

# *Oral Mucosal Lesions*

*Dr Ajith D Polonowita*

*BDS, MDSc, FOMAA, MRACDS (Oral Med)*

*Oral Medicine Consultant & Senior Lecturer*

*Christchurch, NZ;*

*La Trobe, Bendigo, Australia*

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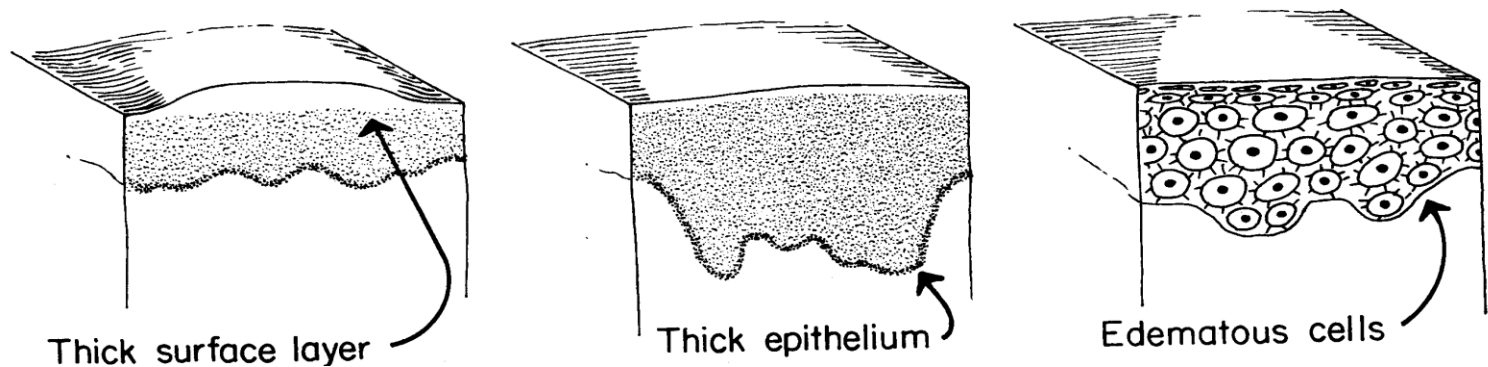
# White Lesions

- Congenital
  - Fordyce's spots
  - White sponge naevus
  - Dyskeratosis congenita
  - Leukodema
- Inflammatory
  - Candidosis
  - Hairy leukoplakia
  - Papilloma and other HPV-related lesions
  - Syphilitic leukoplakia
  - Koplik's spots (measles)
- Non-infective
  - Lichen Planus
  - Lupus erythematosus
- Neoplastic and possibly preneoplastic
  - Leukoplakia
  - Keratoses
  - Carcinoma
  - Submucous fibrosis
- Others
  - Burns
  - Materials alba
  - Drug-induced lesions
  - Grafts
  - Scars

# WHITE LESIONS

1. Benign chronic white mucosal lesions
2. Oral pre malignancy
3. Oral cancer

# BENIGN CHRONIC WHITE MUCOSAL LESIONS



- **LEUKOPLAKIA –**

“The term leukoplakia should be used to recognize white plaques of questionable risk having excluded (Other) known diseases or disorders that carry no increased risk of cancer”

- Diagnosis is clinical and does NOT imply pre-malignancy

# Benign Chronic White Lesions

- **COMMON**

Leukoedema

Frictional keratosis

Cheek-biting

Fordyce's granules

Stomatitis nicotina

Thrush

- **UNCOMMON**

Chemical burns

Hairy leukoplakia

White sponge naevus

Chronic candidosis syndromes

Psoriasis

Oral keratosis of

renal failure

Verruciform xanthoma

Skin grafts

# White Lesions

## Congenital

# White Lesions

## Fordyce's spots

- Sebaceous glands
- Often evident in children and adults
- No treatment required





# White Lesions

## **White Sponge Naevus**

- Hereditary disorder
- May involve any part of the oral mucosa
- Edges not well defined and merge with normal mucosa
- Superficial layers of epithelium are soft and of uneven thickness
  - shaggy or folded surface
- Usually bilateral

# White Lesions

Dyskeratosis congenita

Rare autosomal dominant

Affects keratin

May be premalignant?!

# White Sponge Naevus



# White Lesions

## Leukodema

- Particularly evident in people with racial pigmentation of the oral mucosa
- Translucent, milky whiteness of the mucosa with a slightly folded appearance
- Possibly due to local irritation
- Hereditary
- Variation on normal

# Leukodema

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# White Lesions

## Inflammatory

# White Lesions

## Keratosis

- Mechanical
  - friction
- Thermal
  - smokers, burns
- Chemical
  - chemical burns

# Frictional Keratosis

- Acute
  - blister and ulceration
- Chronic
  - epithelial thickening
  - hyperkeratinisation (like a callus)
  - sharp teeth, cheek-biting, ill-fitting dentures
- Treatment is by resolution of the source







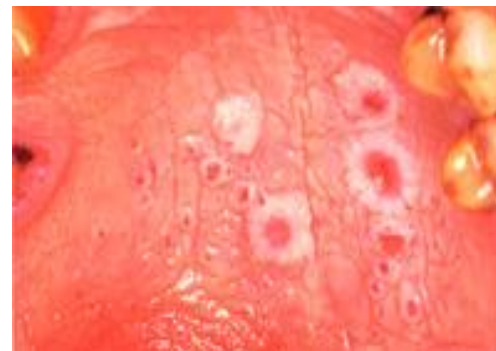
# Chemical Keratosis

- Chronic chemical insult
  - Aspirin burn
  - Tobacco
  - Betel nut
- Hyperkeratosis similar to chronic friction



