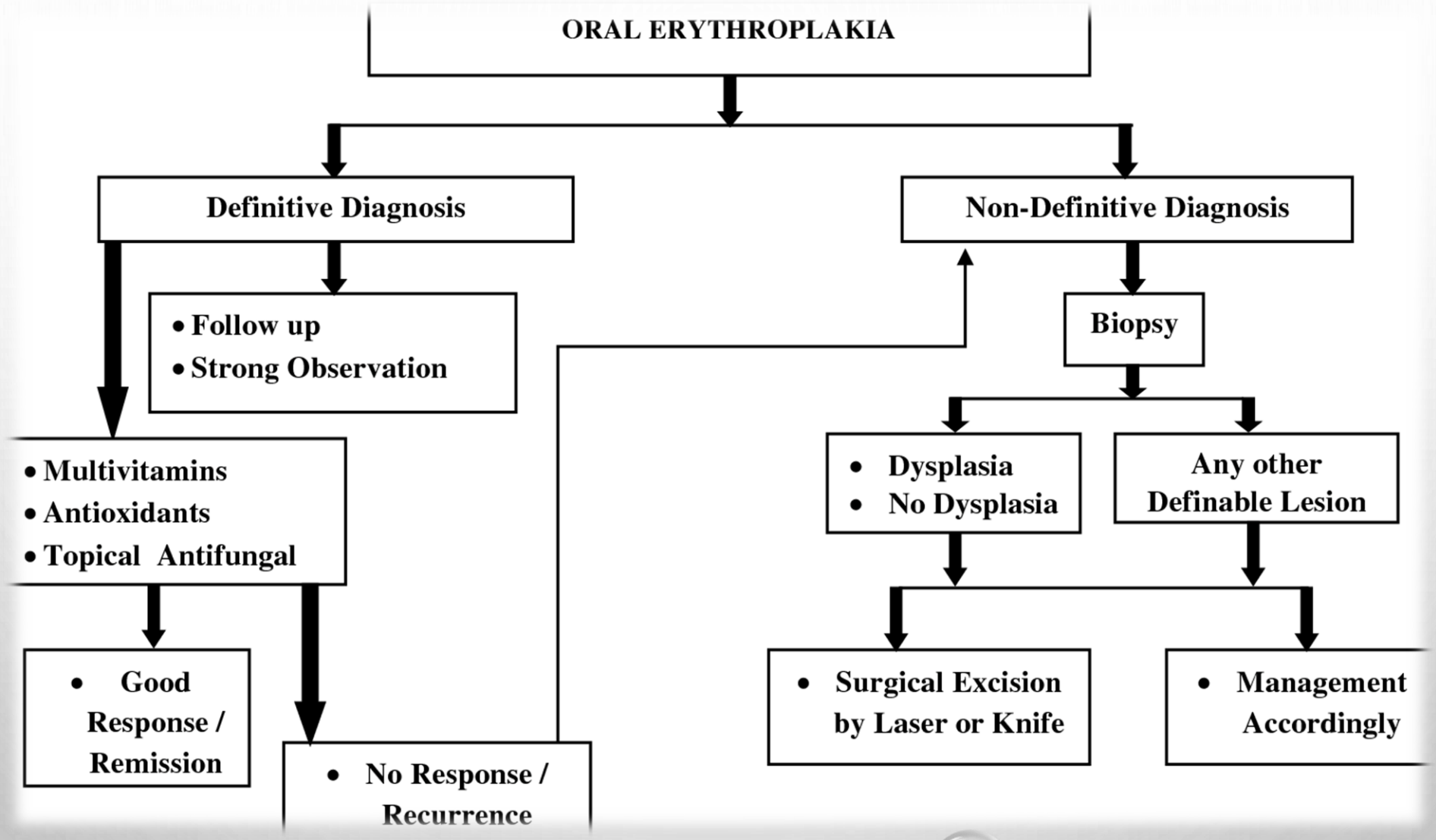
- ✓Dermatosis
- ✓Inflammatory conditions
- ✓Subacute or chronic stomatitis due to
  a. dentures
  b. tuberculosis
  c. fungal infection
- ✓Traumatic lesion Histoplasmosis Telangectasia







TREATMENT PLAN



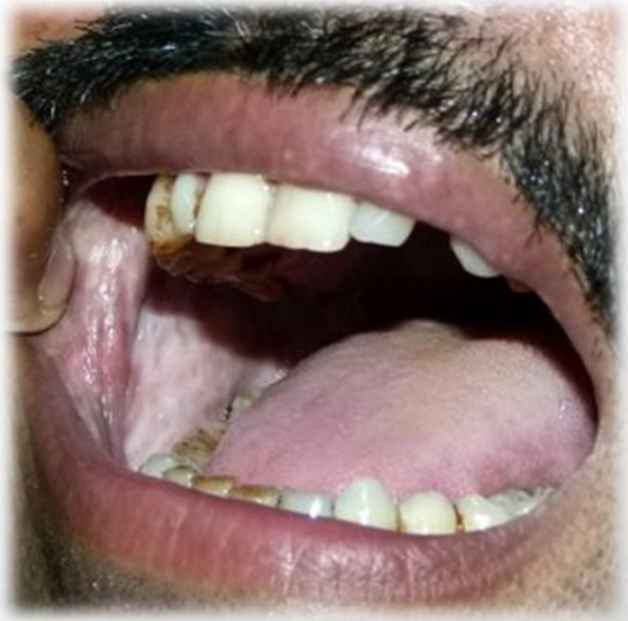
ORAL SUBMUCOUS FIBROSIS(OSMF)

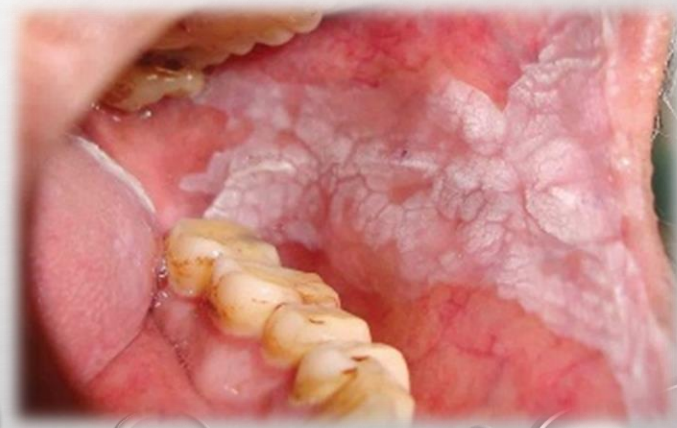
ORAL SUBMUCOUS FIBROSIS (OSMF)

DEFINITION:

• “OSMF is an insidious chronic disease affecting any part of the oral cavity and sometimes the pharynx. Although, occasionally preceeded by and/or associated with vesicle formation, it is always associated with juxta epithelial inflammatory reaction, followed by a fibroelastic change of the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa and causing trismus and inability to eat”.

Most widely accepted definition by Pindborg JJ & Sirsat S.M (1966) states





ORAL SUBMUCOUS FIBROSIS (OSMF)

EPIDEMIOLOGY:

Prevalence : Indian subcontinent as a reflection of their food, cultural or religious habits.
Sex :2.3:1- M:F
More common Age : younger individual (15-35 years)
Common Site : Buccal mucosa common.

ORAL SUBMUCOUS FIBROSIS (OSMF)

ETIOLOGY:

✓Multifactorial

Local factors:

Chillies and Arecanut

Systemic factors :

Nutritional deficiency,

Genetic predisposition and Autoimmunity.

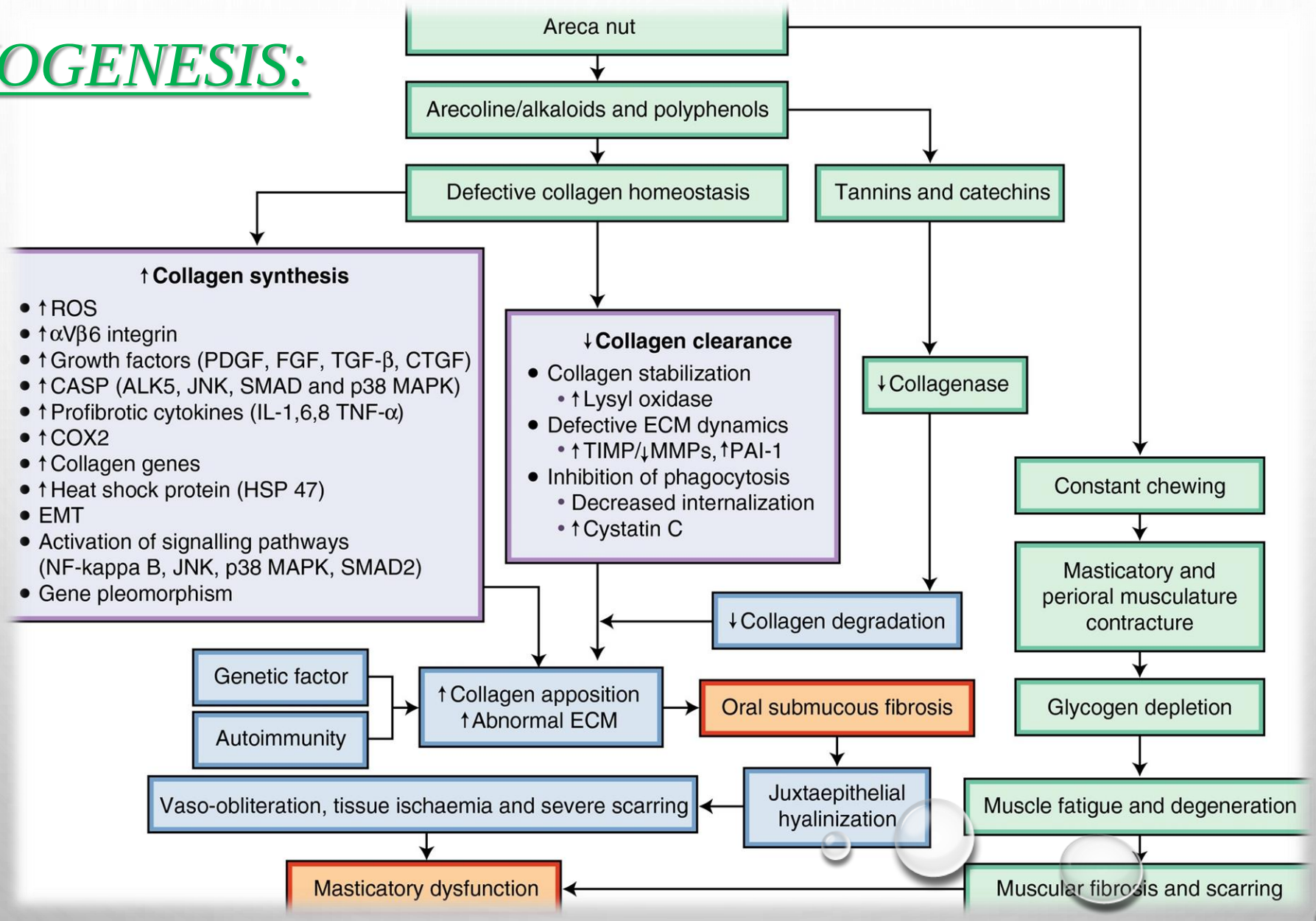
✓ Epidemiological and in vitro experimental studies - chewing areca nut is the major etiological factor.

