

NEOPLASMS OF THE SURFACE EPITHELIUM

(KERATINOCYTES)

Papillary
Lesions

Keratinocyte
Proliferations

Melanotic
Lesions



Precancerous
Lesions

Carcinomas

Melanomas

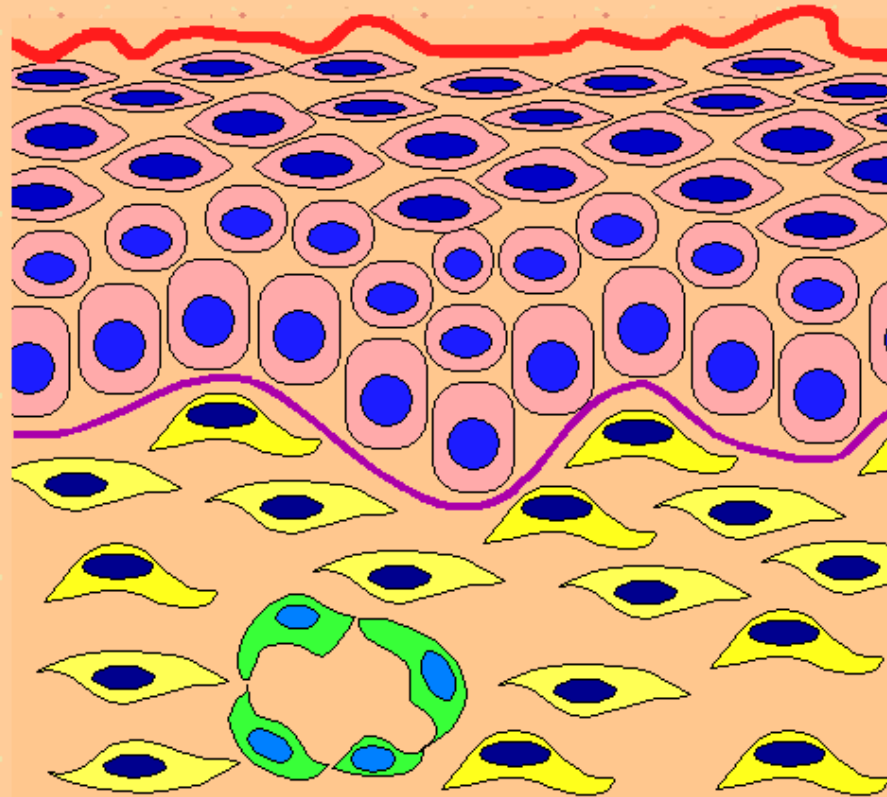
Normal Mucosa

Keratin layer

Spinous layer

Basal layer

Submucosal
Connective
Tissues



Epithelial Lesions

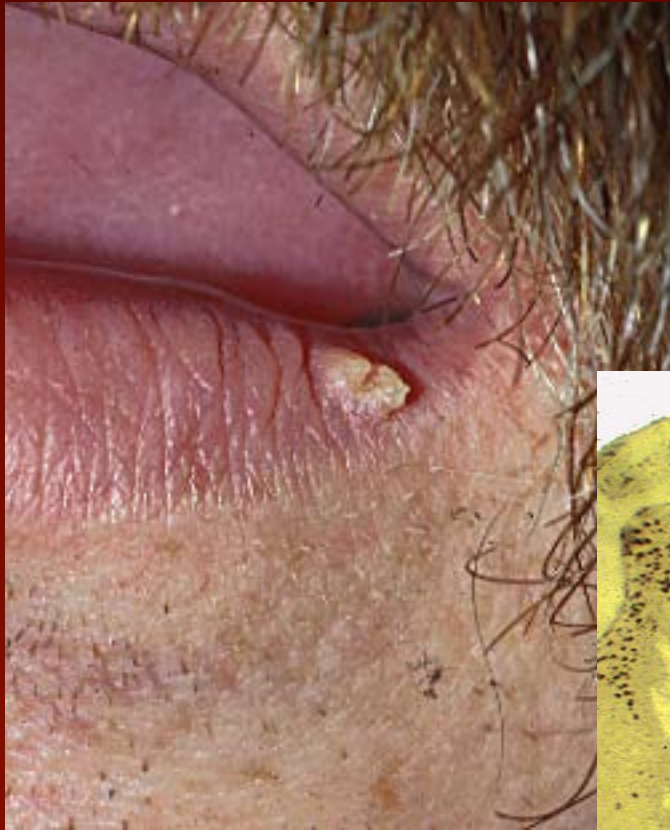
- Benign Surface Papillomas
- Premalignant Lesions
 - Oral
 - Skin
- Carcinoma
 - Squamous Cell, Verrucous
 - Basal Cell
- Benign Nevi
- Malignant Melanoma

Benign Oral Papillary and Verrucous Tumors

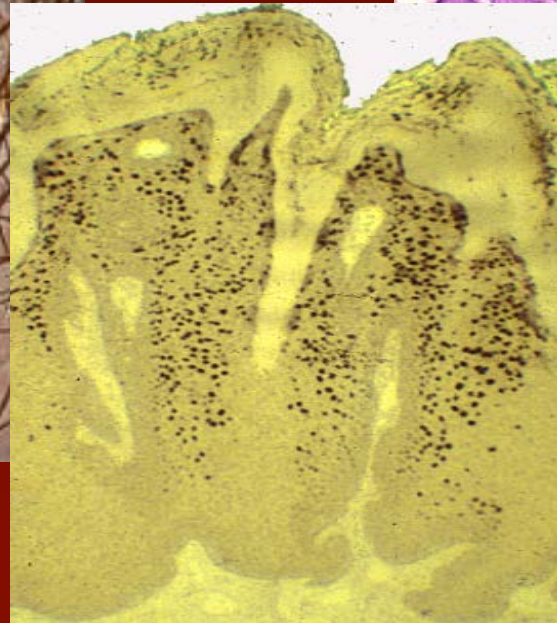
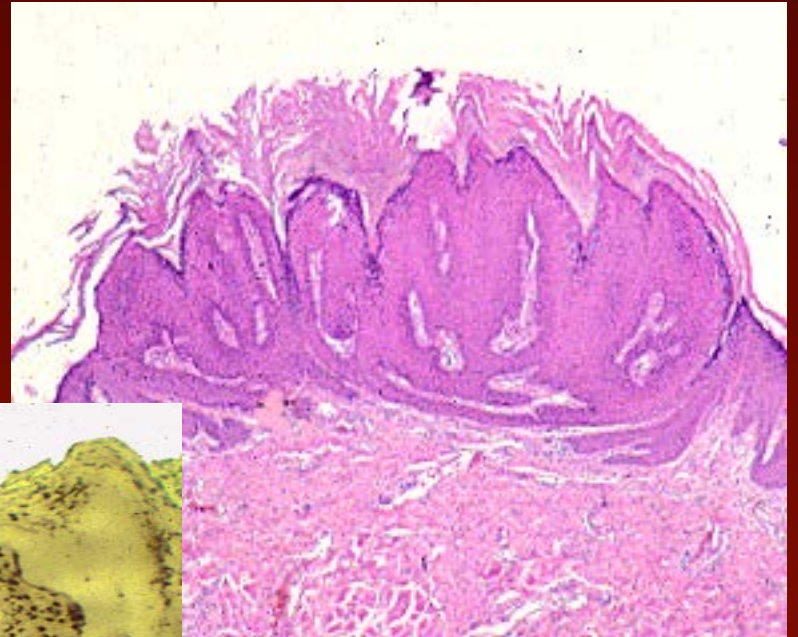
- Verruca vulgaris - HPV 2,4
- Squamous papilloma - HPV 6,11
 - solitary
- Condyloma acuminatum - HPV 6,11
 - Multiple
- Keratoacanthoma HPV ?
- Focal Epithelial Hyperplasia (Heck disease)
 - HPV 13,32
- Warty Dyskeratoma