# Nicotinic Stomatitis

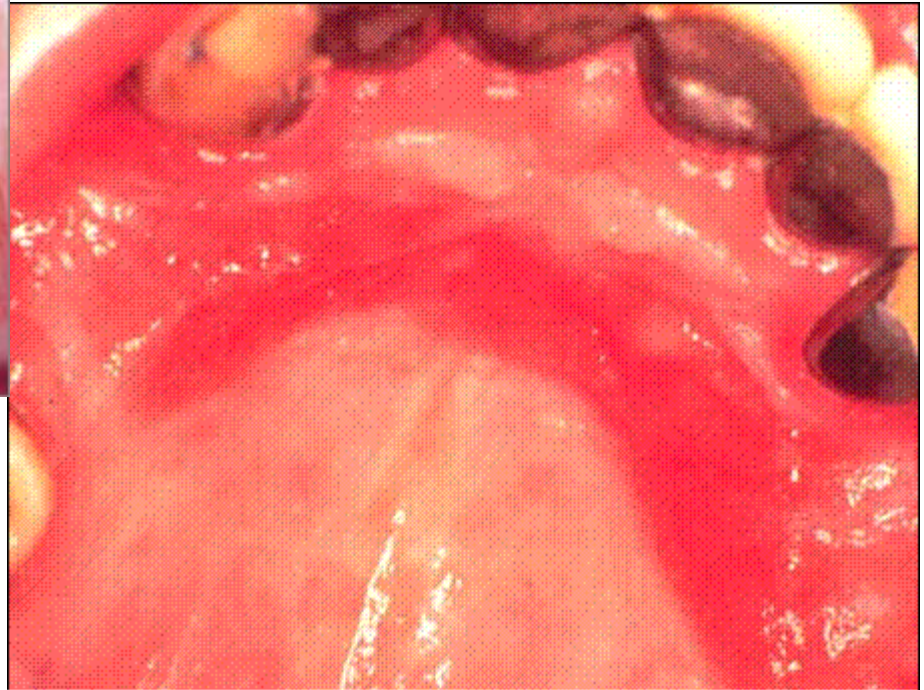
- Smoker's Palate, Smoker's Keratosis
- Develops in association with smoking, especially pipe-smoking
- Early Lesions
  - Palatal mucosa is greyish-white
  - Scattered red spots
    - openings of minor salivary gland ducts
- Advanced lesions
  - tessellated rough white epithelium
  - red, umbilicated duct orifices
- Reversible if smoking ceased
- Not pre-malignant (but an early warning sign)



# Nicotinic stomatitis



# Candida





# *Candida*



# Candida

- Fungal infection
- *C. albicans* most common, but also *C. glabrata*, *C. tropicalis* and *C. krusei*
- notorious opportunistic pathogen
- Carriage rate ~ 20% of normal oral flora
- Harmless commensal in the mouths of nearly 50% of the population, becomes an opportunistic pathogen following a disturbance to oral flora in decreased immunity
- Increases to ~ 40% in presence of medical conditions, pregnancy, tobacco smokers and denture wearers
- Children: peak carriage ~ 45% at ~18 months
- Primary site is dorsum of tongue
- Mechanism which they induce disease not really known
  - secreted enzymes, toxins, antigenic response

# Candida

- Factors pre-disposing to infection:
  - Local
    - mucosal trauma, denture wearing, tobacco smoking
  - Age
    - extremes
  - Drugs
    - broad spectrum AB's, steroids, immunosuppressant agents
  - Xerostomia
    - drugs, radiotherapy, Sjogren's syndrome
  - Systemic disease
    - HIV, Fe deficiency, diabetes, leukaemia, some anaemia's



# Candida

- Three most common presentations are:
  - Acute Pseudomembranous
    - ‘thrush’
    - thick white coating on affected mucosa, wipes off leaving red surface
    - resembles milk-curd
    - Caused by drugs (corticosteroids, Abs, immunosuppressants) , xerostomia, immune defects
    - Dx- smear with PAS staining
    - Mx- treat predisposing factors, antifungals
  - Chronic atrophic
    - ‘denture stomatitis’, ‘median rhomboid glossitis’
    - erythema
    - related to denture hygiene

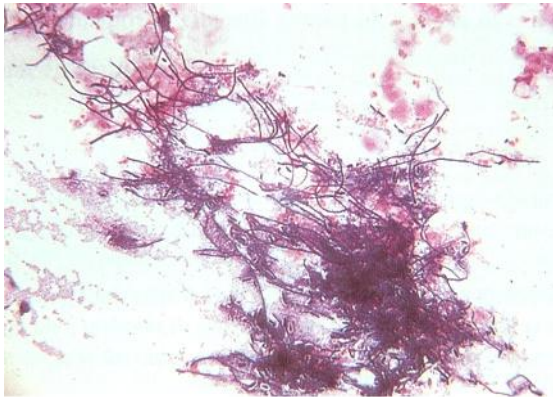
# Candida

- Angular cheilitis
  - co-infection with *S. aureus*
  - soreness, erythema, fissuring at the corners of the mouth
  - ? nutritional deficiencies
    - riboflavin, folic acid, B<sub>12</sub>
- Chronic mucocutaneous candidosis- number of rare congenital syndromes with persistent candidosis affecting the mouth, skin, nails and other areas.
- Candidal leukoplakia (chronic hyperplastic candidosis)- smoking tends to predispose; typically dorsum of tongue and post commissural buccal mucosa. rough irregular surface. Potentially malignant.

# Thrush (Acute candidosis)



- Wipes off
- Adult male, no predisposers
  - ? HIV

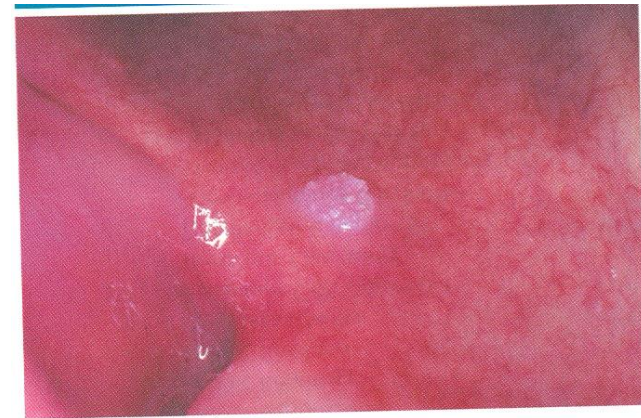


# Hairy Leukoplakia

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  - co-infection with *S. aureus*
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    - riboflavin, folic acid, B<sub>12</sub>
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# Papilloma