ORAL SUBMUCOUS FIBROSIS (OSMF)

PATHOGENESIS:(VIDEO)

ORAL SUBMUCOUS FIBROSIS (OSMF)

PATHOGENESIS:



ORAL SUBMUCOUS FIBROSIS (OSMF)

CLASSIFICATION BASED ON CLINICAL FINDINGS:

(Pindborg JJ 1989)

Stage I- Stomatitis; erythematous mucosa, vesicles, ulcers, petechiae

Stage II- Fibrosis in healing vesicles and ulcers; blanching, palpable bands, mottled marble like appearance

Stage III- Sequelae of OSMF; Leukoplakia, speech and hearing deficit

CLASSIFICATION BASED ON INTERINCISAL DISTANCE:

(Lai DR 1995)

Group 1- >35mm

Group 2- between 30 and 35mm

Group 3- between 20 and 30mm

Group 4- <20mm

ORAL SUBMUCOUS FIBROSIS (OSMF)

STAGING OF OSMF:

(Haider SM (2000)

Clinical stage:

Stage I: faucial bands only

StageII: faucial and buccal bands

Stage III: Faucial, buccal and labial bands.

Functional stage:

Mouth opening ≥ 20 mm.

Mouth opening 11-19 mm.

Mouth opening ≤10 mm.

CLASSIFICATION BASED ON MORPHOLOGICAL VARIANTS OF SOFT PALATE:

(Prakash R. et al)

Type 1: Leaf shaped

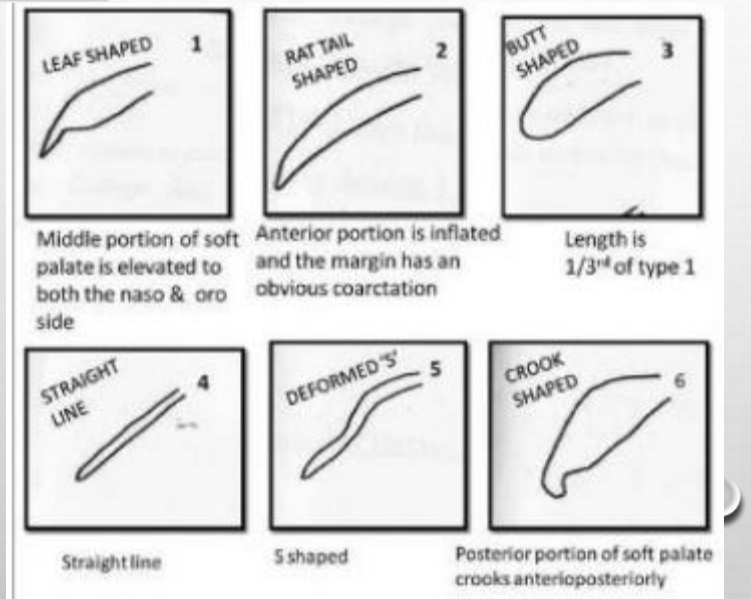
Type 2: Rat tail shaped

Type 3: Butt shaped

Type 4: Straight line

Type 5: Deformed S

Type 6: Crook shaped



ORAL SUBMUCOUS FIBROSIS (OSMF)

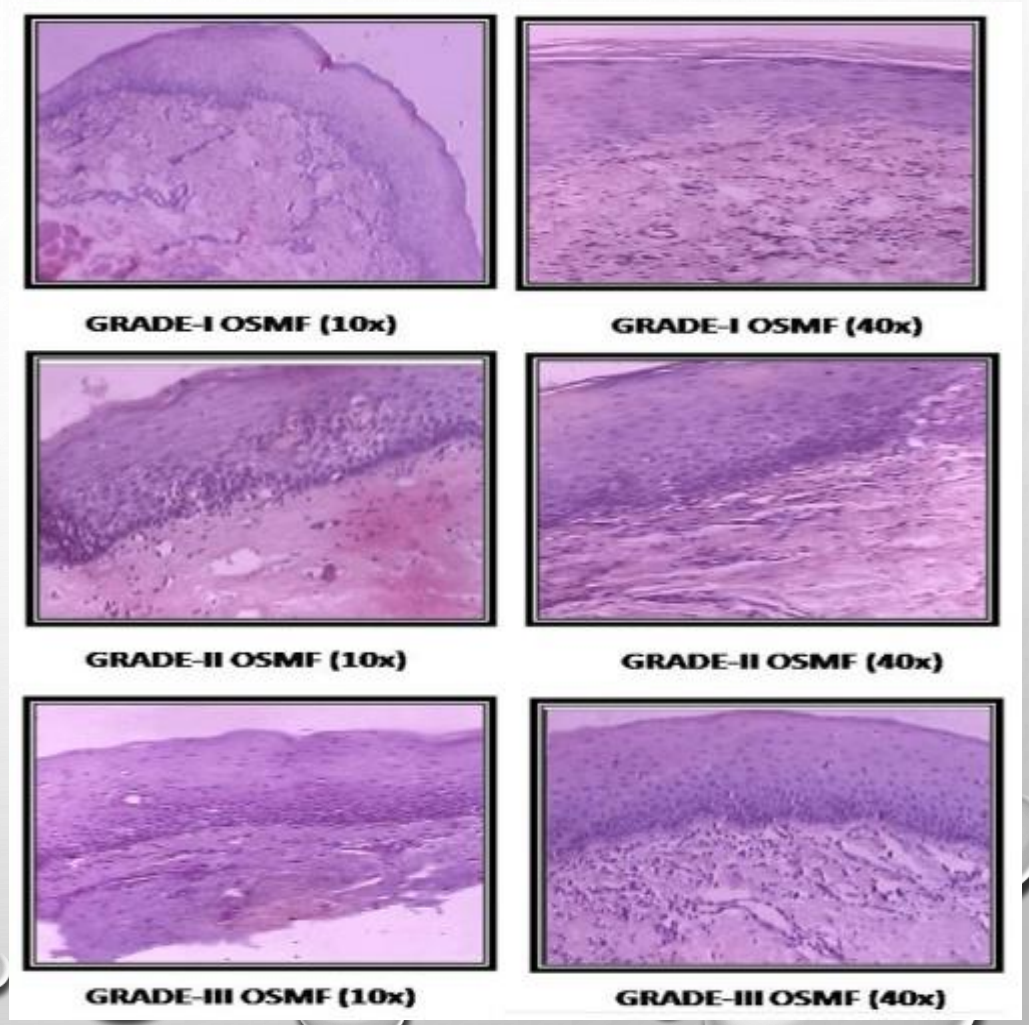
HISTOLOGICAL CLASSIFICATION:

(Bailor D.N)

Grade I: Epithelium shows Hyperkeratosis, intra cellular edema, little basal cell hyperplasia, rete ridges present. -.

Grade II: Epithelium undergoing atrophy, rete ridges less prominent, connective tissue showing thickened collagen bundles, less cellularity, fibrosed blood vessels with moderate amount of hyalinization.

Grade III: Marked atrophy of epithelium, absence of rete ridges, connective tissue showing abundant hyalinization, cellularity absent in connective tissue.