Verruca vulgaris

- Clinical



- Histopath and DNA

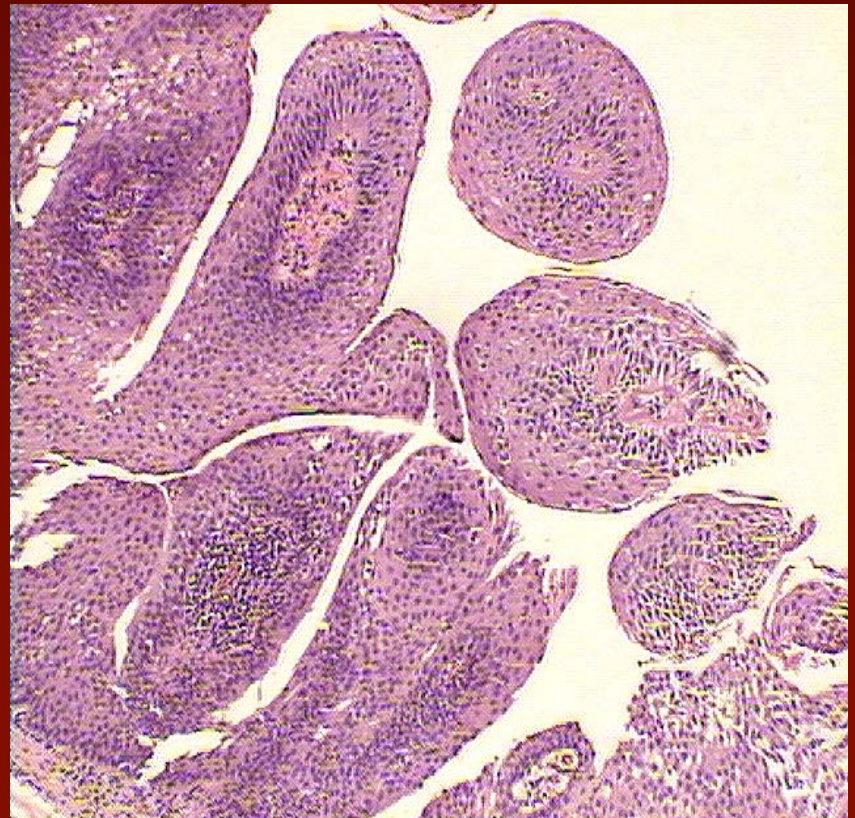


Squamous Papilloma

- Clinical, Gross

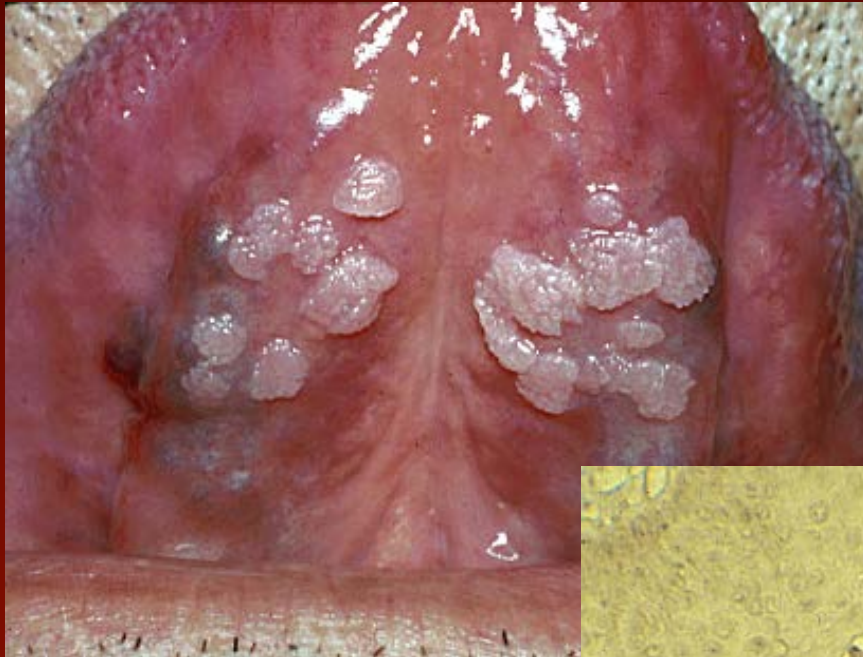


- Histopathology

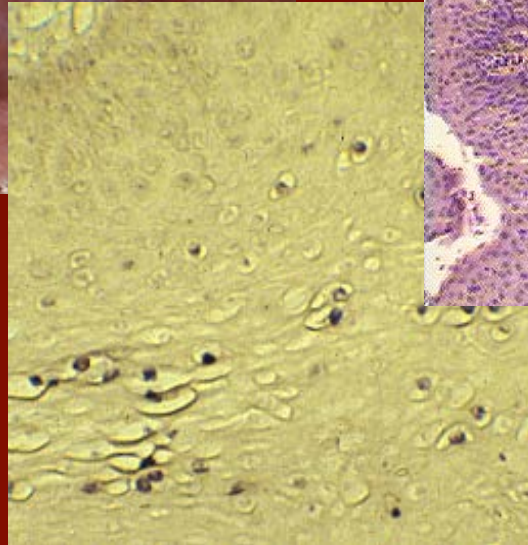
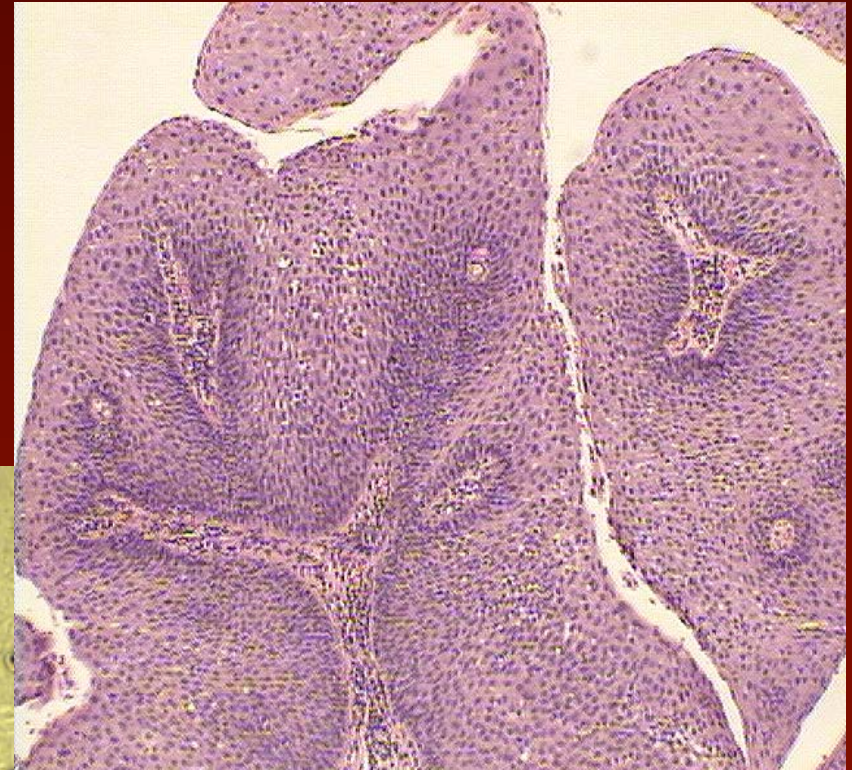


Condyloma Acuminatum

- Clinical



- Histopath & DNA



Condyloma



Focal Epithelial Hyperplasia

Heck Disease

- Predominantly a childhood HPV disease
- Multifocal papules and nodules, lips and buccal mucosa
- HPV 13, 32, viruses that only cause oral mucosal flat warts
- The phenotype may be seen in HIV infected patients
- Spontaneous regression occurs in 6-12 months without treatment
- Microscopic: Dome shaped exophytic proliferations of SSE, marked acanthosis, mitosoid (mitotic-like) bodies found in the mid-spinous layer

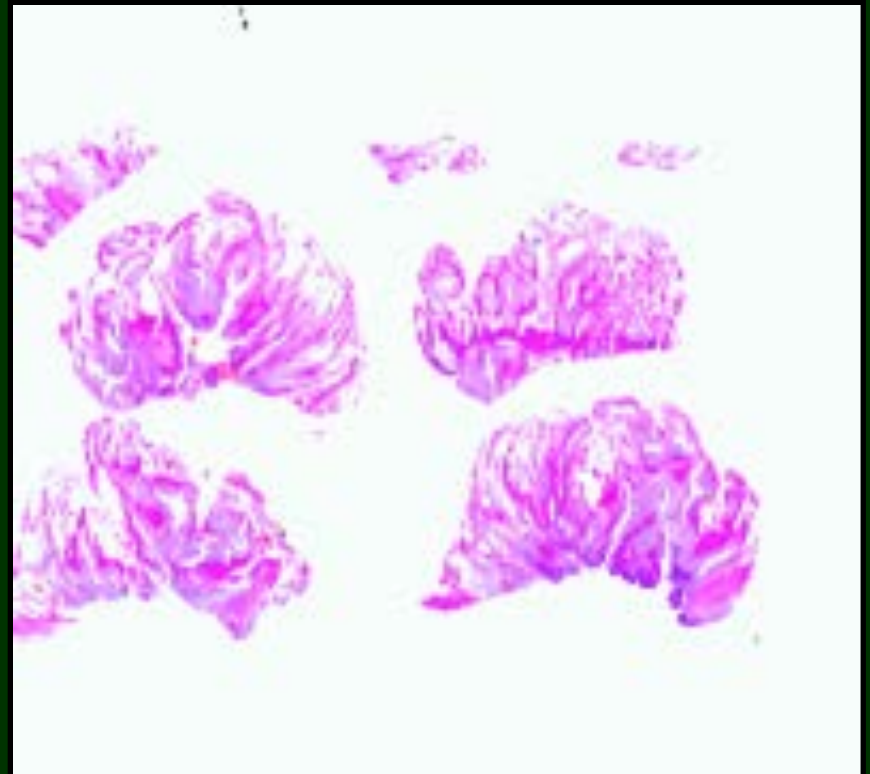
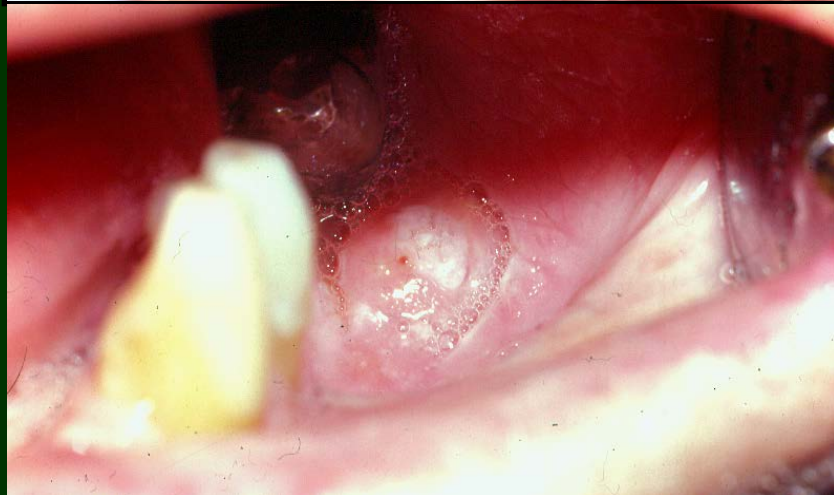
FEH in HIV+ Subjects



Keratoacanthoma

- A verrucous well circumscribed tumor of skin with self-limited growth
- Documented cases of spontaneous regression
- Microscopic: Abrupt cup-like borders, marked parakeratosis and acanthosis without cytologic atypia
- Treatment: simple excision
- Cases with atypia should be considered low grade squamous carcinomas

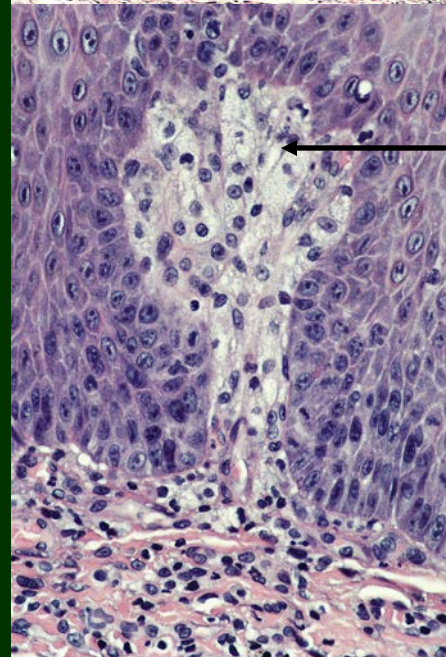
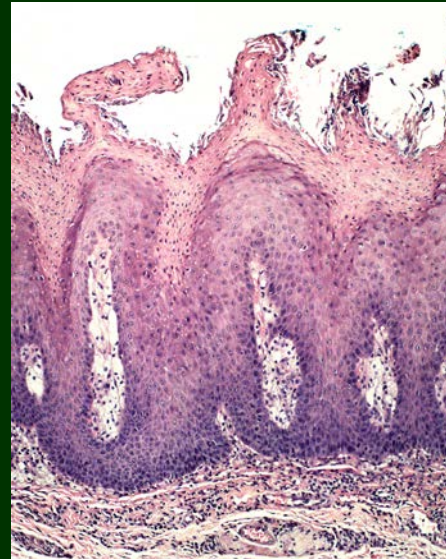
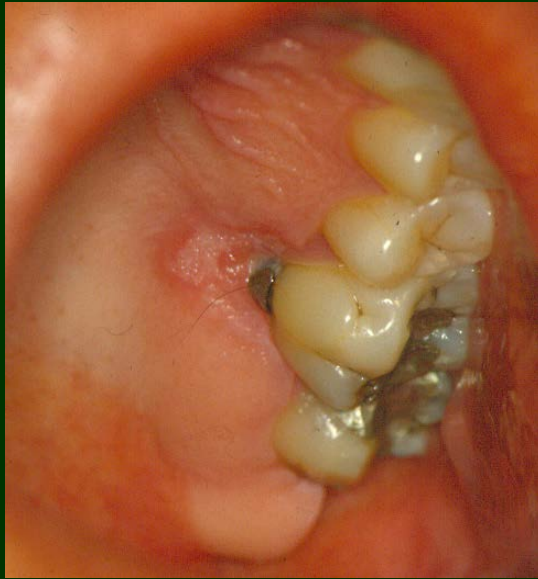
Keratoacanthoma



Verruciform Xanthoma

- A papillary lesions with keratosis
- Tends to occur on the gingiva and palate
- Benign lesion
- Equal sex distribution
- Microscopically: Hyperkeratosis, Papillary pattern, Xanthoma (foam cell histiocytes) within the submucosal papillae

Verruciform Xanthoma

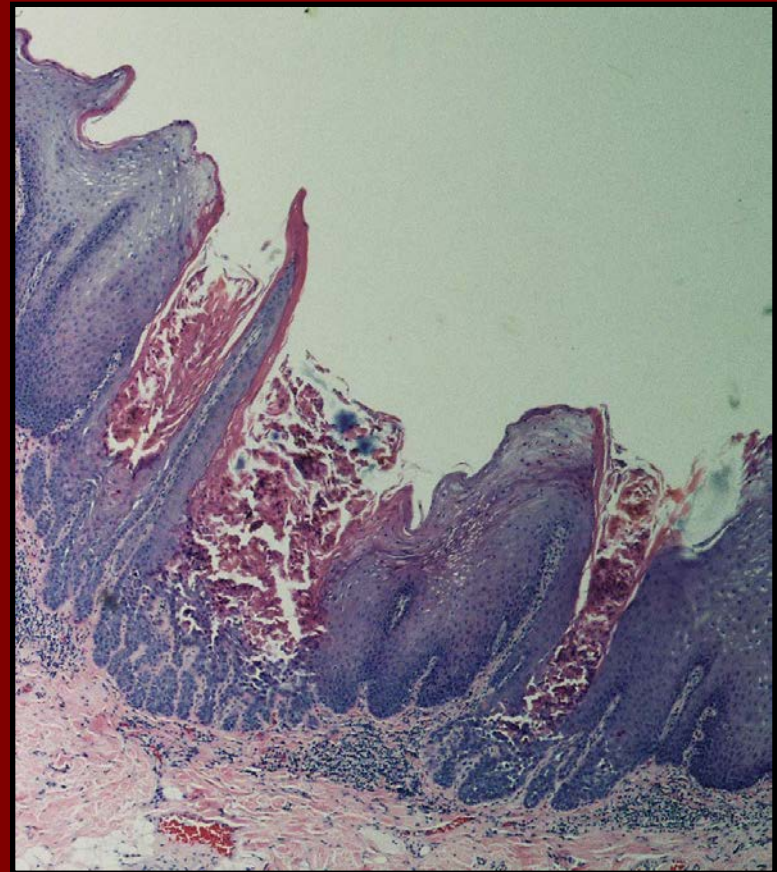


Xanthoma
cells

Warty Dyskeratoma

- An epithelial warty proliferation of skin or mucosa with distinct microscopic features
- A focal counterpart to Darier White disease (keratosis follicularis)
- Multiple, yet limited lesions are referred to as focal acantholytic dyskeratosis (Grover's disease)
- Microscopic: Verrucous keratosis with villous rete pegs, acantholysis and dyskeratotic cells in spinous layer