- Squamous papilloma is a benign proliferation of stratified squamous epithelium resulting in a papillary or verrucous mass
- Possibly induced by HPV (more than 100 types). 81% of “normal adults have buccal epithelial cells containing at least one type of HPV
- Benign lesion simply excise



# Syphilitic leukoplakia

- Rare
- Associated with tertiary syphilis
- Typically dorsum of the tongue
- High risk of malignant change
- Primary (Chancre- at site of inoculation; papular lesion with ulceration); Secondary (disseminated- occurs 4-6 weeks later; mucous patch sensitive white areas); Tertiary (gumma- active site of granulomatous inflammation)
- Congenital syphilis- **Hutchinson's triad**  
( Hutchinson's teeth, Ocular interstitial keratitis, eighth nerve deafness)

# White Lesions

Non infective inflammation



# Lichen Planus





# LICHEN PLANUS – 'Old ladies & white lace'

65% female > 40 years

Long lasting

Striae, atrophic,  
erosions, plaques

Buccal > tongue > gingival

Bilateral, symmetrical

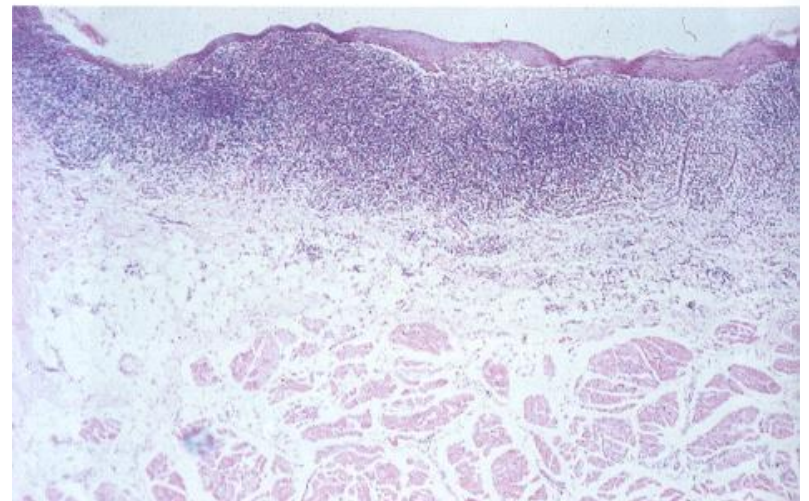
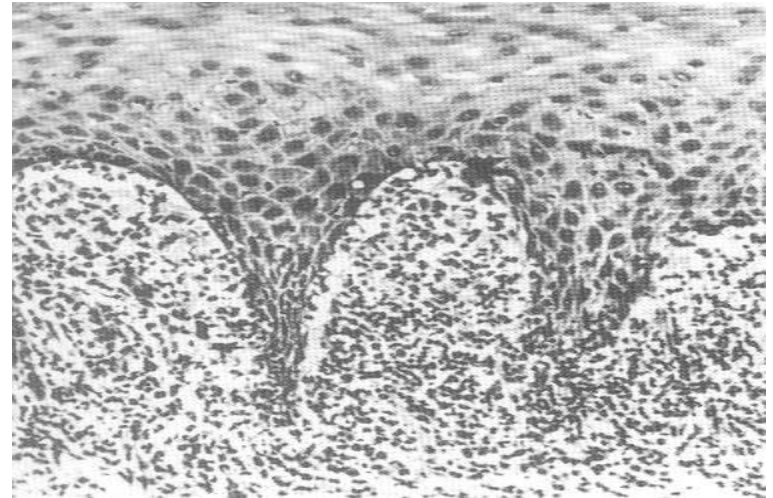
15% have cutaneous



**WATCH LICHENOID!**

# *Lichenoid reactions*

- NSAIDs
- Thiazide diuretics
- Penicillamine
- ACE inhibitors







# Systemic Lupus Erythematosus (SLE)



Fig.1



Fig.2



Fig.3



Fig.4

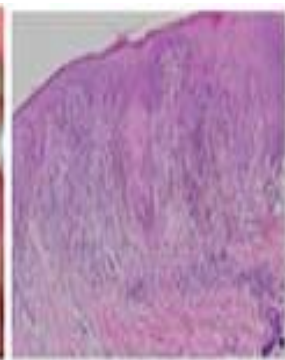


Fig.5

# White Lesions

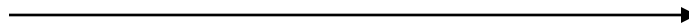
Neoplastic and possibly  
pre neoplastic

# ORAL PREMALIGNANCY

## 1 Malignant potential

White

*least*



Red

*greatest*

## 2 Variable risk

## 3 DYSPLASIA is best predictor

# Malignant potential

- Erythroplasia *Very high*
- Dysplastic leukoplakia *High*
- Speckled leukoplakia *High*
  