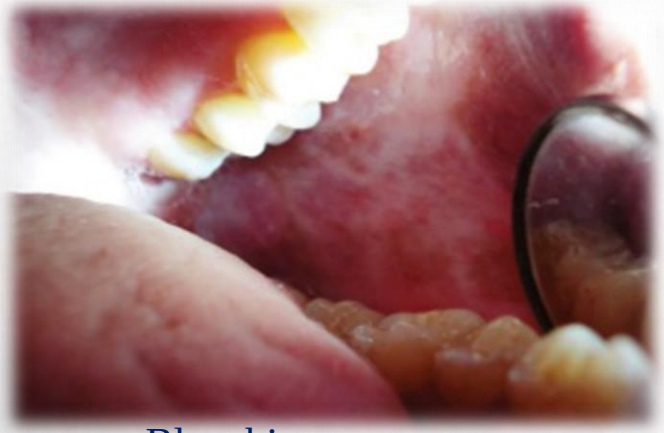
ORAL SUBMUCOUS FIBROSIS (OSMF)

CLINICAL FEATUERS:

EARLY OSMF	ADVANCED OSMF
Burning sensation	Blanced
Blisters	Slightly opaque
Ulcerations	White fibrous bands (vertically)
Excessive salivation	Fixation, shortening or deviation of uvula
Defective gustatory sensation	Impairment of tongue movement
Dryness of mouth	Inability to blow or whistle
	Difficulty in swelling
	Nasal voice

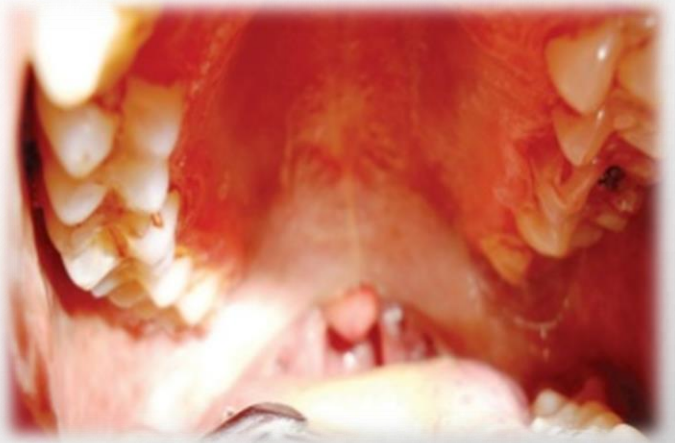
ORAL SUBMUCOUS FIBROSIS (OSMF)

CLINICAL FEATUERS:

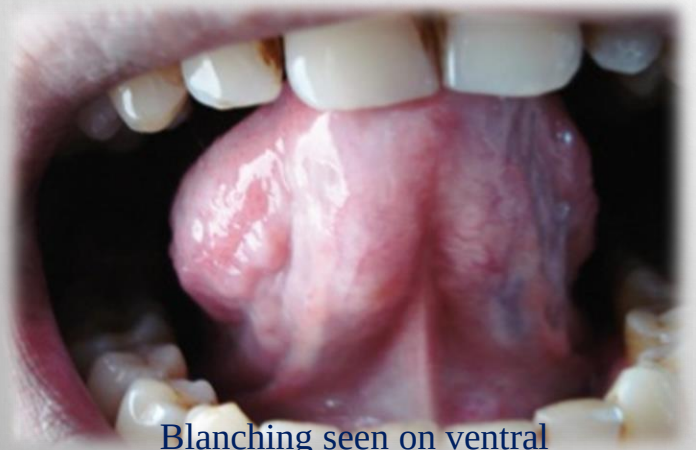


Blanching seen over
left buccal mucosa

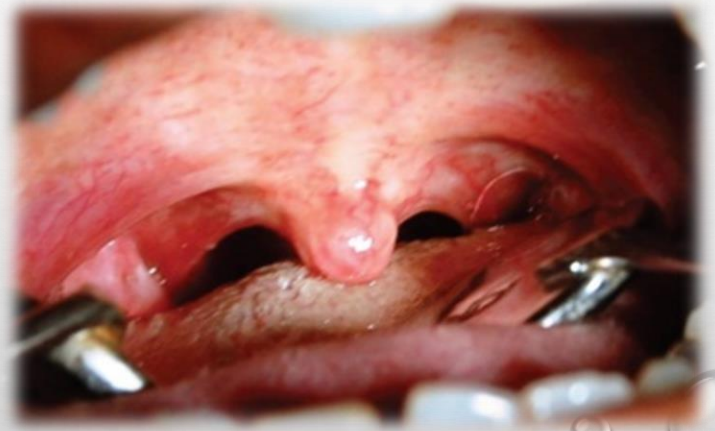
Decreased mouth opening



Soft palate showing blanching
and shrunken uvula
seen in the posterior part



Blanching seen on ventral
surface of tongue, floor of mouth
and restricted movements of tongue



Soft palate and faucial pillars
showing redness

ORAL SUBMUCOUS FIBROSIS (OSMF)

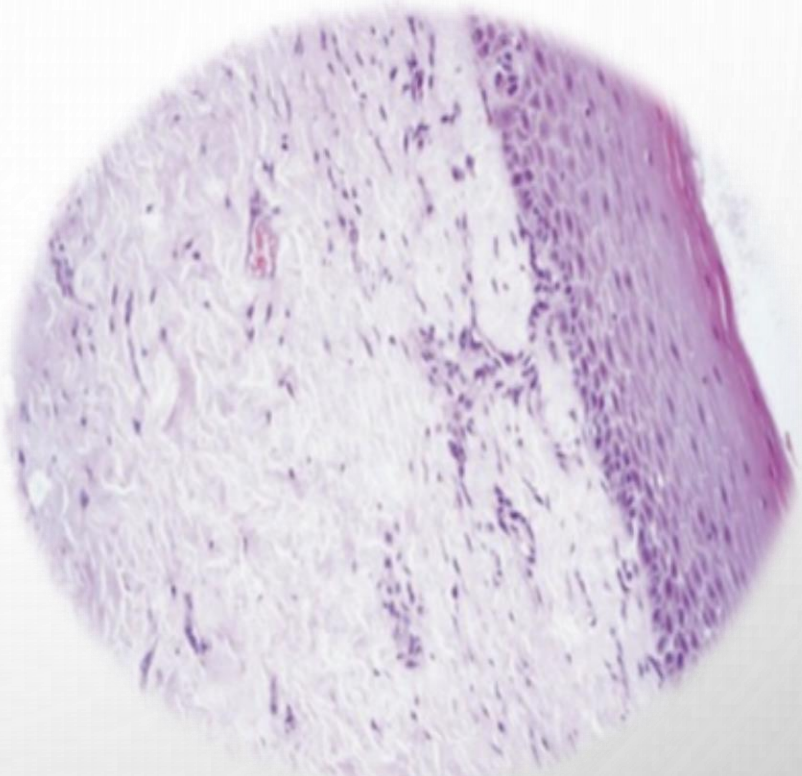
HISTOPATHOLOGY:

EPITHELIUM:

✓The atrophic epithelium also exhibits intracellular edema, signet cells and epithelial atypia (focal dysplasia).

✓Epithelial keratinization, especially the tendency of atrophic and hyperplastic epithelium to show keratinization was higher when compared to normal.

✓ Increased mitotic activities were evident in a small number of cases.



Classical oral submucous fibrosis showing thin atrophic epithelium with chronic inflammation and dense fibrosis in the submucosa

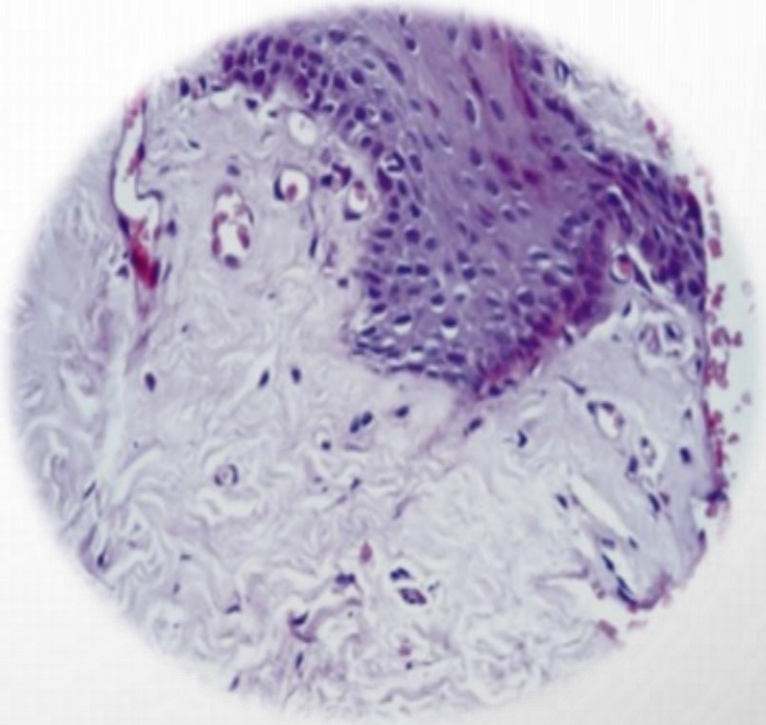
ORAL SUBMUCOUS FIBROSIS (OSMF)

HISTOPATHOLOGY:

CONNECTIVE TISSUE:

✓Pindborg et al (1966) have described four consecutive stages in submucous fibrosis cases based on sections stained with haemotoxylin and eosin: The changes are based on following criteria:

- ✓ Presence or absence of edema
- ✓Nature of the collagen bundles
- ✓Overall fibroblastic response
- ✓State of the blood vessels
- ✓Predominant cell type in the inflammatory exudates



OSMF showing extensive fibrosis in the submucosa

ORAL SUBMUCOUS FIBROSIS (OSMF)

HISTOPATHOLOGY:

Very early stage

•Fine fibrillar collagen dispersed with marked edema and strong fibroblastic response showing plump young fibroblasts containing abundant cytoplasm will be observed.

•Blood vessels - occasionally normal, but more often they are dilated and congested.

•Inflammatory cells- polymorphonuclear leukocytes with occasional eosinophils, are present.

Early stage

•In this stage juxta-epithelial area shows early hyalinization.

•The collagen is still seen as separate bundles which are thickened.

•Plump young fibroblasts are present in moderate numbers.

•The blood vessels are often dilated and congested. The inflammatory cells are mostly lymphocytes, eosinophils and the occasional plasma cells.

ORAL SUBMUCOUS FIBROSIS (OSMF)

HISTOPATHOLOGY:

Moderately advanced stage :

•In this stage, the collagen is moderately hyalinised.
•The amorphous change starts from the juxta-epithelial basement membrane.
•Occasionally, thickened collagen bundles are still seen separated by slight residual edema.
•The adult fibroblastic cells have elongated spindle shaped nuclei and scanty cytoplasm.
•Blood vessels are either normal or constricted as a result of increased surrounding tissue.
•The inflammatory exudate consists of lymphocytes, plasma cells and occasional eosinophils.