Warty Dyskeratoma

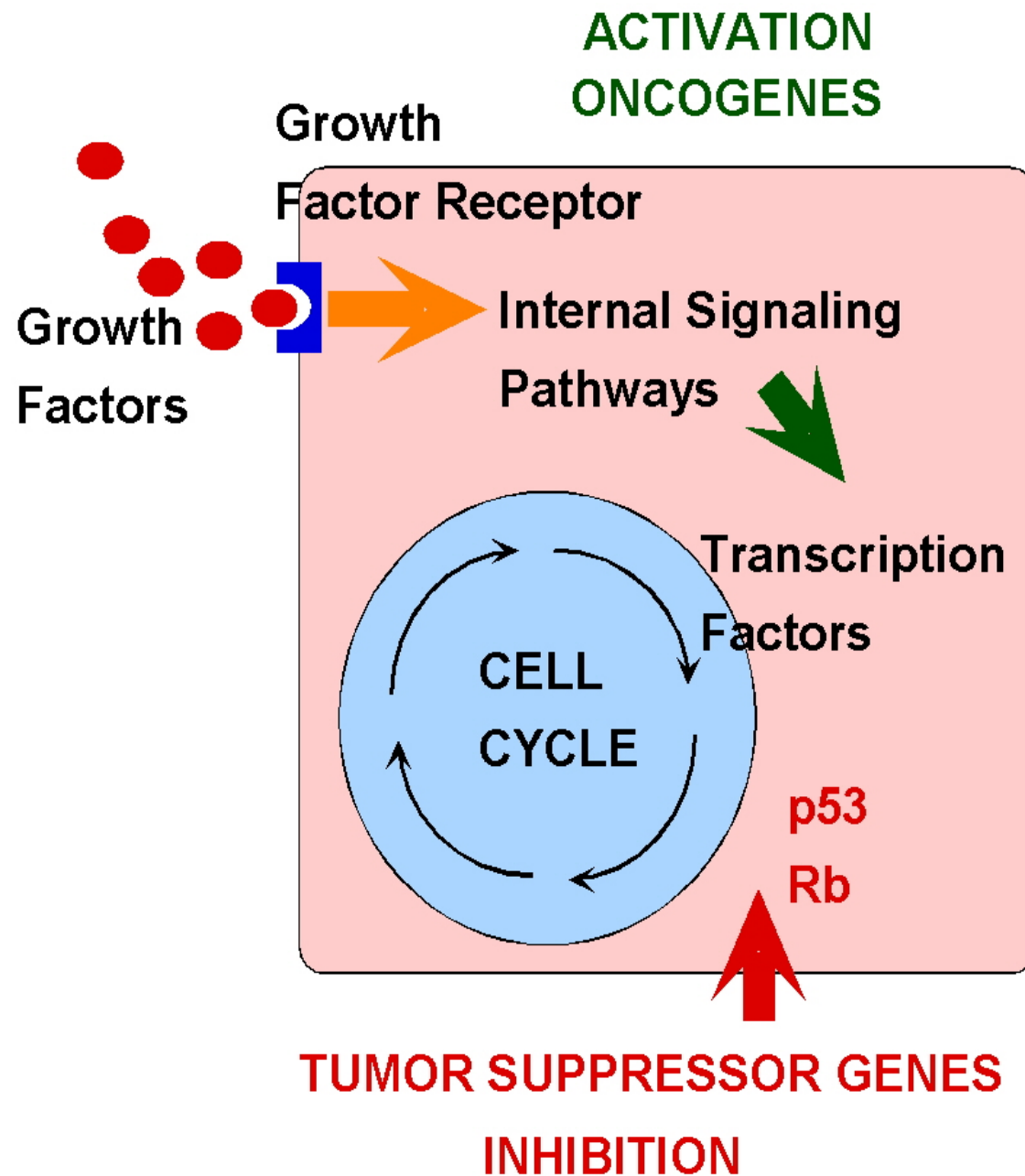


Carcinogenesis – Oral Cancer

- Smoked Tobacco
- The Smokeless Tobacco Issue
- Alcohol
- Carcinogens
 - Polycyclic Hydrocarbons
 - Nitrosourias
- Human Papillomaviruses

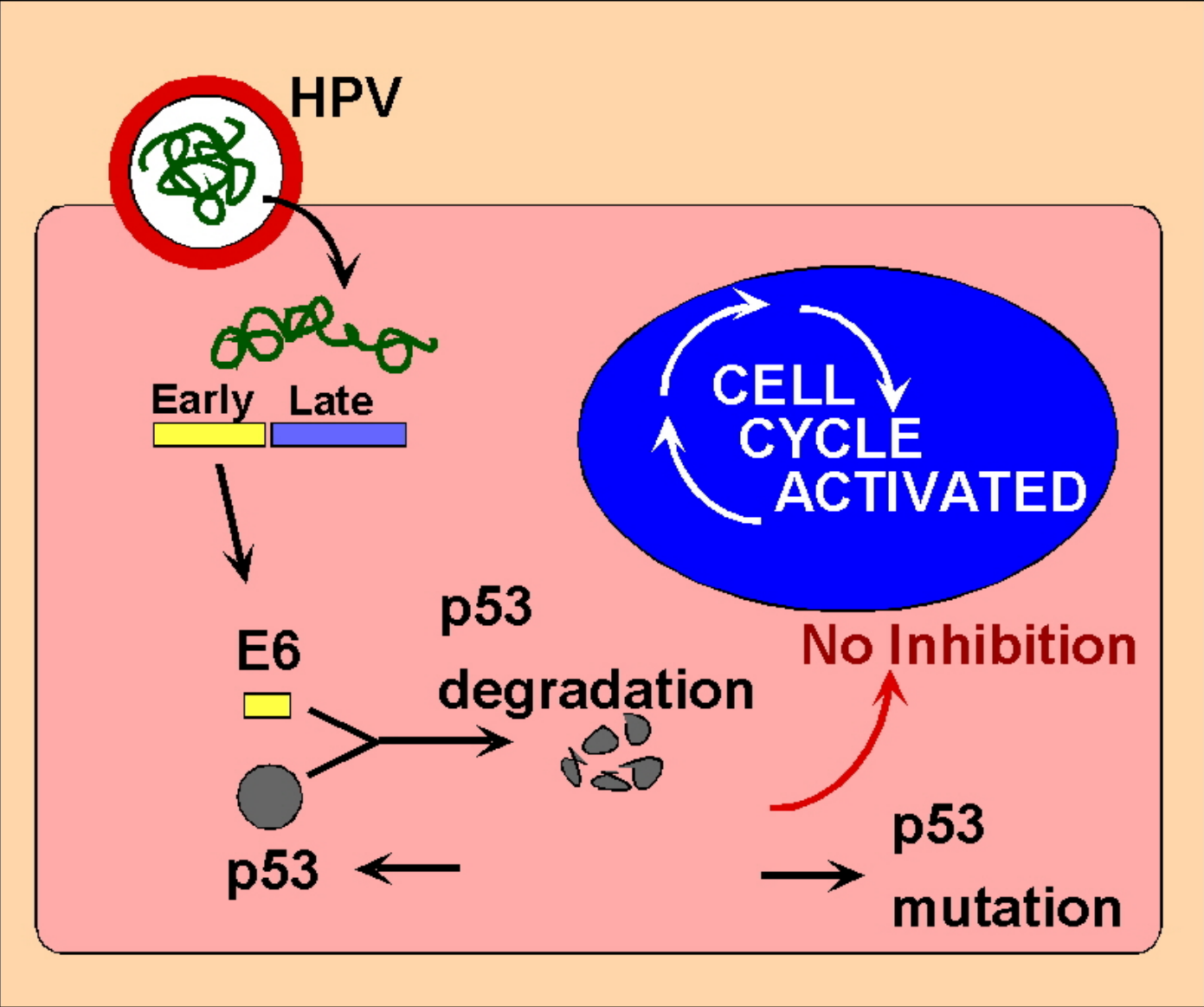
Carcinogenesis

- Oncogenes
 - Growth Factors
 - Growth Factor Receptors
 - Internal Signaling Pathway Mediators
- Tumor Suppressor Genes
 - Apoptotic Pathway Mediators
 - Cell Cycle Regulatory proteins



HPV and p53

- HPV 16
 - Present in some leukoplakias and SCCA
 - Present in >60% of tonsillar/tongue base SCCA
- P53
 - Mutated in >60% of oral SCCA
 - Inactivated/nonmutated in HPV associated SCCA



LEUKOPLAKIA

A Clinical Term

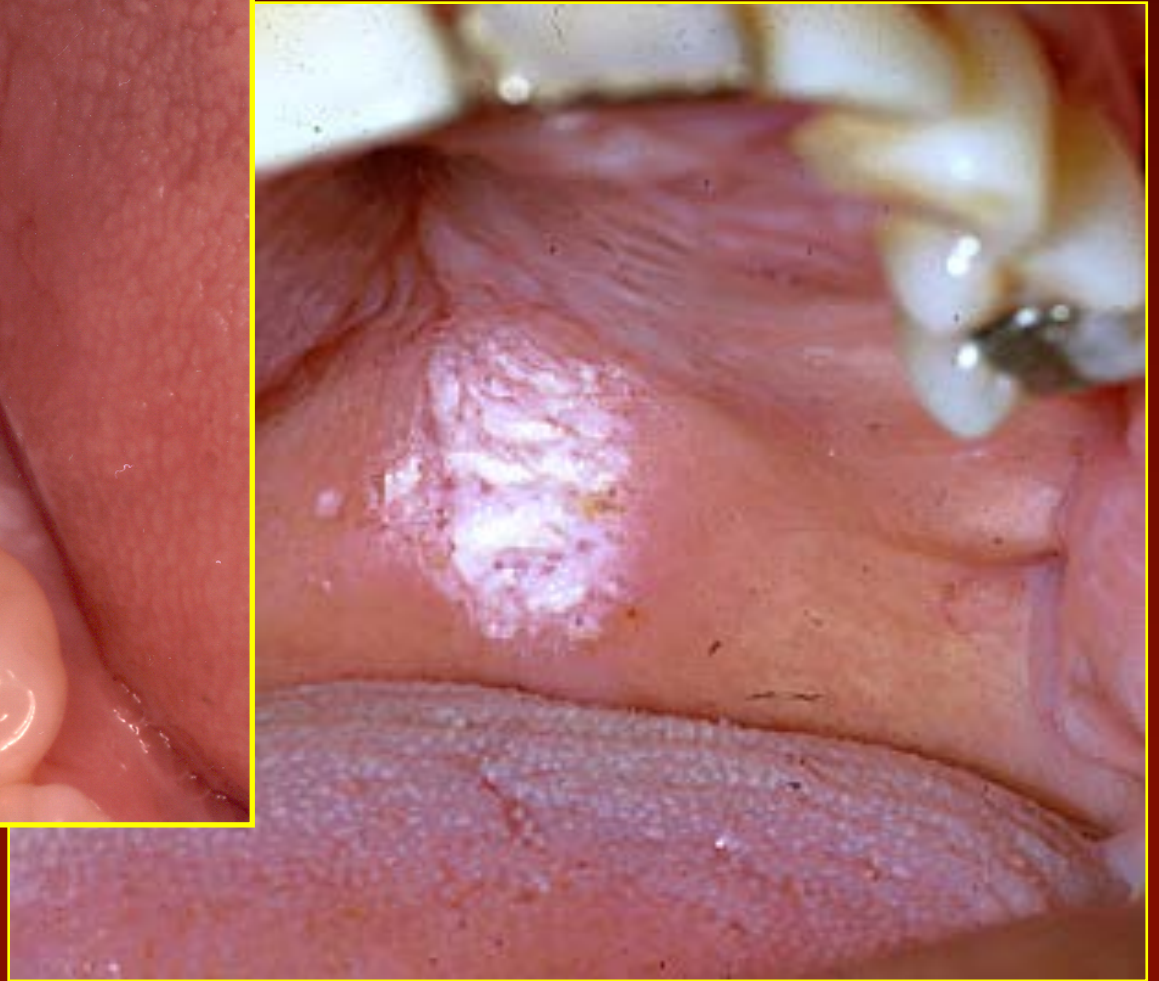
Variants of Leukoplakia

- Homogeneous
- Verrucous
- Speckled

Leukoplakia

- 20% precancerous change histologically
- Floor of the Mouth – 40% dysplastic
- 6% of all leukoplakias will progress to carcinoma within 5-7 years