- Smoker's keratosis *Low*
- Chronic candidosis *Low*
- Lichen planus *Low*

# Risk Factors

## HISTORY

1. Tobacco products\*\*
2. Alcohol
3. Family Hx

## CLINICAL

## FEATURES

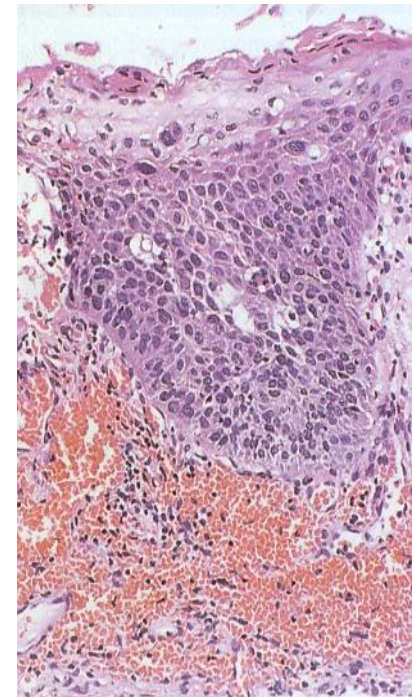
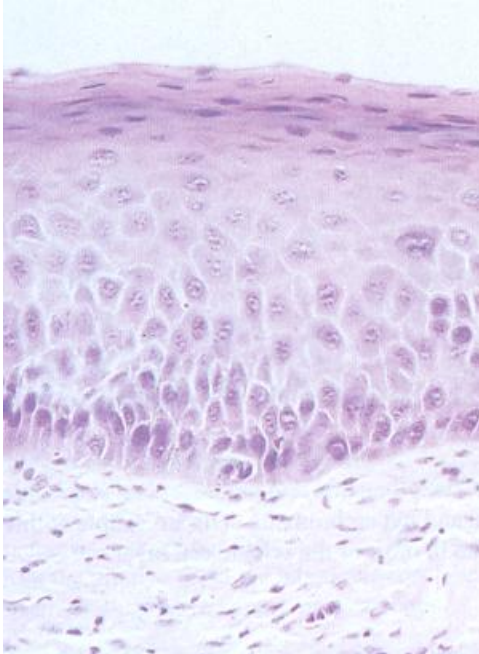
- Ageing
- Female\*\*
- Reddening; speckling
- Nodules, ulceration
- Site\*\*
- Large lesions
- Long-standing lesions
- Change in appearance

## HISTOLOGY

- Degree of dysplasia



# DYSPLASIA



# Leukoplakia



# Dysplasia, OMSCC

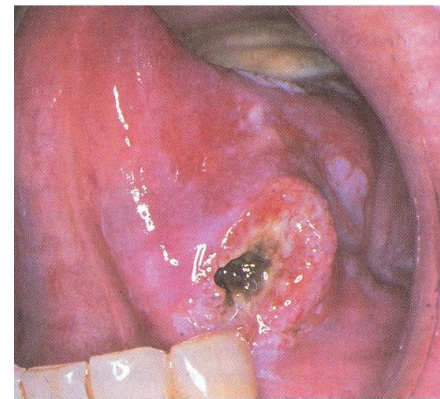
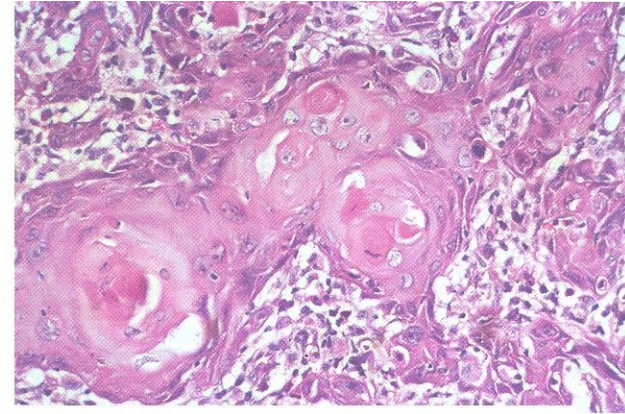




# Dysplasia, OMSCC

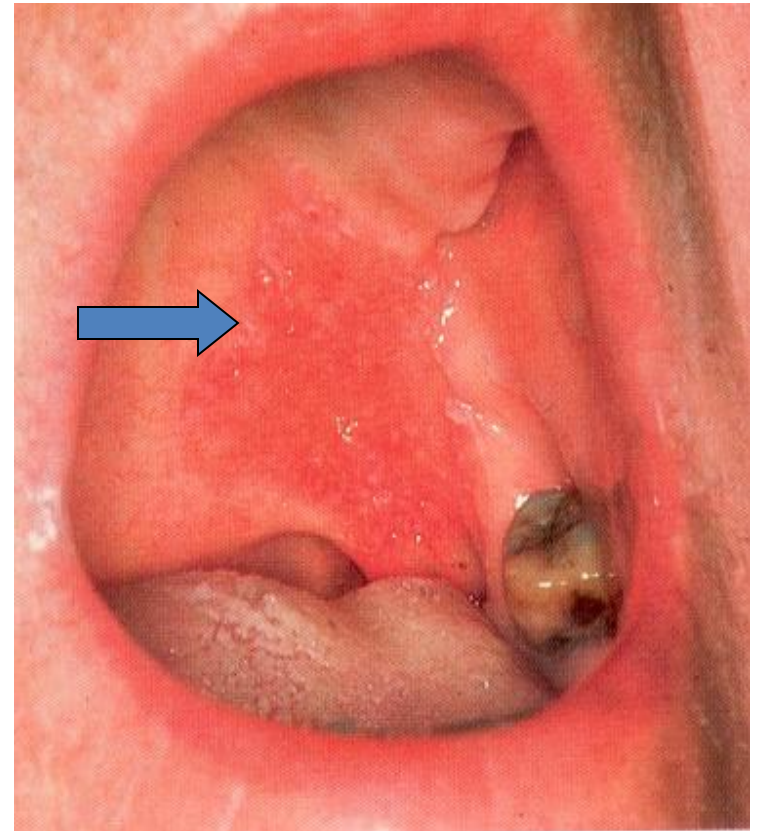


Chronic hyperplastic  
candidosis



# Erythroplakia

- Well-defined
- Depressed
- Velvety
- Uncommon
- Often malignant at first biopsy





# Leukoplakia



# CHRONIC HYPERPLASTIC CANDIDOSIS

## Candidal leukoplakia

- Male adult
- Tough, adherent plaque
- Intra-cellular *Candida albicans*
- Resistant to Tx