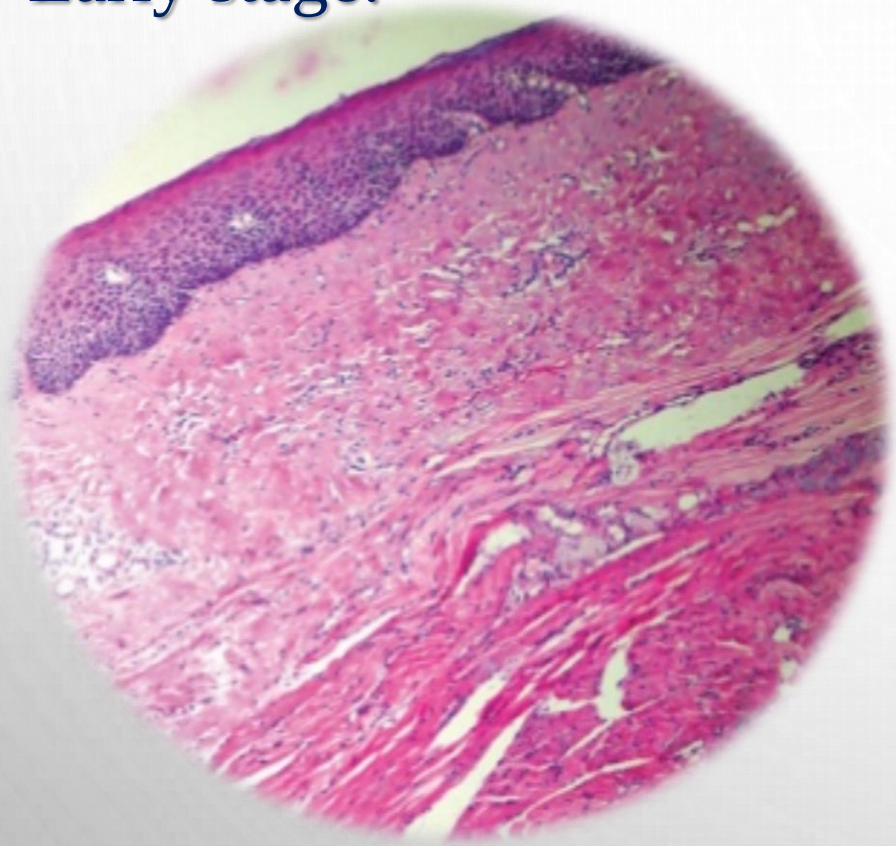
Advanced stage:

• The collagen is completely hyalinised and is seen as a smooth sheet with no distinct bundles or edema.
•Hyalinised connective tissue becomes hypocellular with thin elongated cells.
•Blood vessels are completely obliterated or narrowed.
•The inflammatory exudate consists of lymphocytes and plasma cells and occasional eosinophils.
•Interestingly the melanin containing cells in the lamina propria are surrounded by dense collagen, which explains the clinically observed loss of pigmentation.

ORAL SUBMUCOUS FIBROSIS (OSMF)

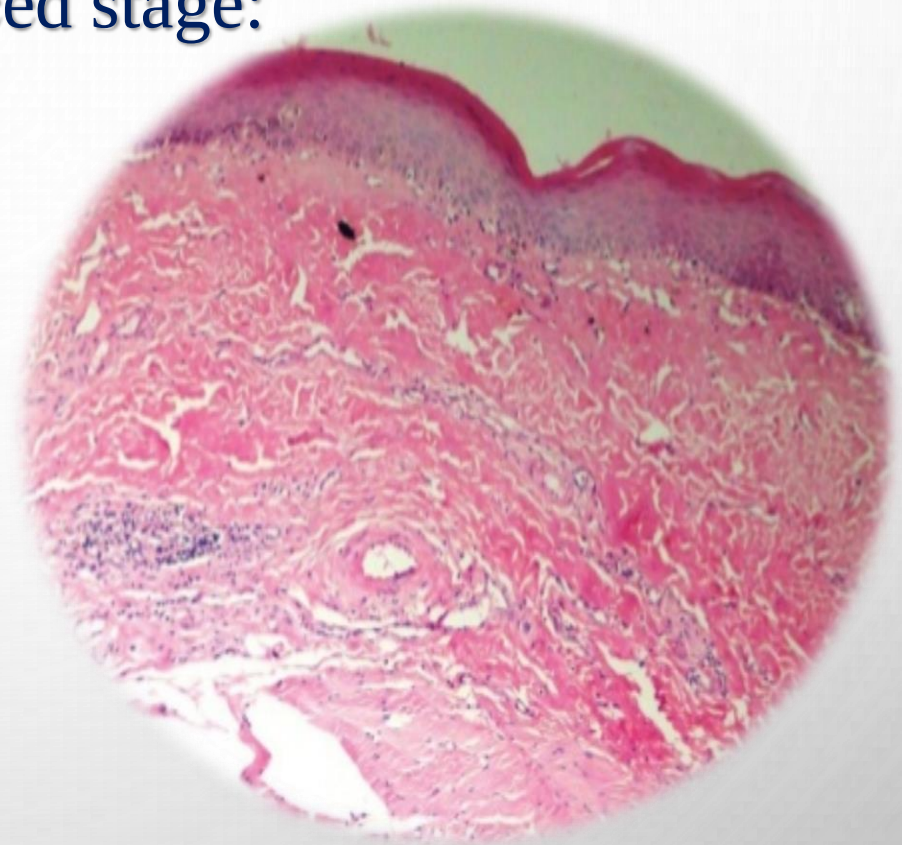
HISTOPATHOLOGY:

Early stage:



Histopathological picture showing early changes in the oral submucous fibrosis

Advanced stage:



Histopathological picture of advanced stage oral submucous fibrosis showing atrophied epithelium, increased fibrosis and hyalinization of submucosal tissues

MALIGNANT POTENTIAL OF OSMF

✓First described by Paymaster in 1956.

✓Pindborg et al., 1984, put forward 5 criteria to prove disease to be precancerous. These include,

•high occurrence of OSMF in oral cancer patients,
•higher incidence of SCC in patients with OSMF,
•histological diagnosis of cancer without any clinical suspicion in OSMF,
•high frequency of epithelial dysplasia
•higher prevalence of leukoplakia among OSMF.

✓Malignant transformation rate of OSMF was found to be the range of 7-13%.
✓According to long-term follow-up studies a transformation rate of 7.6% over a period of 17 years was reported (Murti1985).

SPECIAL INVESTIGATIONS

SPECIAL STAINS

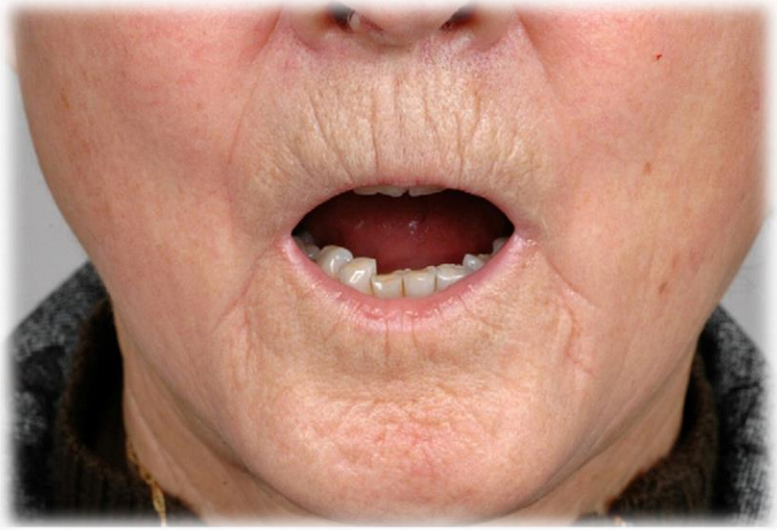
- Van Gieson's Stain
- Masson's trichrome stain
- Picrosirius red

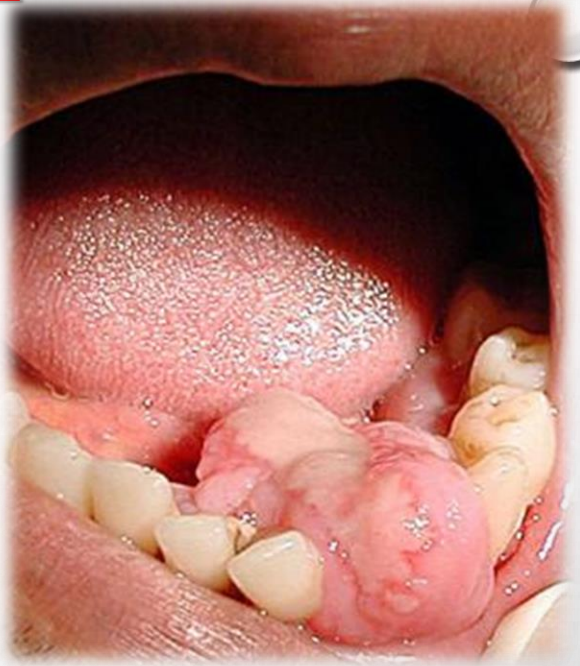
IHC MARKERS

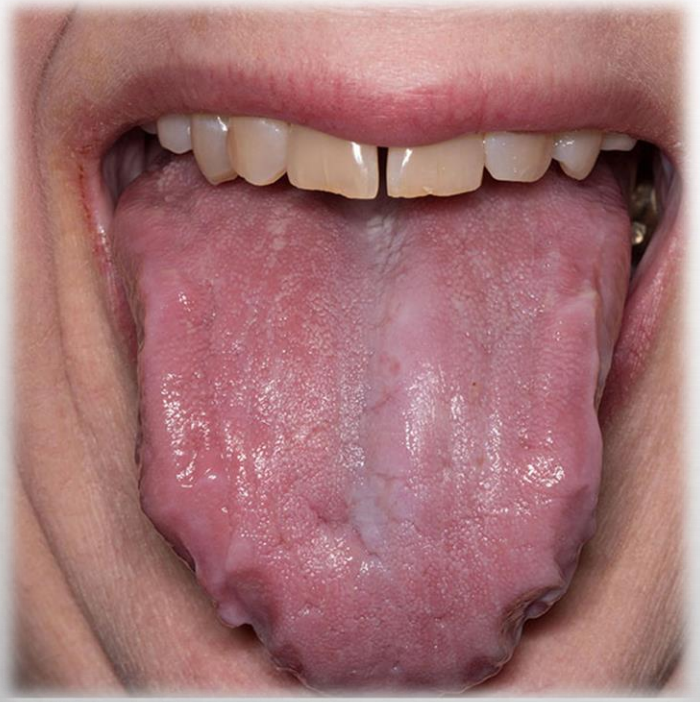
- Heat shock proteins 47
- Cystatin c
- Survivin
- Endothelial markers- CD31, CD34, CD105
- Basic fibroblastic growth factor
- P53
- Bcl-2
- Ki-67