Leukoplakia



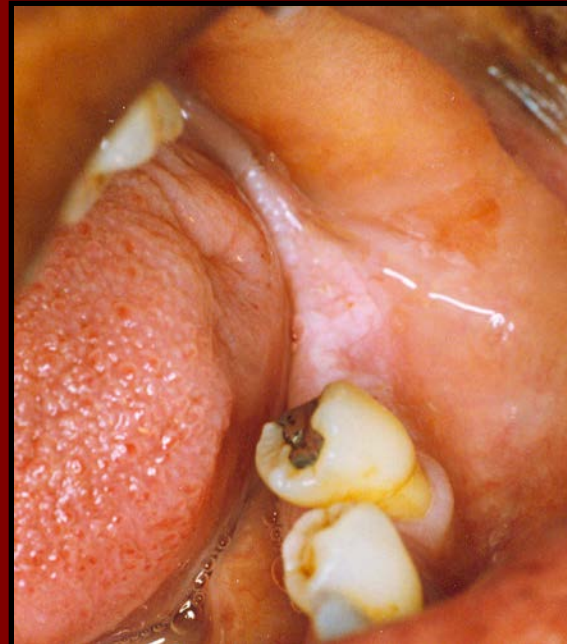
Leukoplakia



White lesions
that cannot be
rubbed away



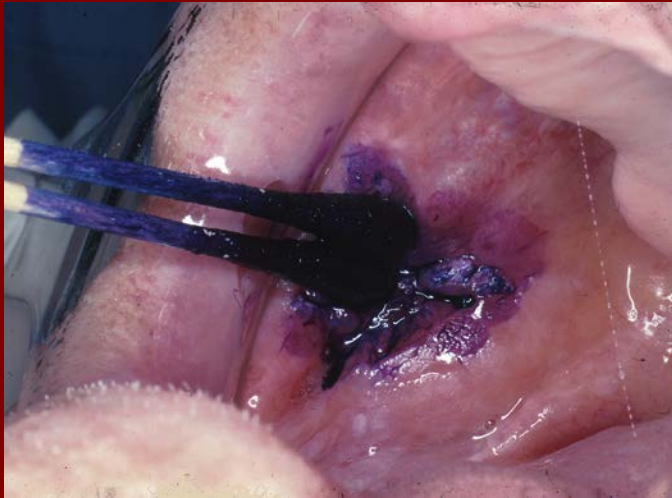
Leukoplakia



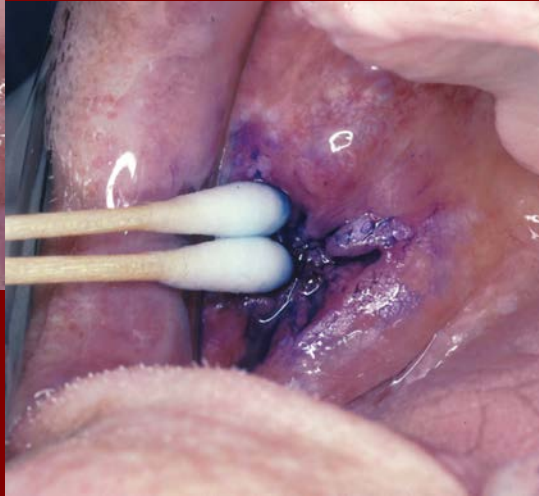
Leukoplakia - Snuff Keratosis



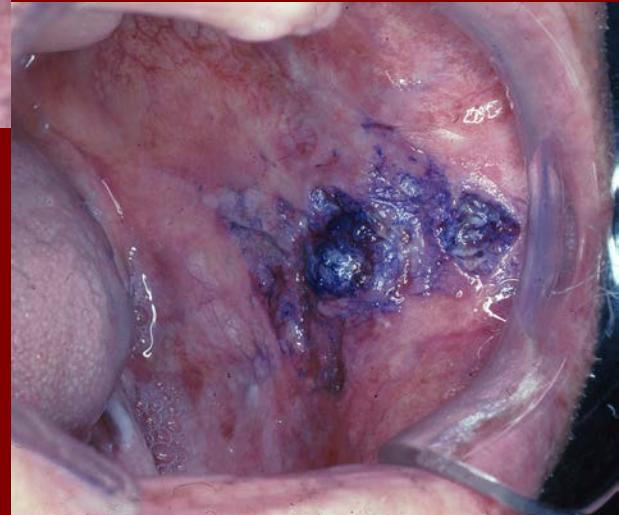
Toluidine Blue, detection of dysplasia



Application of dye

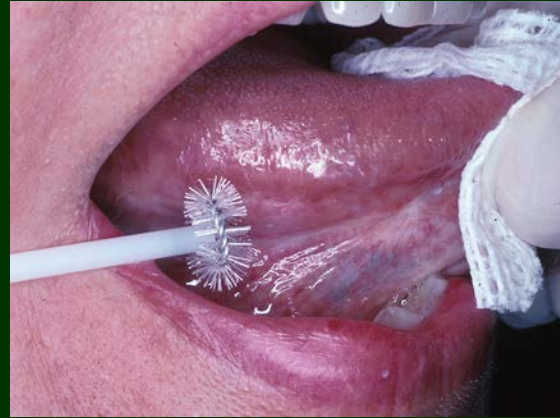


Acetic Acid



Dye retention

Tissue Sampling (BIOPSY)