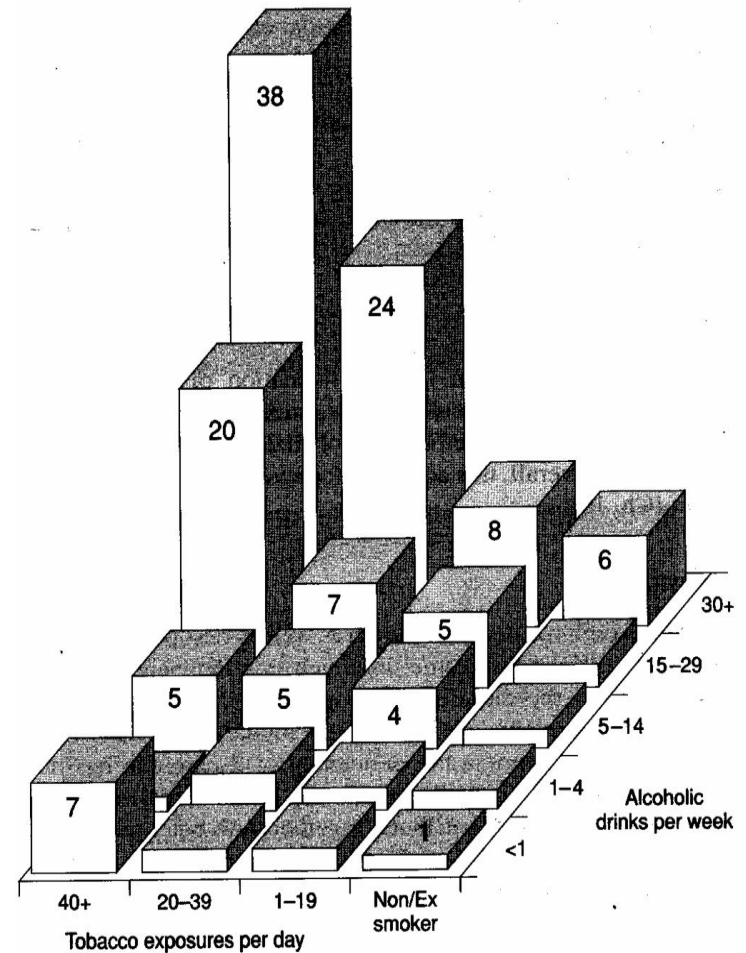
# Principles of management of dysplastic lesions

- Stop any *associated habits*
- Treat *Candida* and *iron deficiency*
- *Biopsy*
- *Assess risk* of premalignant change on clinical and histological findings
- Consider *ablation* of individual lesions
- Maintain *observation*

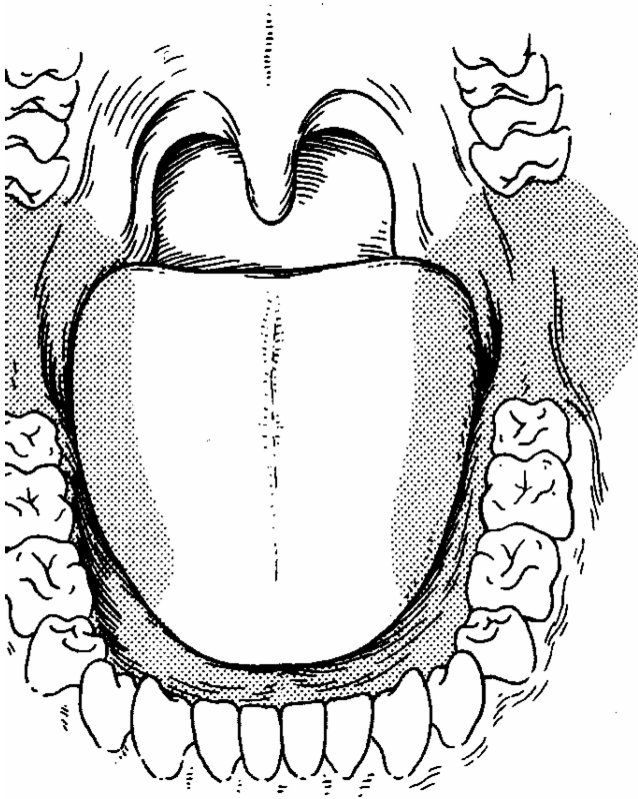


# ORAL CANCER - SCC

- Possible carcinogens
  - Tobacco
  - Alcohol
  - Areca nut
- Sunlight
- Infections
  - candidosis
  - viral
- Mucosal disease
  - dysplasia
  - Lichen planus
  - OSF
- Genetic
  - dyskeratosis
  - congenita

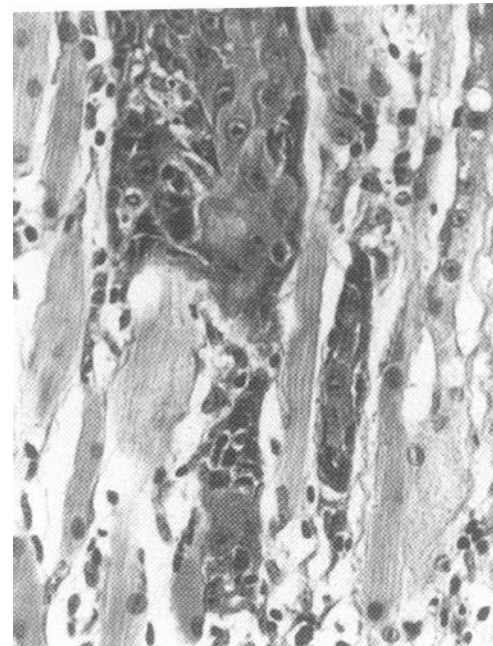
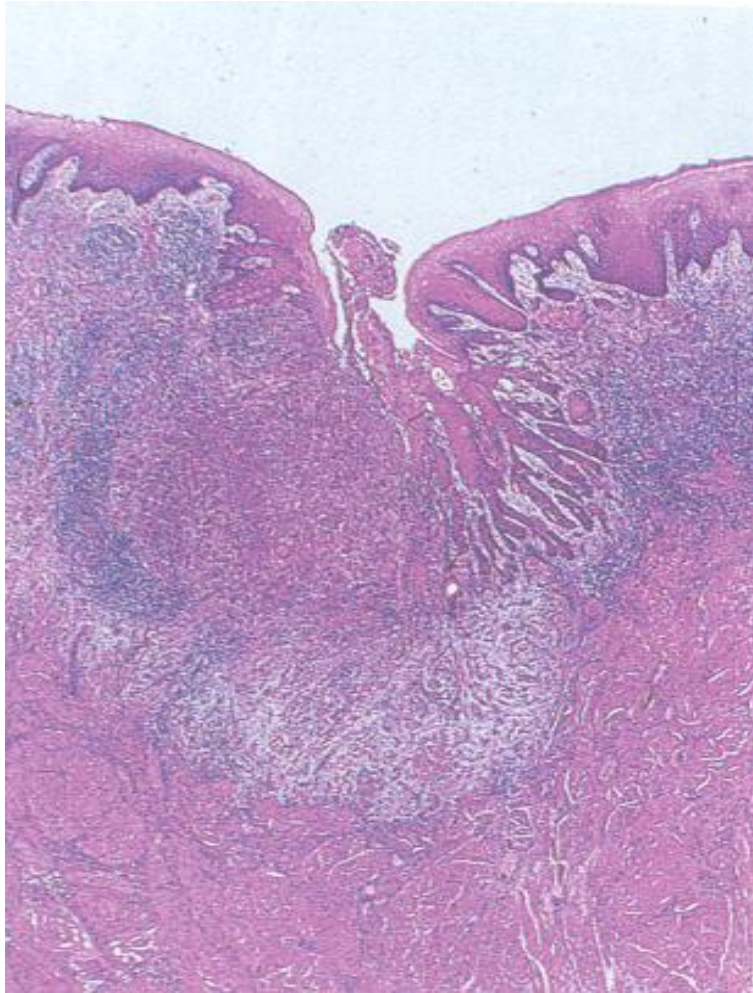