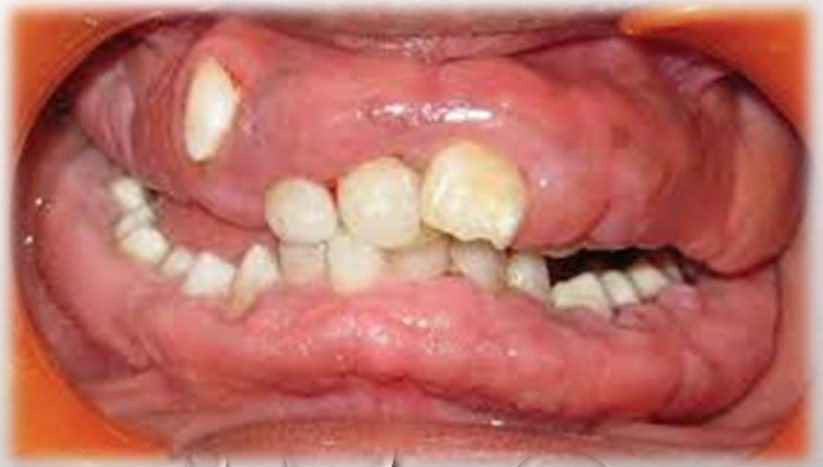
DIFFERENTIAL DIAGNOSIS

- ✓Scleroderma
- ✓Fibroma
- ✓Generalized fibromatosis
- ✓Anemia
- ✓Amyloidosis



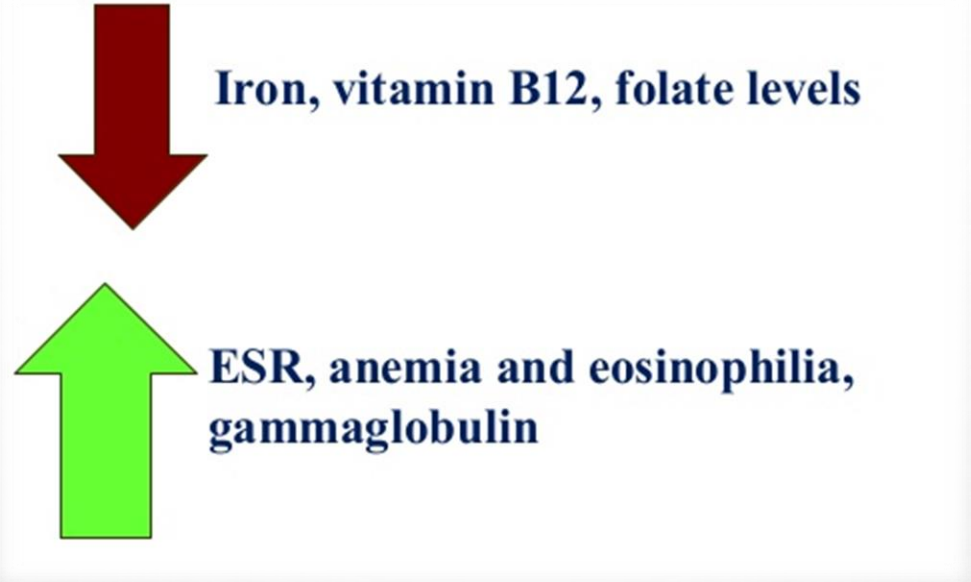






BLOOD CHEMISTRY

Blood chemistry and haematological variations.



TREATMENT PLAN

Definive Treatment of OSMF includes :

1. Restriction of habits
2. Corticosteroids
3. Hyaluronidase
4. Placental Extracts
5. Nutritional support
6. Physiotherapy
7. Surgical treatment
8. Stem cell therapy

TREATMENT PLAN

1) Restriction of habits:

Reduction or elimination of habit of areca nut chewing is an important preventive measure.

2) Corticosteroids:

Suppresses inflammatory response by their anti-inflammatory action. It prevents fibrosis by decreasing fibroblastic proliferation and deposition of collagen. local injection (intralesional injection), topical applications or in the form of mouth washes.

3) Hyaluronidase:

Break down hyaluronic acid, lower the viscosity of the intercellular cement substance and also decreases collagen formation.
Intralesional injection of Hyalase used in the dose of 1500 IU, Chymotrypsin 5000 IU, Fibrinolytic agents (Hyalase) dissolved in 2% lignocaine.

TREATMENT PLAN

4) Placental Extracts:

The combination of dexamethasone, hyaluronidase and placental extract were found to give better results than with a single drug.

5) Nutritional support:

High proteins, calories, vitamin B complex, other vitamins and minerals.

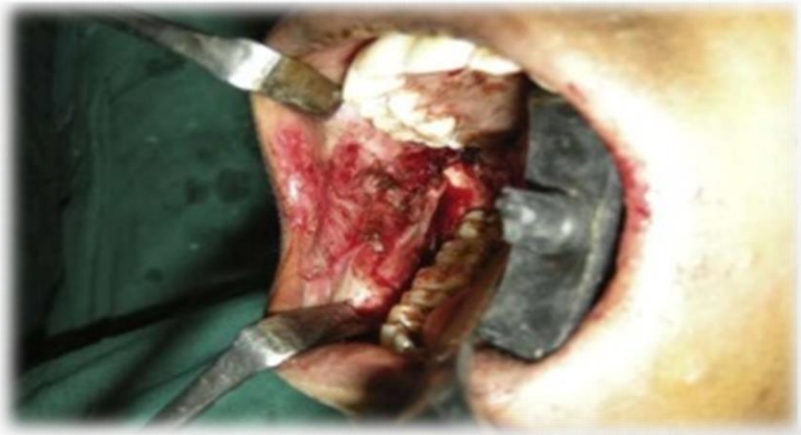
6) Physiotherapy:

Forceful mouth openings, heat therapy.

TREATMENT PLAN

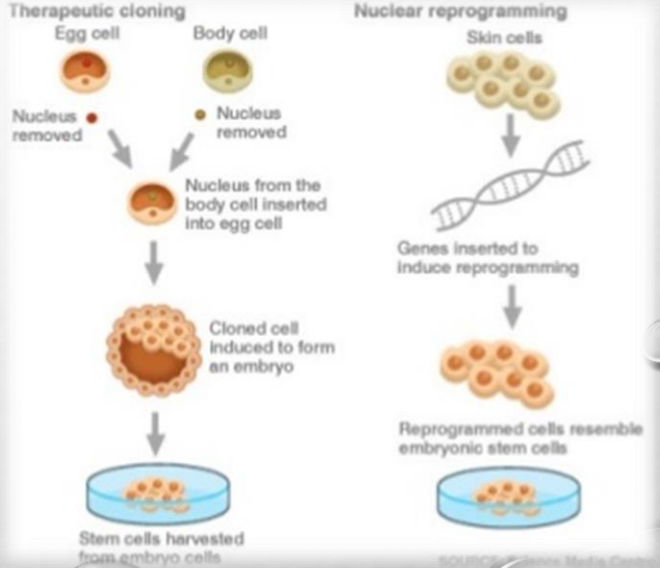
7) Surgical treatment:

Cutting the fibrotic bands resulted in more fibrosis and disability. Excision of fibrotic tissues and covering the defect with split thickness skin, fresh human amnion or buccal fat pad (BFP) grafts have been applied to treat OSMF.



8) Stem cell therapy:

Recently scientists have proven that intralesional injection of autologous bone marrow stem cells is a safe and effective treatment modality in oral sub mucosal fibrosis. Autologous bone marrow stem cell injections induces angiogenesis in the area of lesion which in turn decreases the extent of fibrosis thereby leading to significant increase in mouth opening



EROSIVE LICHEN PLANUS

EROSIVE LICHEN PLANUS

INTROUCTION:

✓Erosive lichen planus is a chronic and painful condition affecting mucosal surfaces, mainly the mouth (oral lichen planus) and the genitals (vulval or penile lichen planus).

✓A severe variant or erosive lichen planus in women is known as the vulvovaginal gingival syndrome..

✓Ulceration occurs in the mouth and gums as well as on the vulva and in the vagina. Peno-gingival syndrome is the equivalent condition in men.

✓Erosive lichen planus is sometimes associated with classical cutaneous lichen planus or other forms of mucosal lichen planus.

EROSIVE LICHEN PLANUS

EPIDEMIOLOGY:

Sex :It is at least twice as common in women than in men.

More common Age : 40 - 70 yrs

Common Site : Buccal mucosa common , Tongue.

EROSIVE LICHEN PLANUS

ETIOLOGY:

✓Erosive lichen planus is a destructive autoimmune disease of unknown cause involving T lymphocytes.

✓Occasionally, it is drug-induced and will resolve on withdrawal of the responsible drug.