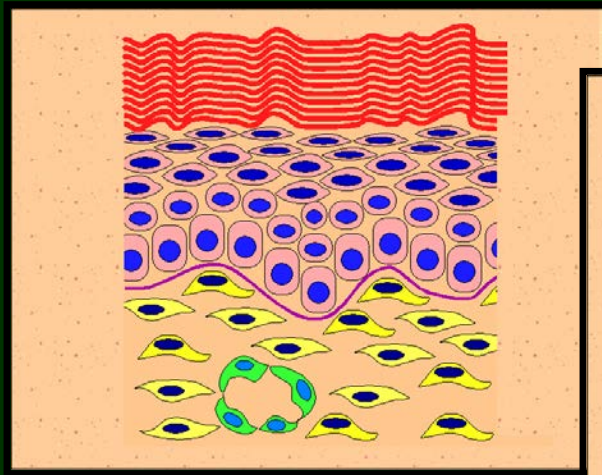


Brush Biopsy

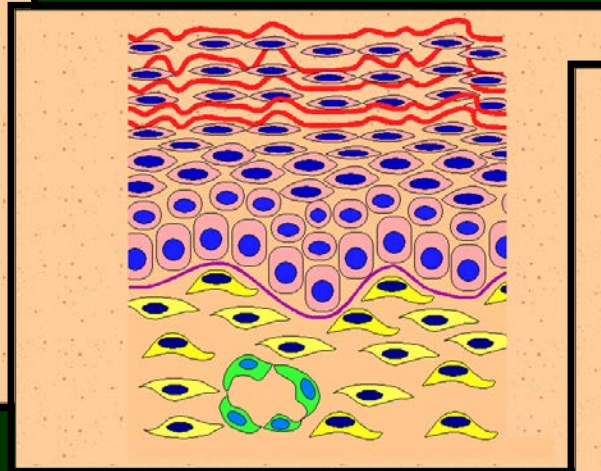


Punch Biopsy

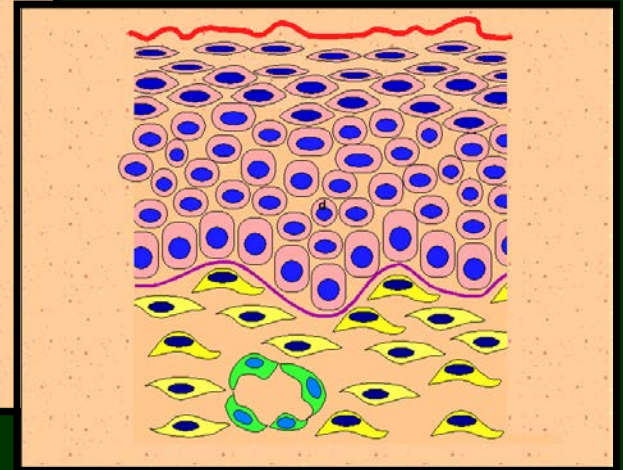
Benign Keratosis



hyperorthokeratosis



hyperparakeratosis



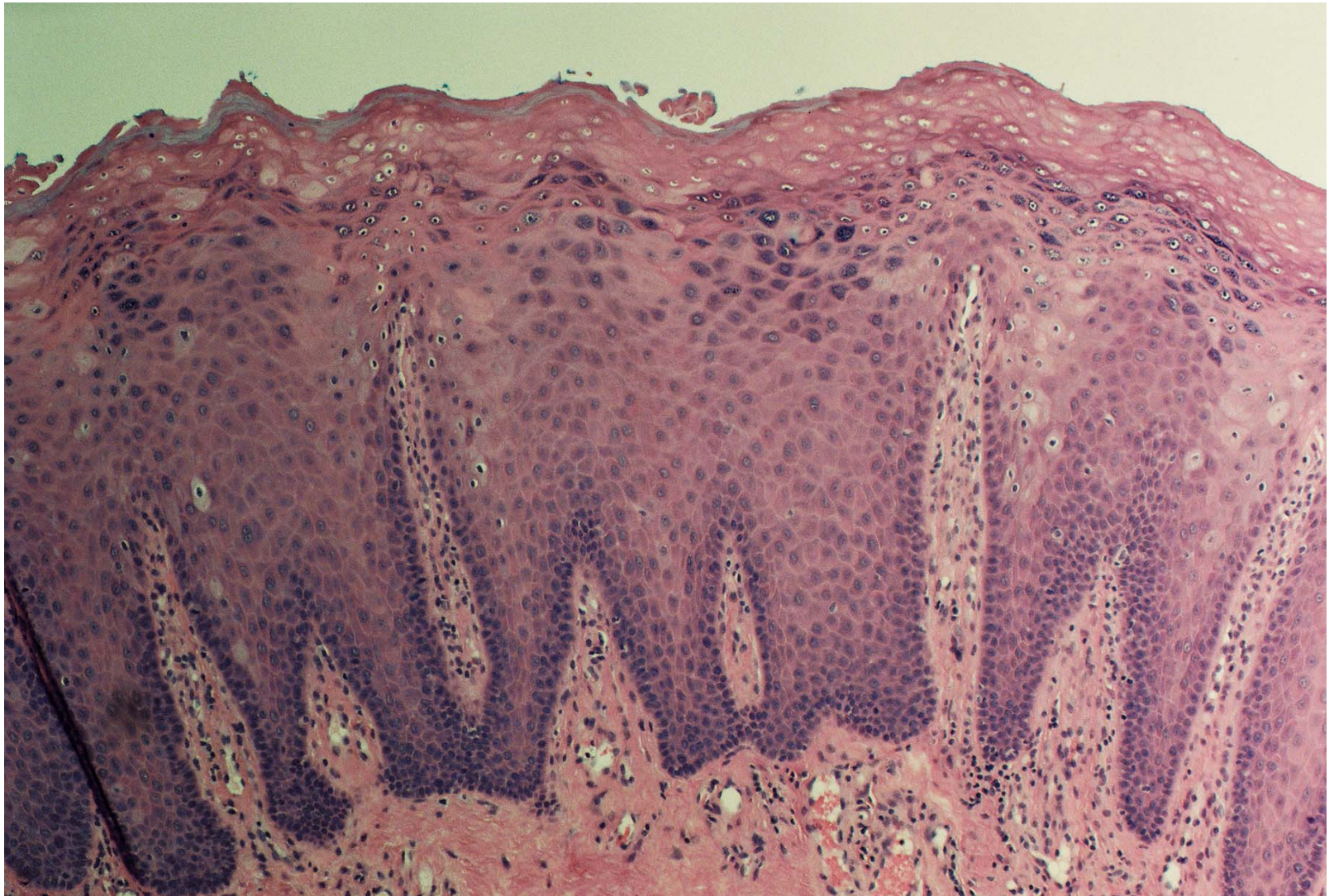
acanthosis

Histologic Spectrum of Leukoplakia

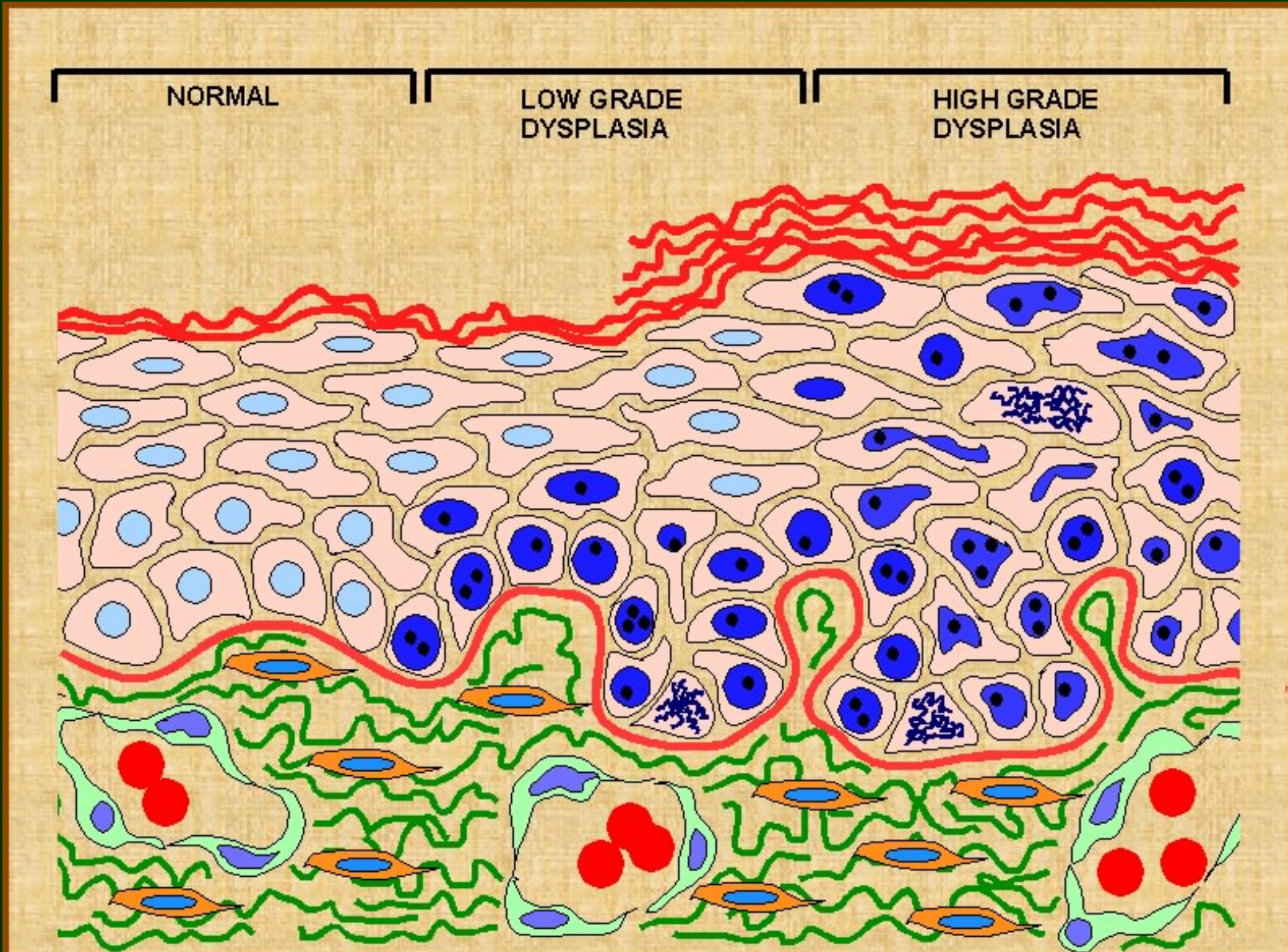
- Hyperorthokeratosis
- Hyperparakeratosis
- Acanthosis



Hyperkeratosis/Acanthosis

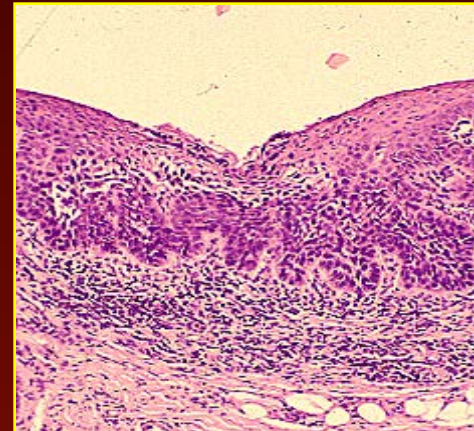


Grades of Epithelial Dysplasia

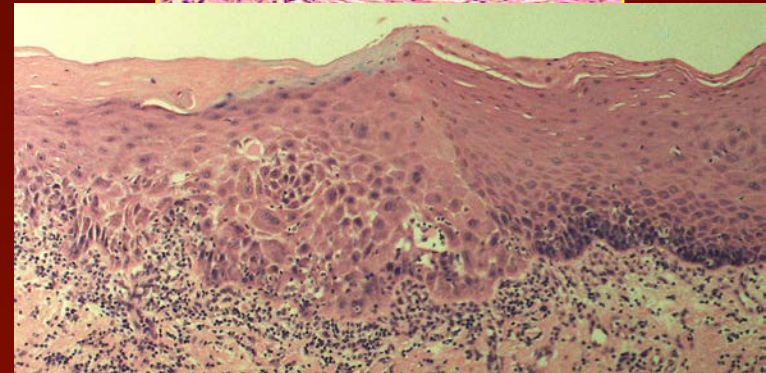


Histologic Spectrum of Leukoplakia

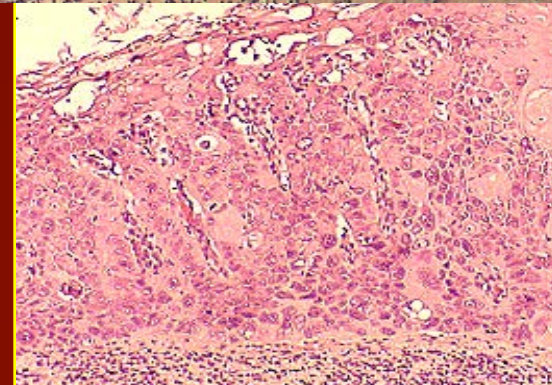
- Mild Dysplasia



- Moderate Dysplasia

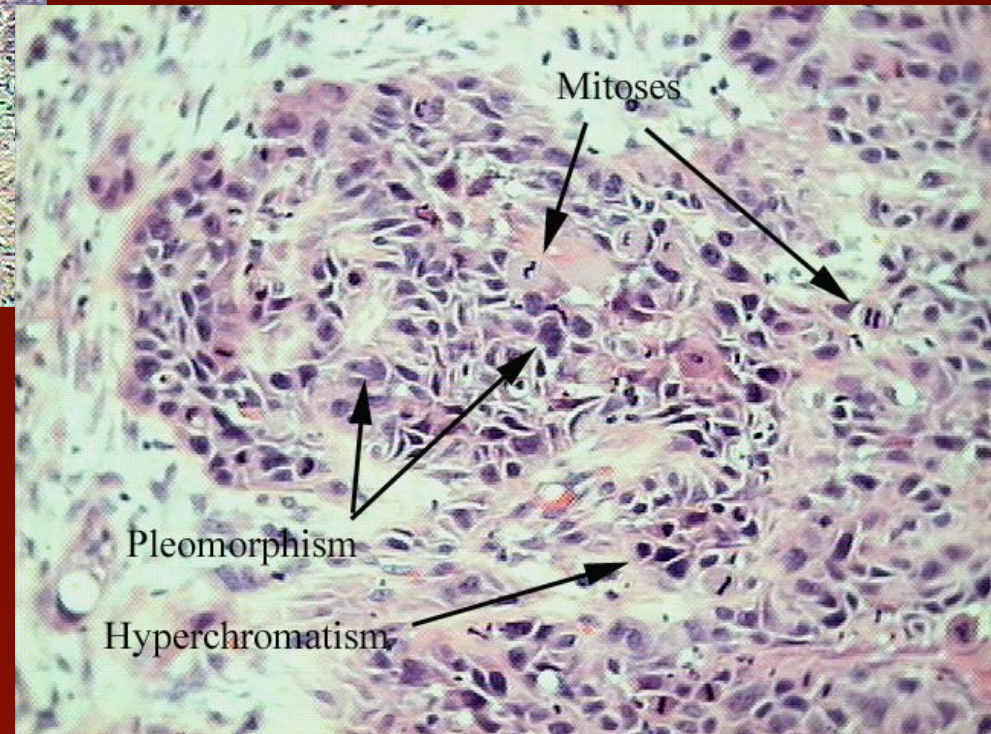
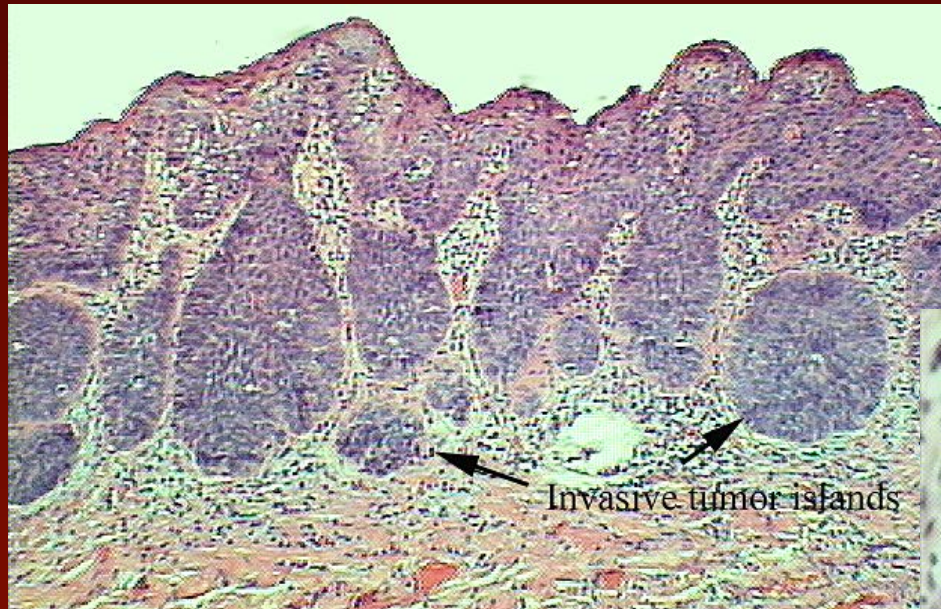