# HIGH-RISK SITES



- **>70%** oral cancers in shaded area  
Shaded area is **20%** of the mouth





# Oral cancer

- Early – white or red patches, or shallow ulcer. PAINLESS
- Later – ulcer with rolled edges, indurated, painful
- 95% are well- or moderately well-differentiated SCCa
- Spread – direct invasion and lymphatics Submandiular and jugulo-digastric nodes most frequently involved
- Prognosis deteriorates sharply with local spread and nodal involvement



# Ulceration

- Traumatic
  - biting, sharp cusps, ill-fitting appliances
  - cause obvious
  - irregular border



*Traumatic ulcer on lateral  
border of tongue*

# Ulcers

- Recurrent Aphthous Stomatitis (RAS)
  - common, 11-20% of the general population
  - immune-mediated
  - females
  - ulcers
    - have regular border
    - central area of necrotic tissue
    - background inflammation
  - May need symptomatic relief

# RAS

## Systemic Disorders associated with RAS

- Behcet's syndrome
- Celiac disease
- Cyclic neutropenia
- Nutritional deficiencies (Fe, Folate, Zn, Vit B)
- IgA deficiency
- Immunocompromised (HIV)
- Inflammatory Bowel disease
- MAGIC syndrome (Mouth and Genital Ulcers with Inflamed Cartilage)
- PFAPA syndrome ( periodic fever, Aphthous stomatitis, Pharyngitis, Cervical adenitis)
- Reactive arthritis
- Sweet's Syndrome
- Ulcus vulvae acutum



# RAS

- Minor
  - 80% of cases
  - affects non-keratinised areas
  - < 10mm diameter
  - heal without scarring
  - 7 - 10 days to heal



# RAS

- Major
  - may affect keratinised areas
  - > 10mm diameter
  - scar
  - 4 - 6 weeks to heal



# RAS

- Herpetiform
  - multiple small, pin-head sized ulcers
  - 1-2 mm diameter
  - may coalesce
  - may scar
  - 2 - 3 weeks to heal



# RAS

## Behcet's syndrome

- RAS
- Ocular lesions  
(Inflammation of the uvea)
- Genital ulceration
- Eastern Mediterranean and Asian
- genetic and environmental (microbial) factors



# Red lesions

- Localised red patches
  - Denture related stomatitis ( Candida, allergy)
  - geographic tongue
  - Lichen planus
  - Erythroplasia
  - Purpura
  - Telangiectasia
  - Angiomas
  - Kaposi's sarcoma
  - Burns
  - Lupus erythematosus
  - Avitaminosis B12
  - Drugs

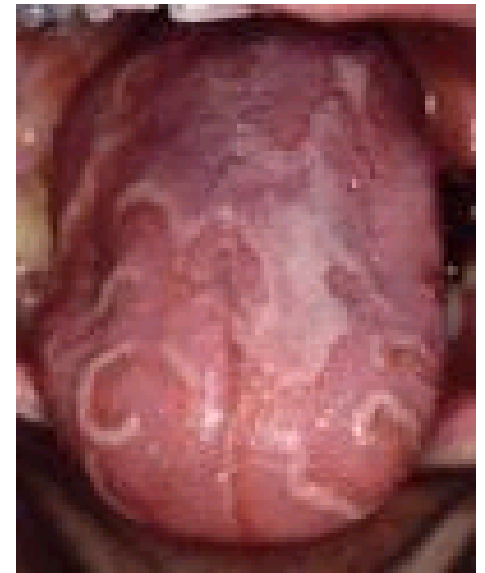
# Red lesions

- Generalised redness
  - candidosis
  - Avitaminosis B12
  - Irradiation and chemotherapy
- mucositis
  - Mucosal atrophy
  - Polycythemia

# Benign migratory Stomatitis

- Benign migratory glossitis (geographic tongue)
- ~1% population
- Irregular, depapillated red areas
- Anterior 2/3 tongue
- Loss of filiform papillae
- Serpiginous margin outlined by a thin white band
- Periods of regression and reappearance
- Usually symptomless
- May affect lips and cheeks

# Benign migratory Stomatitis



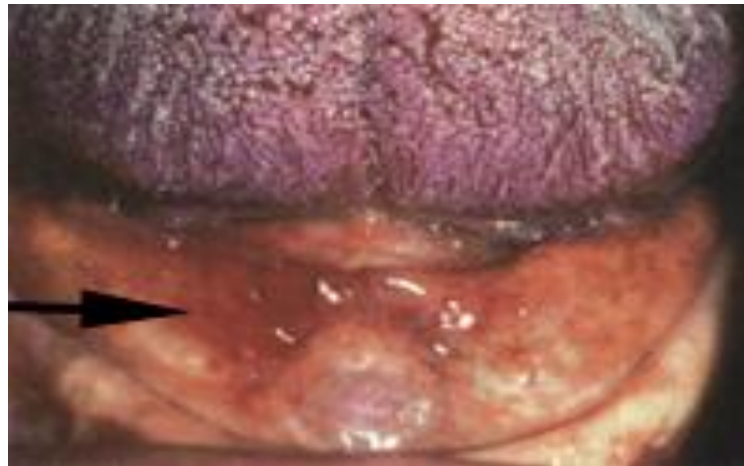


# Erythroplakia

“Bright-red, velvety plaque which cannot be categorized as any other lesion” –  
WHO 1978