✓Partial response to antifungal agents and antibiotics indicates an abnormal response to local microflora may be involved, especially Candida albicans.

✓Cytokine expression profiling has found increased levels of the interleukins, IL-17 and IL-23.

EROSIVE LICHEN PLANUS

CLINICAL FEATUERS:

2nd most common type

Age: 40-70 yrs

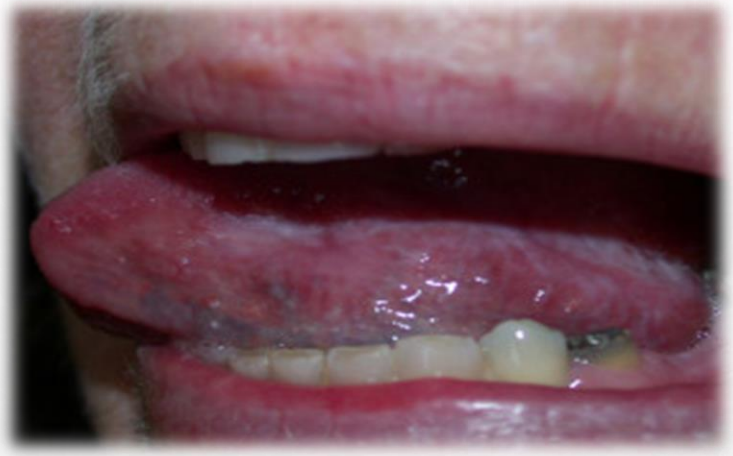
Sex: It mainly affects adults, particularly women, and is rare in children

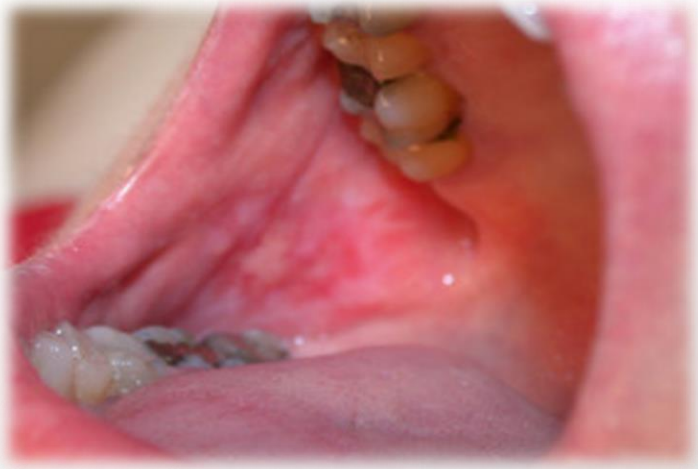
Site: Buccal/Vestibular mucosa, Borders of the tongue, Gingiva etc.

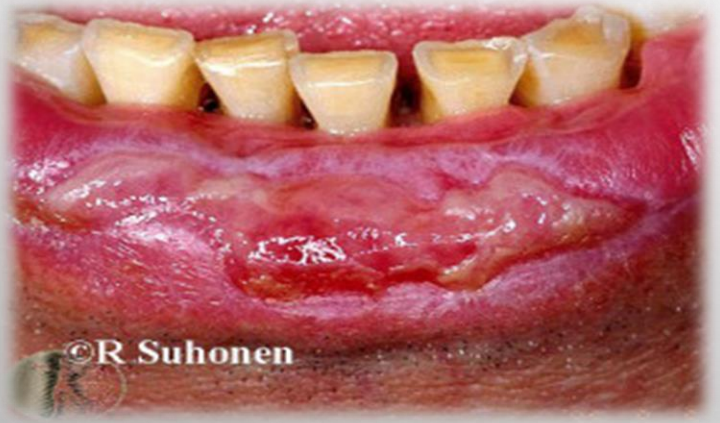
Clinical presentation:

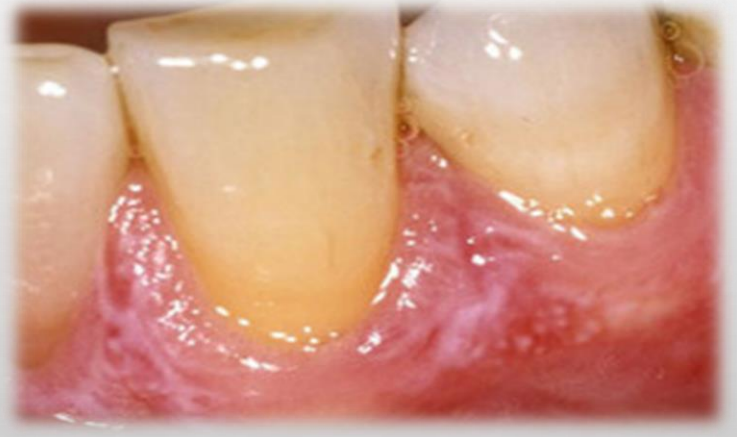
- Mix of erythematous and ulcerated areas surrounded by radiating keratotic striae
- Similar appearance to candidiasis, pemphigus and lupus
- Lesions tend to migrate and often multifocal
- Symptomatic
- Sore mouth sensitive to heat, cold, spices, and alcohol
- Pain and bleeding on touch
- Plaque lesions - Resemble focal leukoplakia - Vary from smooth flat areas to raised irregular plaques - Often multifocal - Dorsum of tongue and buccal mucosa

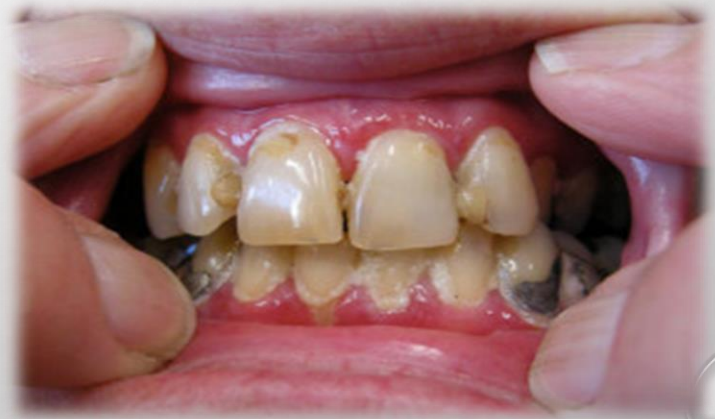
EROSIVE LICHEN PLANUS







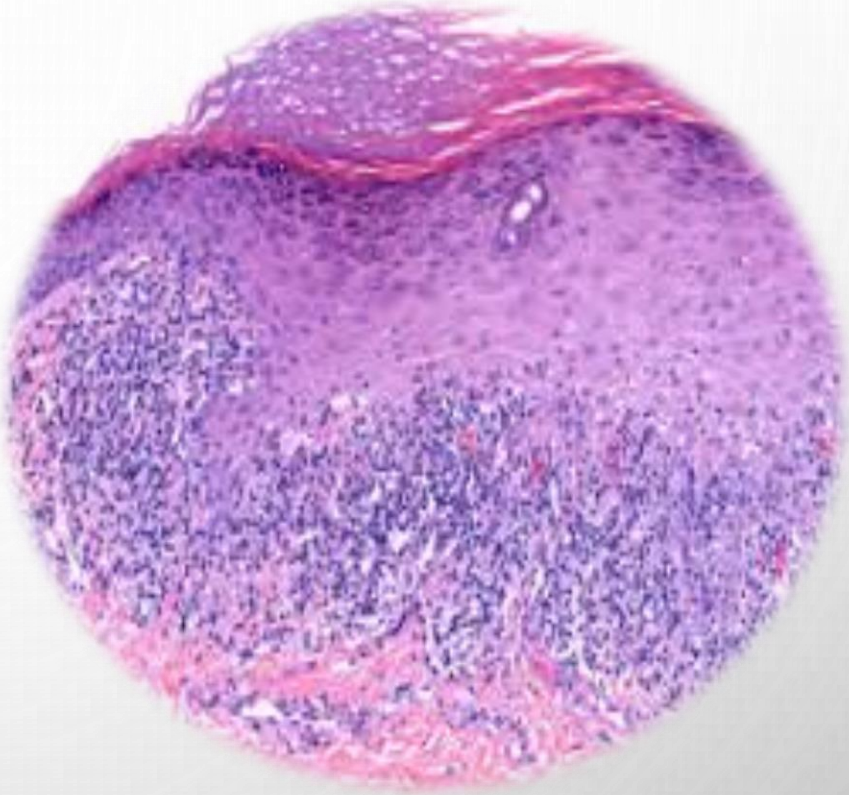




ERYTHROPLAKIA

HISTOPATHOLOGY:

- Exhibit an extensively thinned epithelium with areas of complete loss of rete peg formation and a dense infiltrate of T lymphocytes.
- This T lymphocyte infiltrate obscures the basement membrane and extends well into the middle and upper levels of the epithelium. Liquefaction of the basement membrane and destruction of the basal cells is present in most areas.
- Occasionally, subepithelial separation will be present. Often, the epithelium is lost, exposing the underlying connective tissue. The lymphocytes are confined to a narrow zone in the upper layers of the connective tissue..



MALIGNANT POTENTIAL OF EROSIVE LICHEN PLANUS

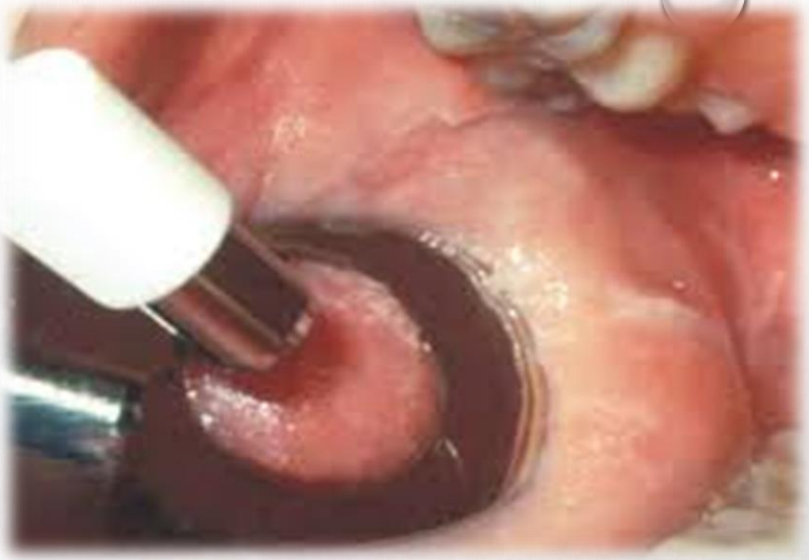
• Frequency of malignant transformation of Oral Lichen Planus varies between 0.3% to 3%.