- Severe Dysplasia



Histologic Spectrum of Leukoplakia

- Squamous Cell Carcinoma



Erythroplakia

- Velvety red patch of unknown etiology
- More rare than leukoplakia
- Soft Palate, Floor of Mouth, Lateral Tongue
- 90% chance for dysplasia
- Often mixed with leukoplakic areas
 - (Leukoerythroplakia)
 - (Speckled leukoplakia)

Erythroplakia



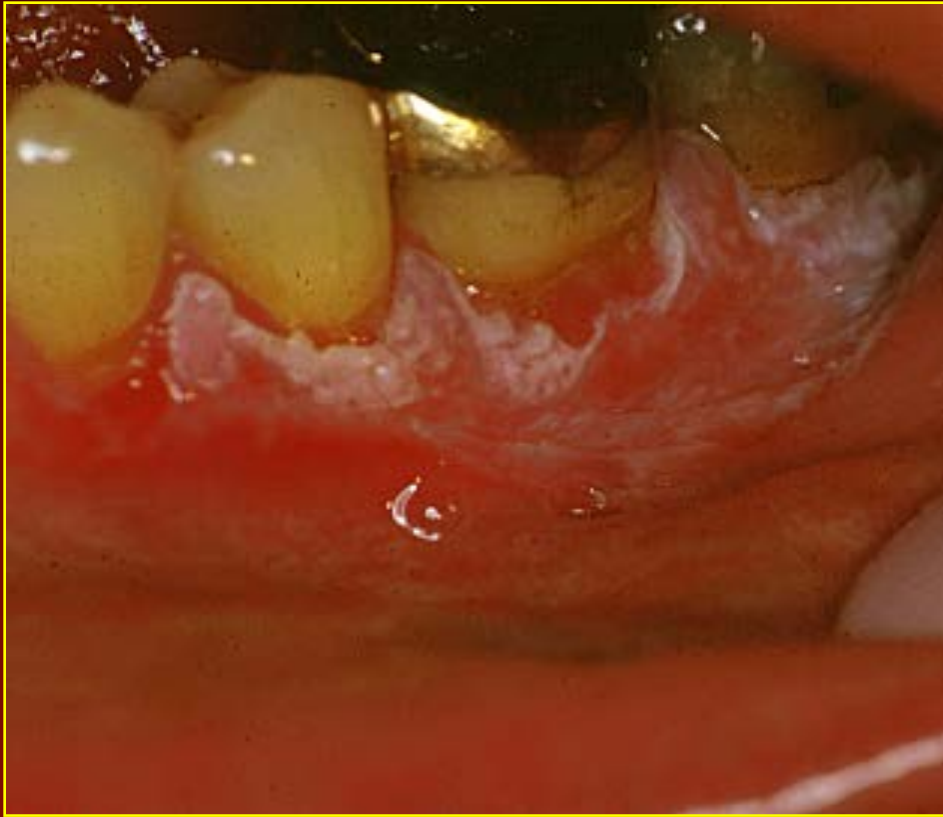
Erythroleukoplakia (Speckled)



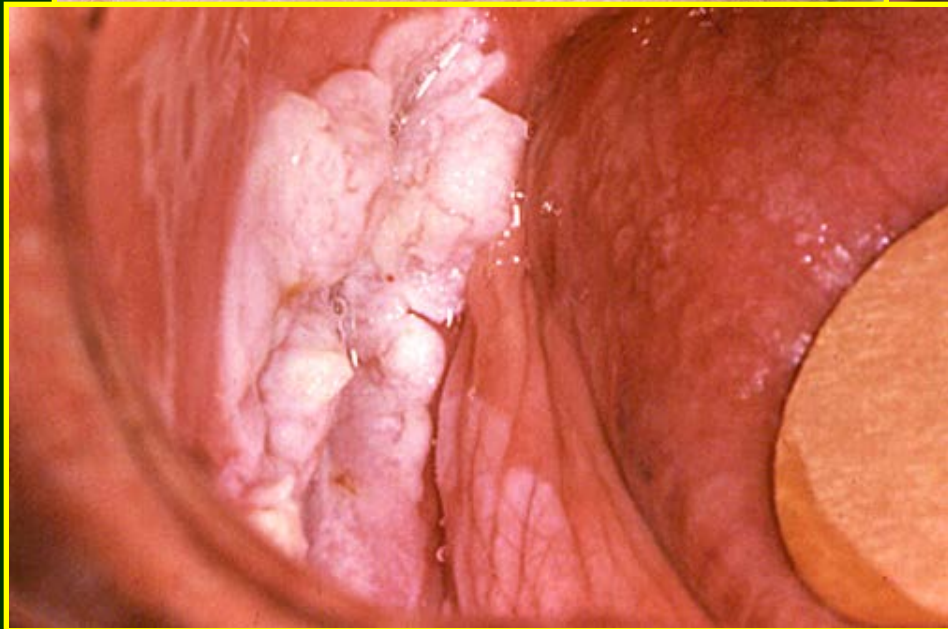
Proliferative Verrucous Leukoplakia

- Predilection for elderly females
- Only 40% use tobacco
- Predilection for gingiva, mucobuccal fold
- Persistent and Diffuse
- High Recurrence

Proliferative Verrucous Leukoplakia



PVL



PVL - Histopathology



- Varies from verrucous hyperkeratosis to verrucous carcinoma, papillary squamous cancer and invasive carcinoma

Lichen Planus and Oral Cancer

- Oral LP occurs in .5% of the population
- PREVALENCE: 1-2% of patients with OLP develop oral cancer (1:100) over follow up periods of 5-10 years
- INDICIDENCE: Oral SCCA in US (35,000:298,000,000 or approximately 1.2/10,000 (.012%) Estimate over 10 year and 20 year follow up periods.
- ODDS RATIOS:*

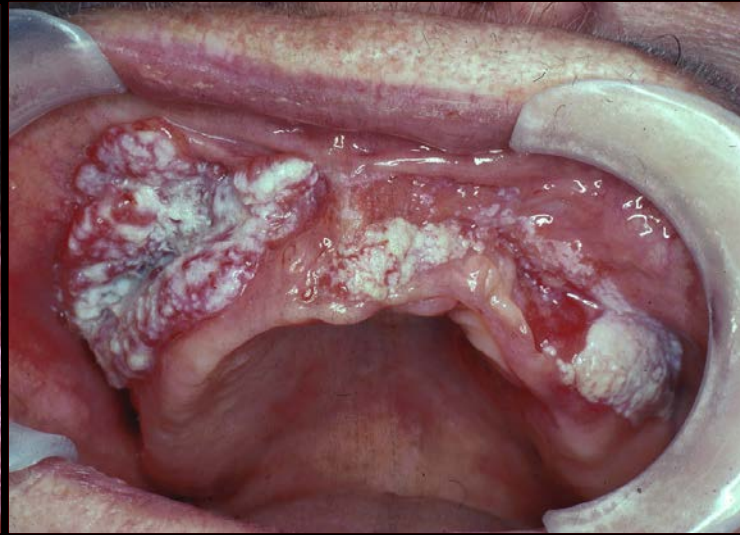
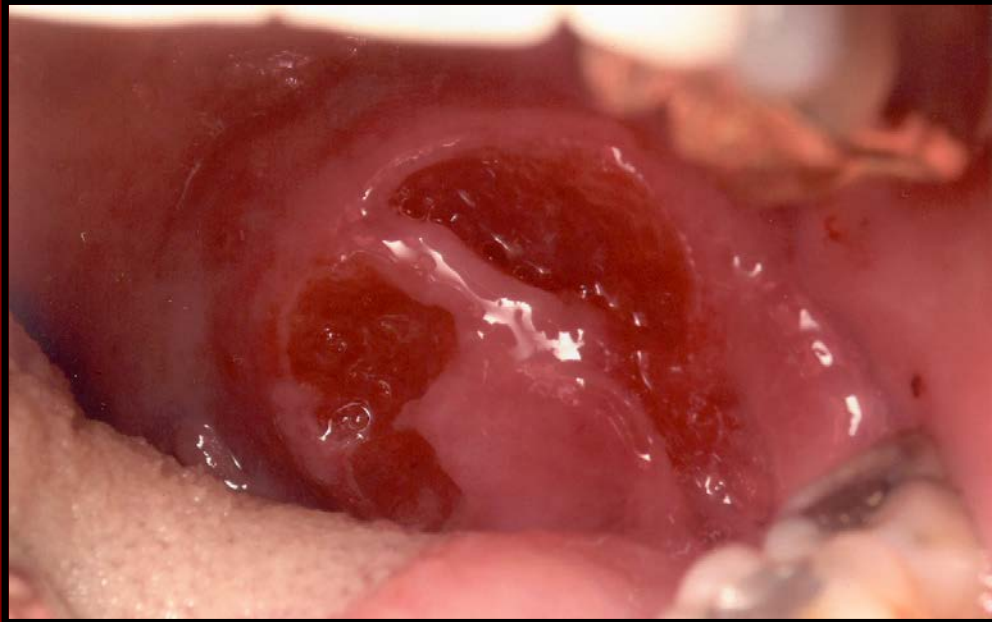
 - 1 year Follow up 1.0%:0.012% > 83.3
 - 10 year Follow up 1.0%:0.12% > 8.3
 - 20 year Follow up 1.0%:0..23% > 4.3

- *Oral Ca over 10 year period 350,000/298,000,000 (.12%)
- *Oral CA over 20 year period 700,000/298,000,000 (.23%)

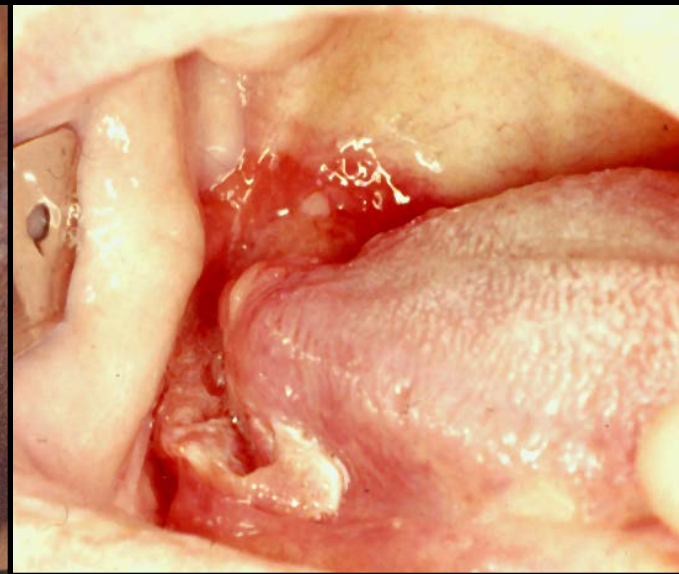
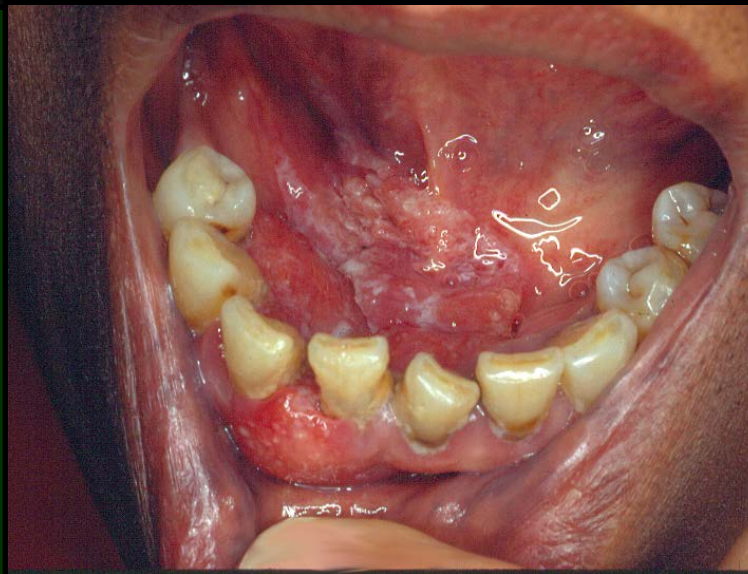
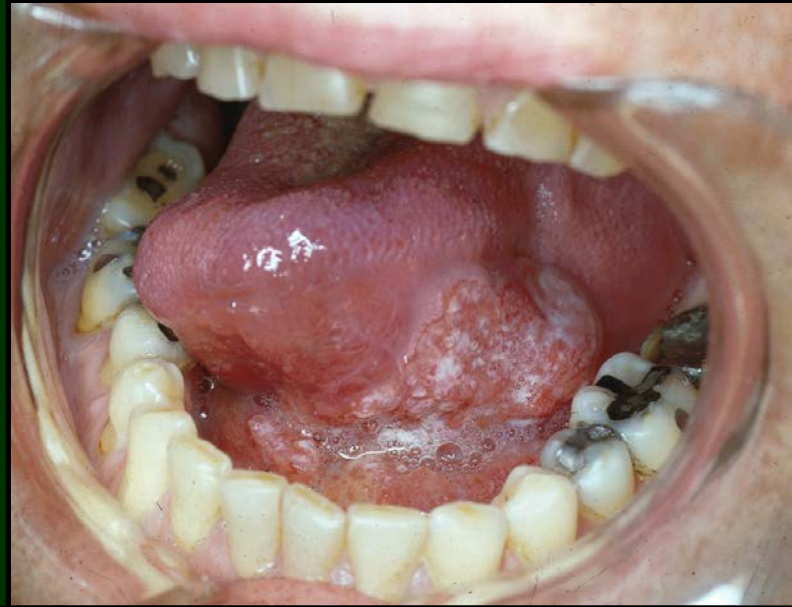
Squamous Cell Carcinoma