- May be homogenous with well-defined outline, or intermingled with patches of leukoplakia (*speckled leukoplakia*)
- Higher rate of malignant transformation than leukoplakia
- Speckled types have worse prognosis

# Erythroplakia



# Pemphigoid

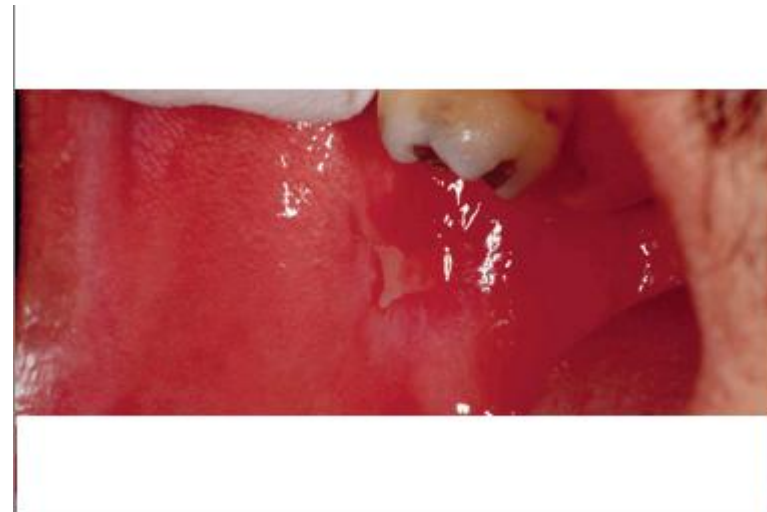
- 60 yrs +
- Female
- Skin / mucous membrane disorder
  - conjunctiva, nose, larynx, pharynx, oesophagus, genitals
- Fluid-filled blisters form after minimal trauma
- Usually presents as ulcers as blisters burst due to trauma in the oral cavity
- Auto immune disease affecting basement membrane zone adhesion

# Pemphigus

- 60 yrs +
- Female
- Skin / mucous membrane disorder
  - Oral mucosa affected in 95% patients with pemphigus vulgaris
- Fluid-filled blisters form after minimal trauma
- Usually presents as ulcers as blisters burst due to trauma in the oral cavity leaving a red erosion

# Pemphigus

- Autoimmune disease affecting intra epithelial adhesion, may be drug induced (captopril, penicillamine) or related to internal malignancy
- Dx- Biopsy and immunofluorescence , deposition of IgG, C3 intra epithilially, Serum IgG levels may occur.
- Mx- High dose corticosteroids, azothiapriner, mycophenolate mofetil, gold



# Infections

- Usually viral
- *Herpes* most common
- Hand, foot and mouth
- Varicella zoster
- Usually self-limiting

# Infections





# Erythema Multiforme

- Blistering, ulcerative condition
- Unknown aetiology
- Probably immune-mediated
- 50% cases preceding infection (HSV, M.Pneumoniae)
- Drug Reaction





# Erythema Multiforme

- Young Adults 20's / 30's
- Men > Women
- Prodromal Symptoms
  - Cough, fever, malaise, headache
- Disease lasts 2 – 6 weeks
- Self limiting
- 20% patients experience recurring episodes

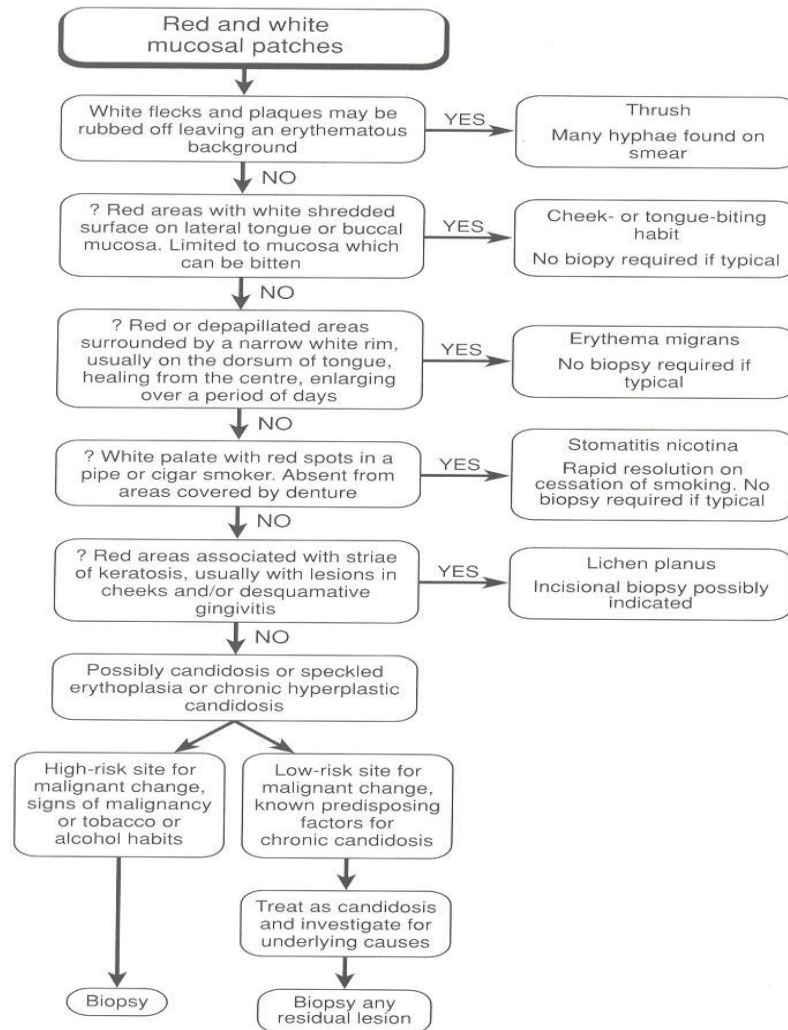


# Erythema Multiforme

- 50% cases develop skin lesions
- Target or bull's eye lesions
- Oral lesions
  - Erythematous patches
  - Undergo necrosis and become large shallow erosions and ulcerations with irregular borders
  - Crusting of the lips
  - Painful