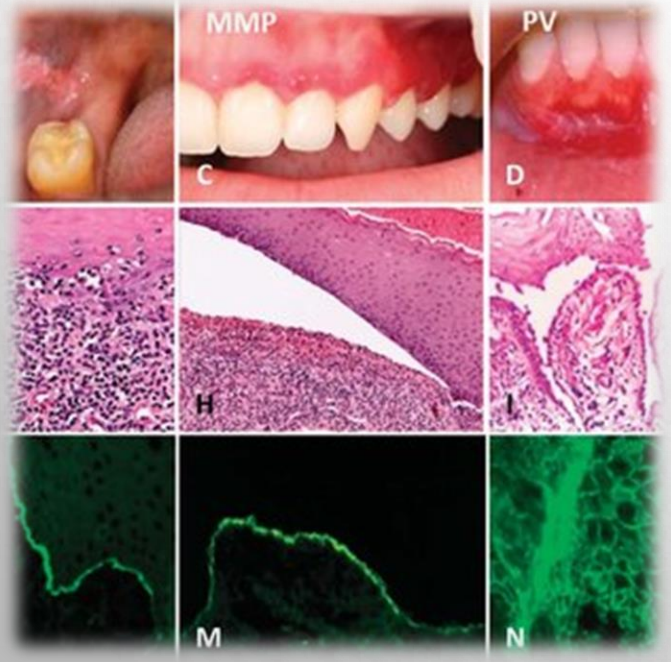
•The forms that commonly undergo malignant transformation are the erosive and atrophic formserosive and atrophic forms.

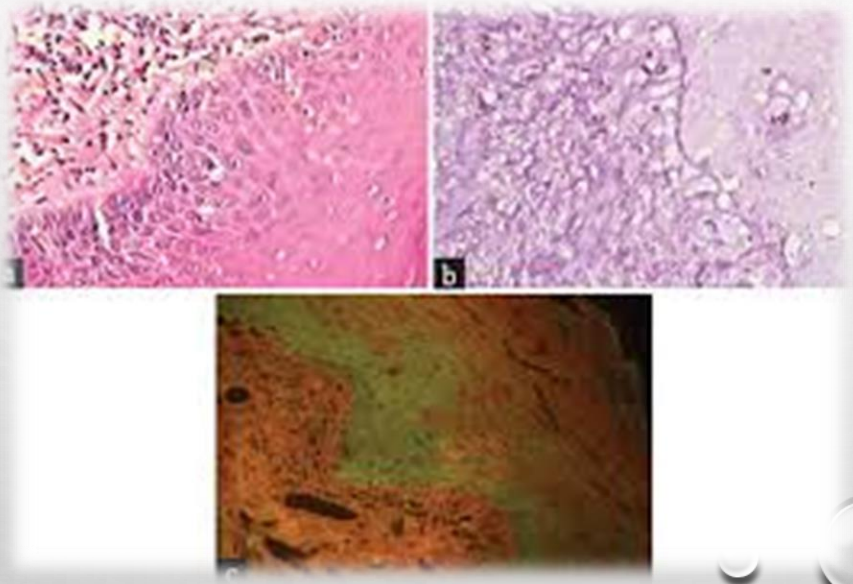
•The risk of malignant transformation of OLP to eidermoid carcinoma was higher, mostly in women & those infected with hepatitis Chepatitis C virus.virus.

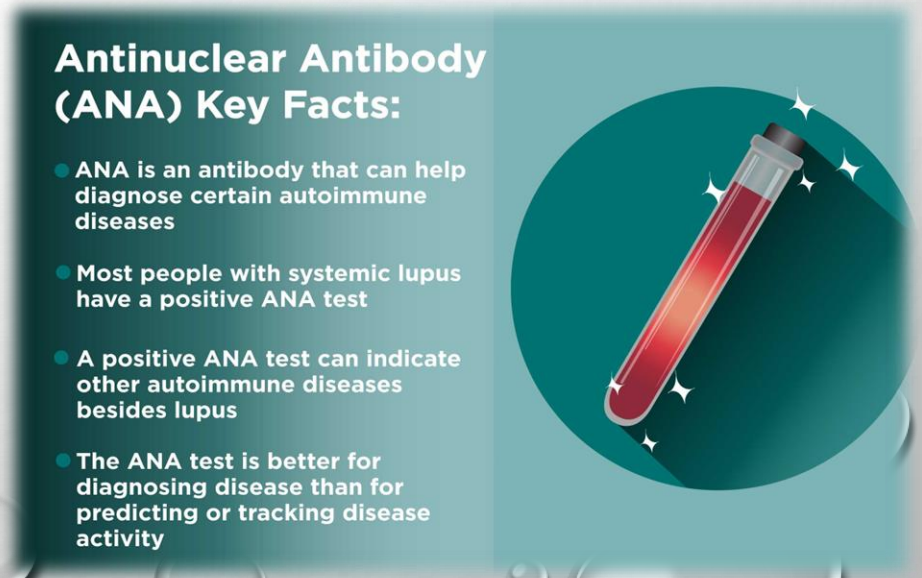
INVESTIGATIONS

- ✓ Incisional biopsy
- ✓ANA test
- ✓Immunoflourescent studies-Fluorescent dyes like FITC
- ✓Immunoglobulin assay
- ✓PAS staining



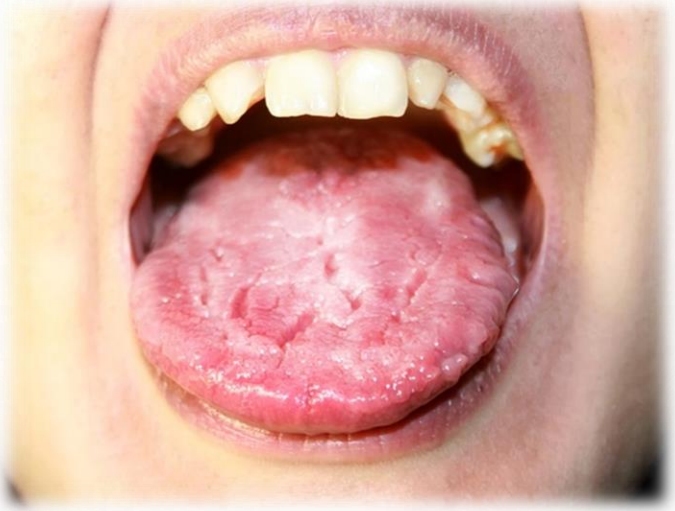


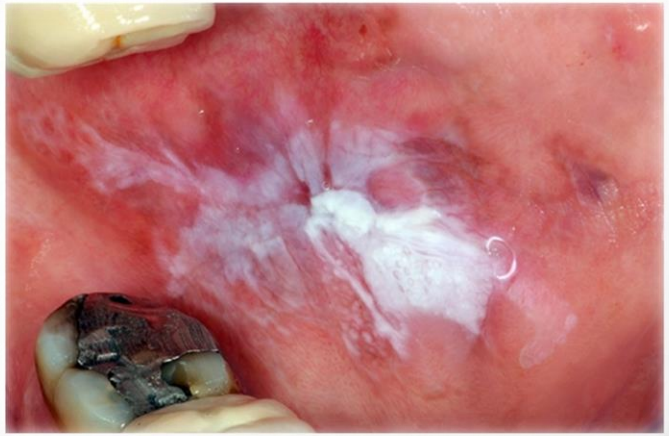


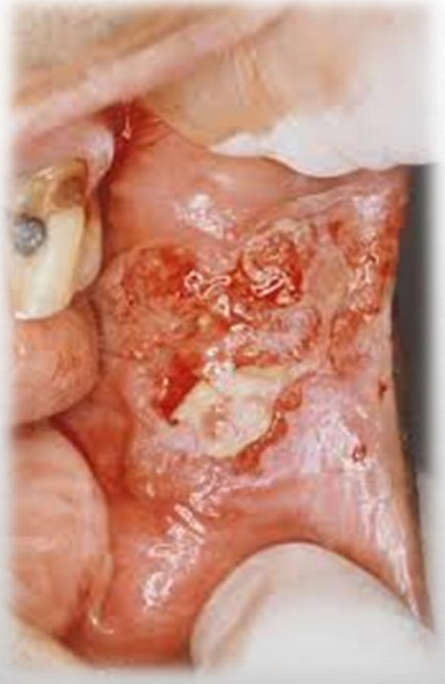


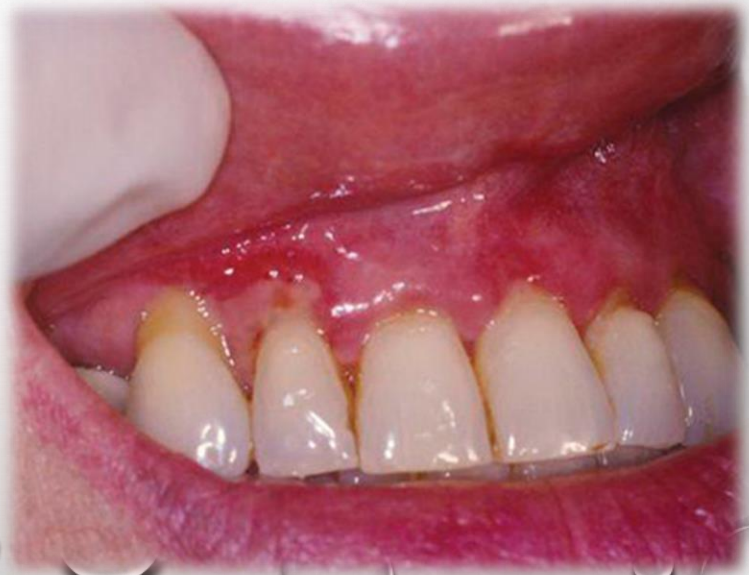
DIFFERENTIAL DIAGNOSIS

- ✓Lichenoid reactions
- ✓Leukoplakia
- ✓Candidiasis
- ✓Pemphigus
- ✓Cicatricial pemphigoid
- ✓Erythema multiforme
- ✓Syphilis
- ✓Recurrent aphthae
- ✓Lupus erythematosus
- ✓Squamous cell carcinoma