- Ulcerated, indurated, white/red, fixed tumefaction
- Anterior mouth: Well differentiated, good prognosis
- Posterior mouth: Less differentiated, poor prognosis
- Lateral tongue, floor of mouth are favored sites although SCCA can occur anywhere in the oral mucosa
- 70+⁰% smoking and alcohol
- Tonsillar pillar, base of tongue: HPV 16
- Tumor suppressor gene mutations (p16, p53)
- Prognosis: no nodes > 70% 5 year survival;
+ nodes > 35% 5 year survival

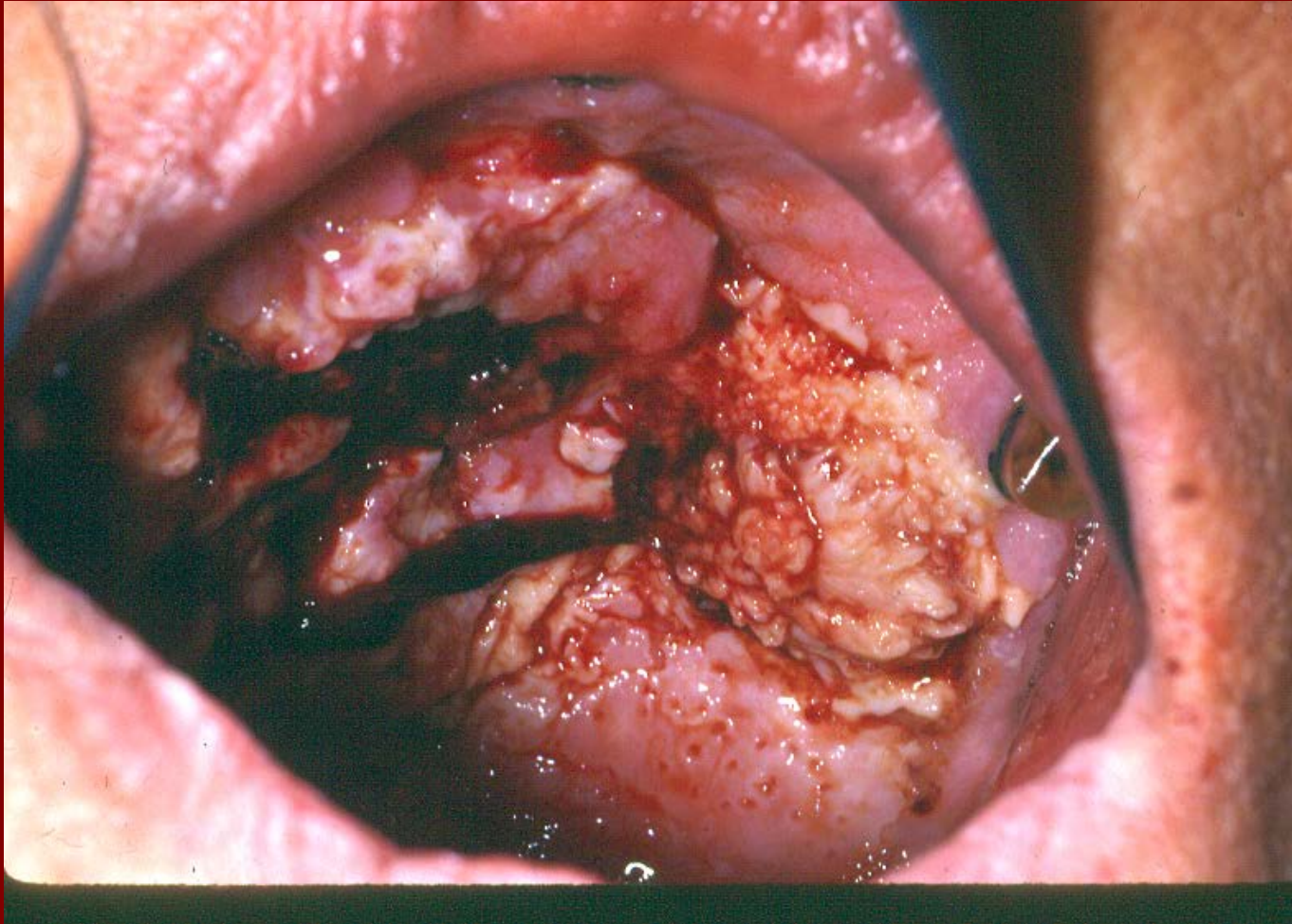
Squamous Cell Carcinoma



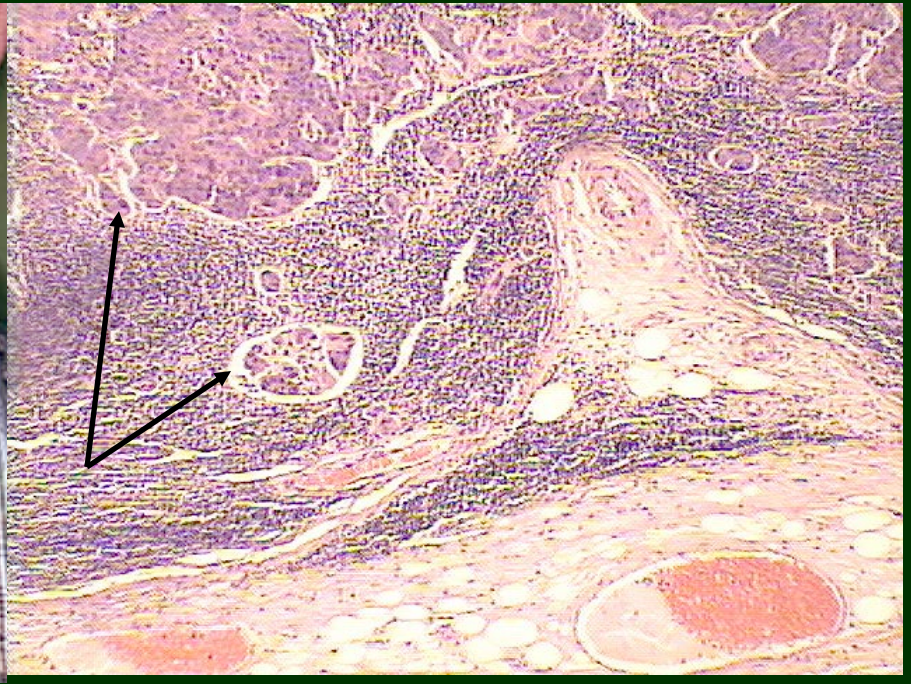
Squamous Cell Carcinoma



Papillary SCCA



Oral Squamous Cell Carcinoma Cervical Node Metastasis



TNM classification for Head and Neck Cancer

- T = size of Primary Tumor
 - T₀: no evidence of tumor
 - T₁: carcinoma in situ
 - T₂: 2 cm or less
 - T₃: 2-4 cm
 - T₄: invasion of adjacent tissues
- N = regional lymph node involvement
 - N₀: no palpable nodes
 - N₁: suspicious, palpable node ipsilateral
 - N₂: suspicious, palpable node contralateral
 - N₃: large fixed node
- M = distant metastasis
 - M₀: no evidence of disease
 - M₁: distant metastases present

Staging according to TNM classification

Stage I: T₁N₀M₀

Stage II: T₂N₀M₀

Stage III: T₃N₀M₀,

T₁N₁M₀,

T₂N₁M₀,

T₃N₁M₀

Stage IV: T₁N₂M₀,

T₁N₃M₀,

T₂N₂M₀,

T₂N₃M₀,

T₃N₂M₀,

T₃N₃M₀,

any case with M₁

Keratoses of the Face & Lips

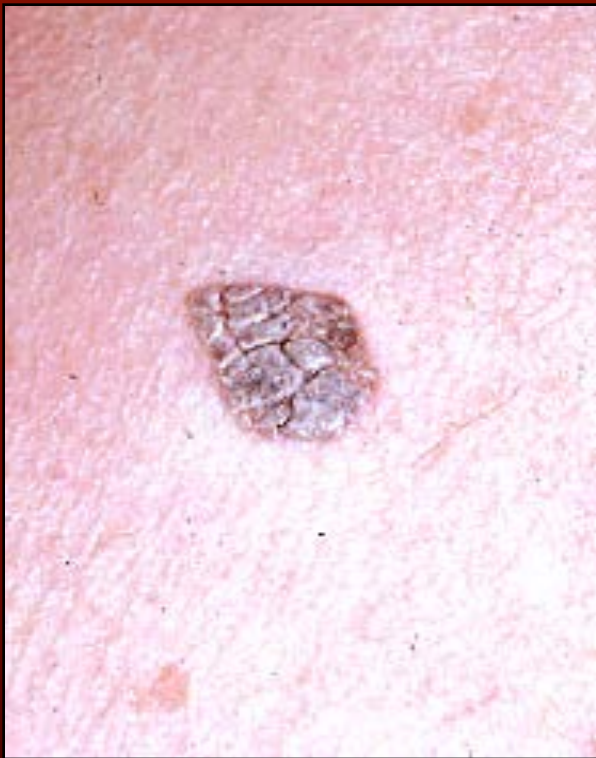
- Seborrheic Keratosis
- Actinic Keratosis
- Actinic Cheilitis

Skin Keratoses

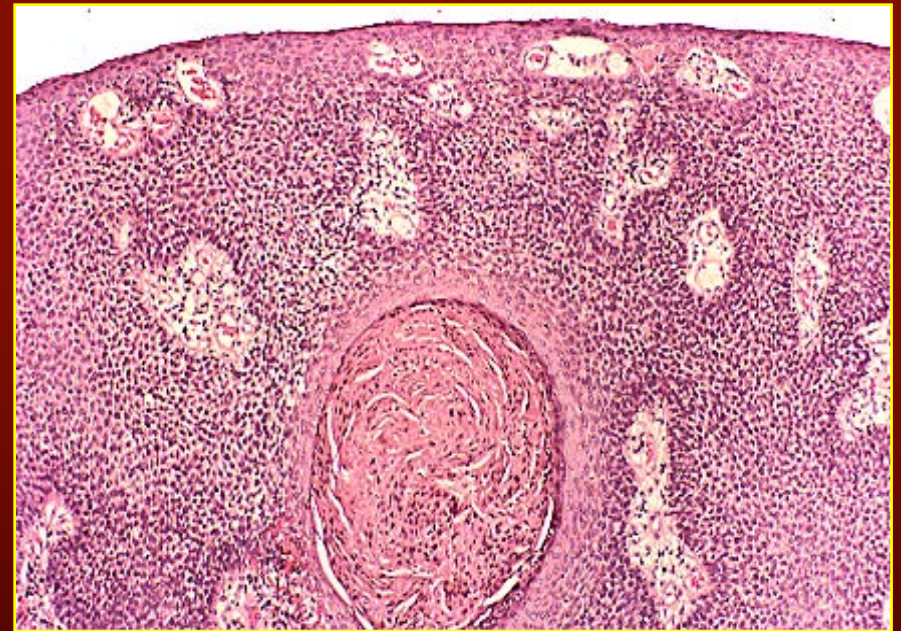
- Seborrheic Keratosis
 - Elderly males, facial skin, brown oily
 - Not precancerous
- Actinic Keratosis
 - Elderly males, facial skin, red and scaly
 - Precancerous, squamous cell CA
- Actinic Cheilitis
 - Elderly males, lower lip, white lesion
 - Precancerous, squamous cell CA