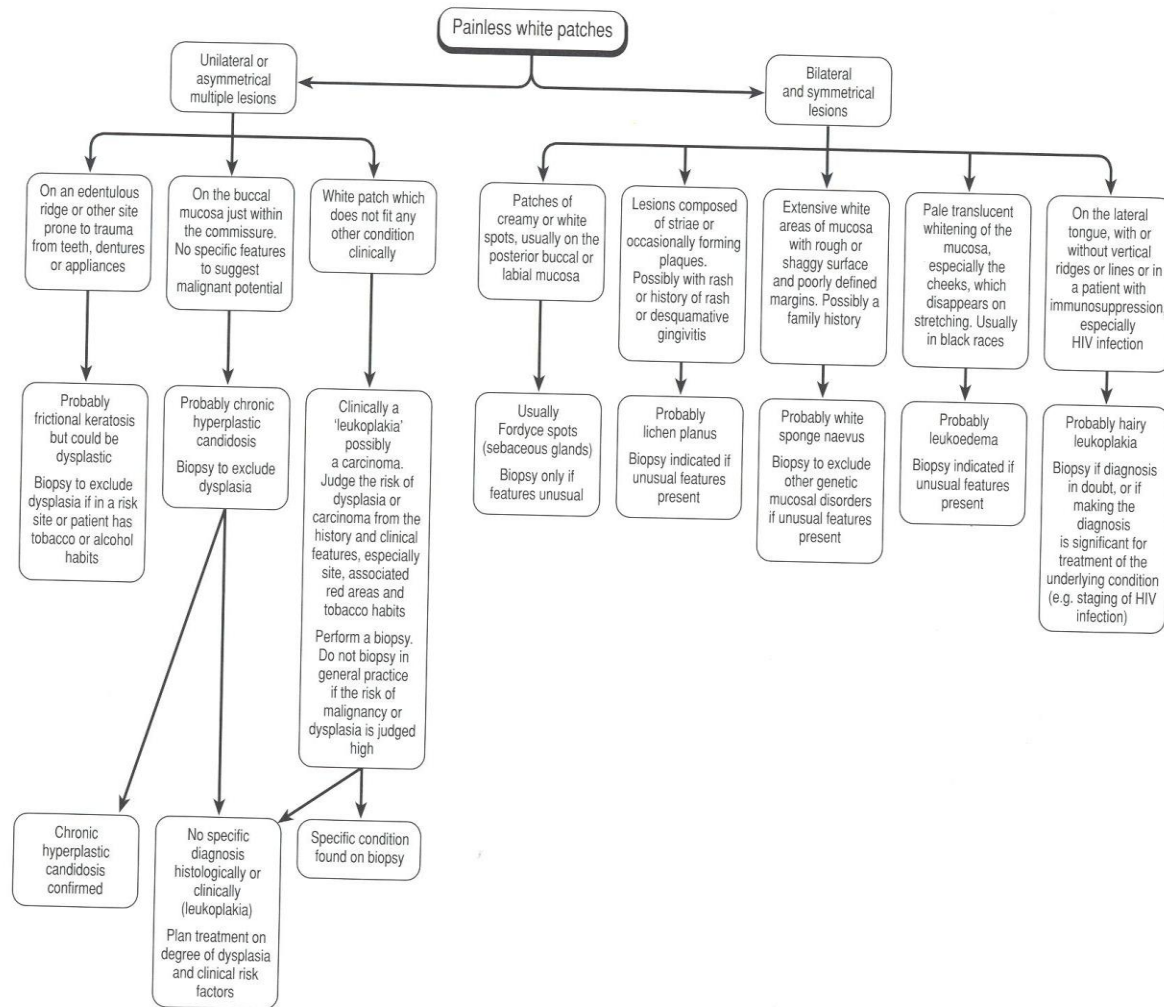




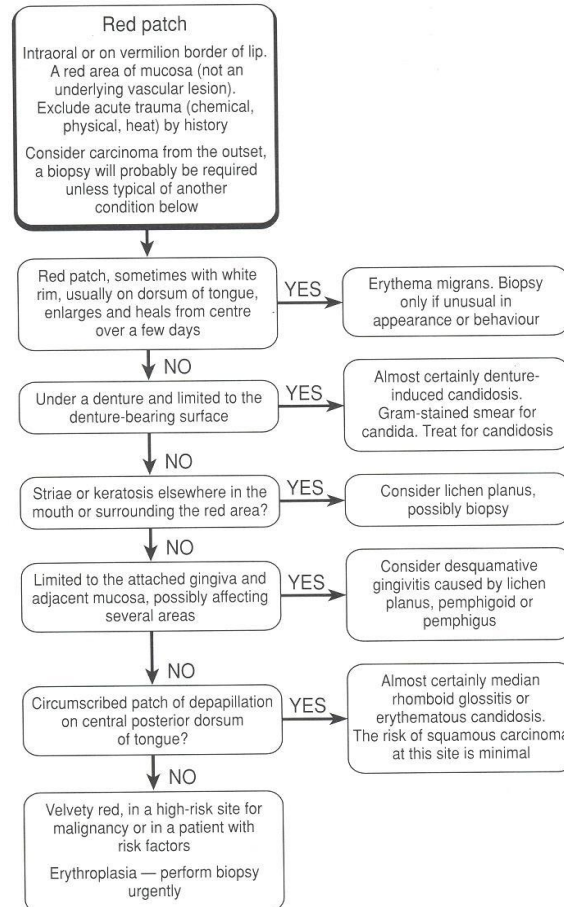


*From Cawson & Odell*





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