TREATMENT PLAN

No treatment for OLP is curative

Goal:

- Reduce painful symptoms
- Resolution of oral mucosal lesions
- Reduce risk of oral squamous cell carcinoma
- Improve oral hygiene

Eliminate exacerbating factors:

- Repair defective restorations or prosthesis
- Remove offending material causing allergy

Diet:

- Eliminate smoking and alcohol consumption
- Eat fresh fruit and vegetables (but avoid tomatoes and nuts)

Reduce Stress

TREATMENT PLAN

Medications:

Topical corticosteroids:

- 0.05% clobetasol proprionate gel
- 0.1% or 0.05% betamethasone valerate gel
- 0.05% fluocinonide gel
- 0.05% clobetasol butyrate ointment
- 0.1% triamcinolone acetonide ointment

Can be applied directly or mixed with Orabase.

Systemic Steroid Therapy:

Prednisone (for 70kg adult)

- 10-20mg/day for moderately severe cases
- As high as 35 mg/day for severe cases
- Should be taken in the morning to avoid insomnia
- Should be taken with food to avoid peptic ulceration

Azathioprine (Imuran)

- Inhibits synthesis of DNA
- 1mg/kg/d for 6-8 weeks

Methylprednisolone (Medrol Dosepak)

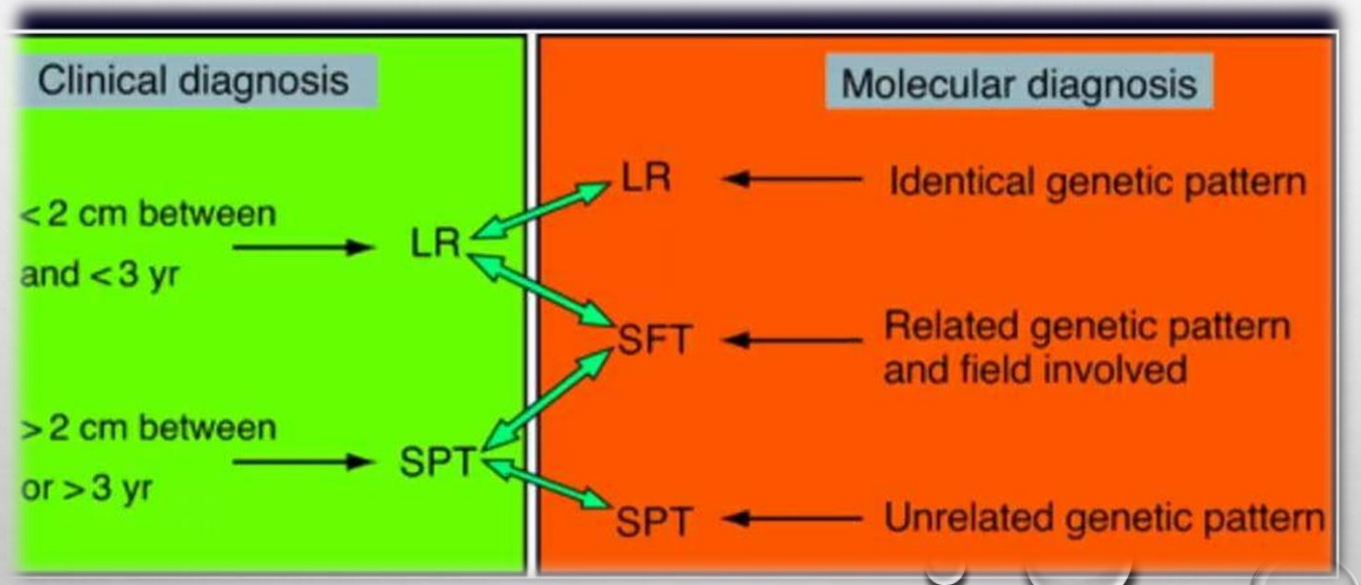
- to reduce pain and inflammation

Prophylactic use of 0.12% dhlorhexidine gluconate may help reduce fungal infection during corticosteroid therapy.

FIELD CANCERIZATION

•Field cancerization was first described in 1953 as histologically altered epithelium surrounding tumor samples taken from the upper aerodigestive tract.

•The concept of cancerization-supported by various clinical, histopathological and molecular evidence, in which clinically normal control epithelium was compared with adjacent tumour tissue and demonstrated similar subcellular or biochemical changes.



FIELD CANCERIZATION

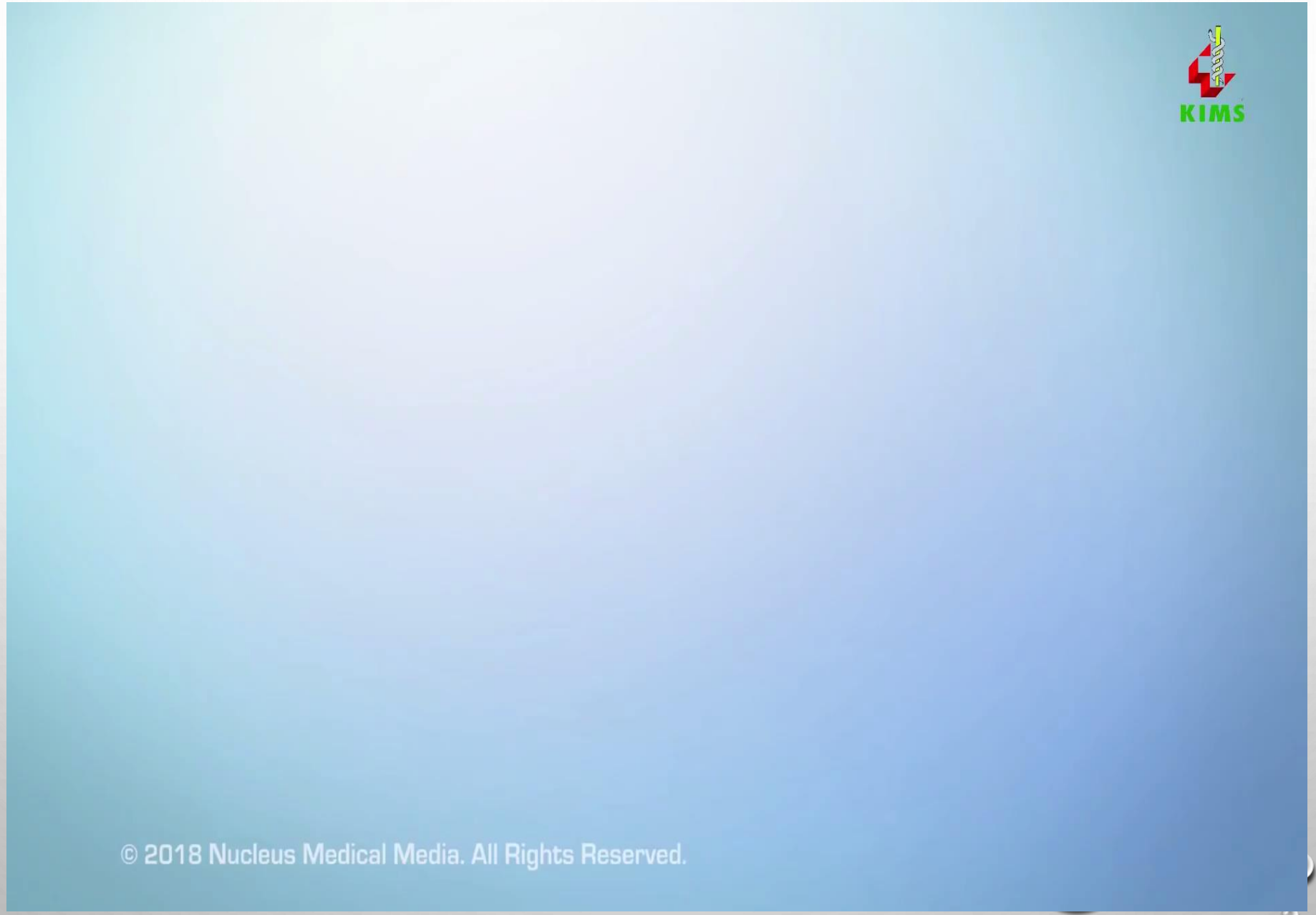
Understanding the terminology

•Second primary tumor is exclusive intended for second tumors which arise independently from the first tumor.

•The occurrence of a second tumor arising from the same field, it is always preferable to use the definition of second field tumor (SFT).

•The definition of local recurrence applies to lesions arising from the remaining tumor cells and local residues of the field which develop into cancer. Hence, a local recurrence is also a form of SFT.

TREATMENT OPTIONS (VIDEO)



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- ✓ Histochemical analysis of polarizing colors of collagen using Picrosirius Red staining in oral submucous fibrosis, Surekha Velidandla ey al, Journal of International Oral Health 2014; 6(1):33-38


thank
you