Seborrheic Keratosis

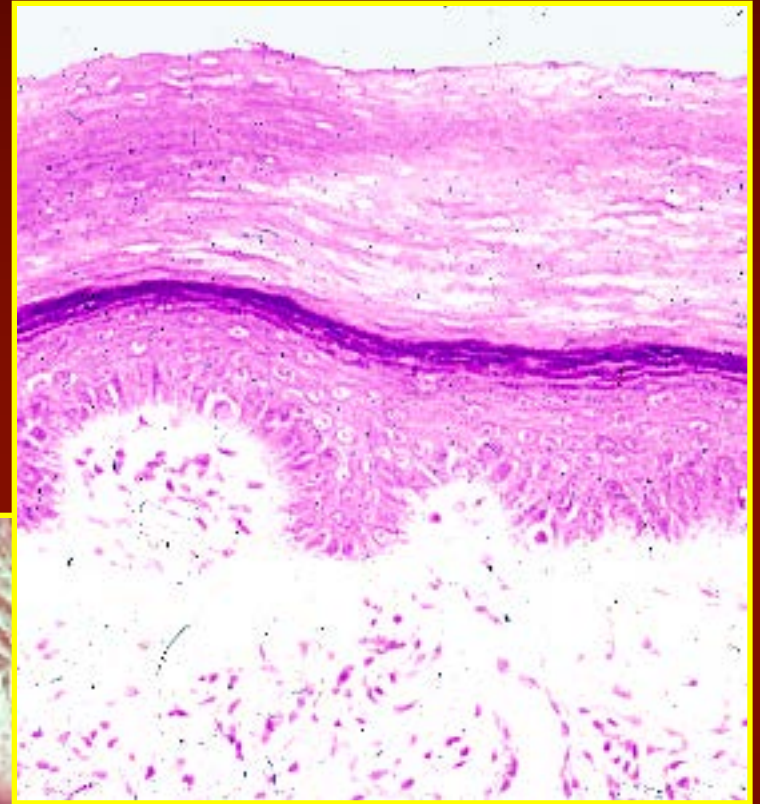
- Clinical



- Histopathology



Actinic Cheilitis



Basal Cell Carcinoma

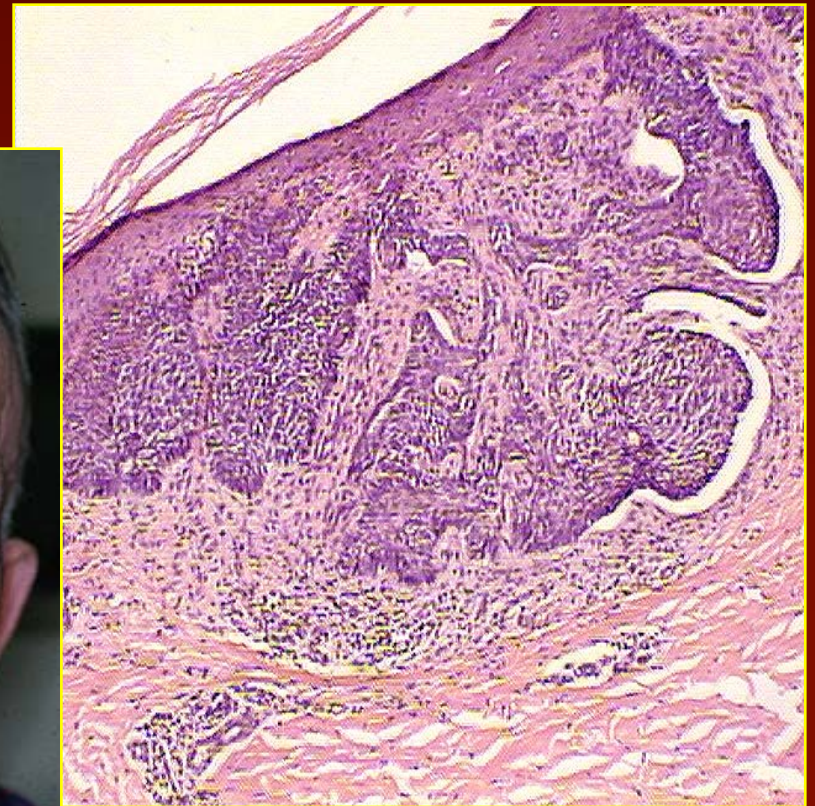
- Facial Skin
- Keratosis, Ulcer with rolled borders
- Elderly
- Actinic Radiation
- Nonmetastasizing
- Other adnexa (sebaceous, sweat, hair)

Basal Cell Carcinoma

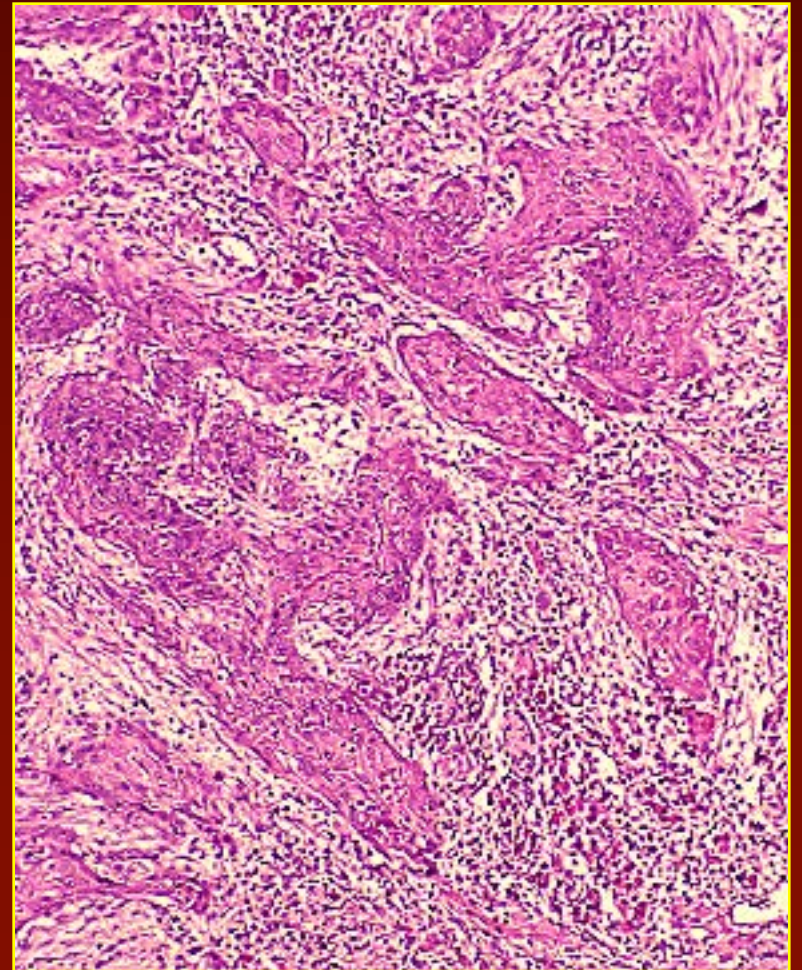
- Cutaneous Ulcer



- Histopathology



Squamous Cell Carcinoma



Variants of SCCA

- Histologic Grade
 - Keratinizing
 - Nonkeratinizing
- Verrucous Carcinoma
- Spindle Cell Carcinoma

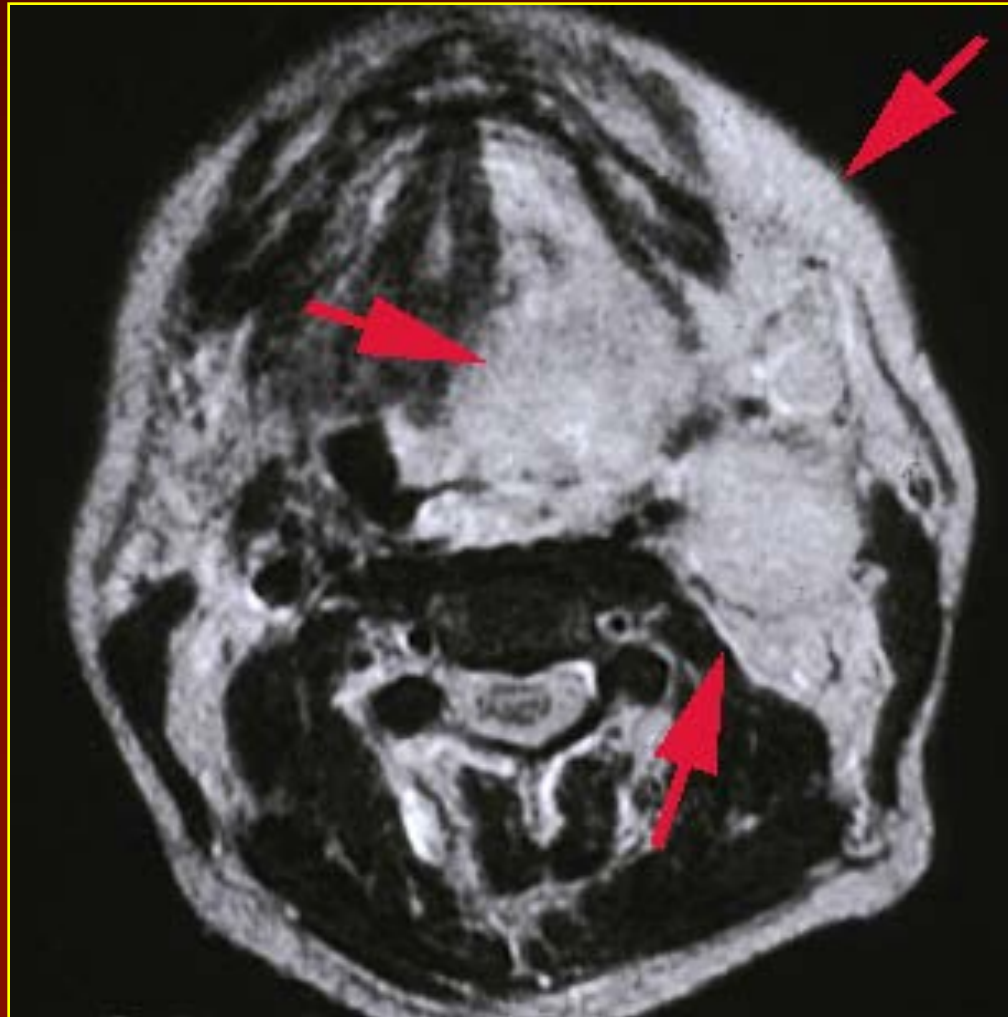
Clinical Features SCCA

- >50 years
- In nonsmokers - >50 years
- >80% smoke cigarettes
- Alcohol is a risk cofactor
- Lateral tongue, Floor of mouth
- Prognosis:
 - Anterior portion of mouth – better
 - Posterior portion of mouth - worse

Therapy for Oral Cancer

- Laser Ablation
- Surgical Excision
- Radiation Therapy
- Neck Node Management
 - Partial Lymph Node Dissection
 - Radical Lymph Node Dissection
 - Radiation to the Neck

MRI Imaging for Head and Neck Cancer

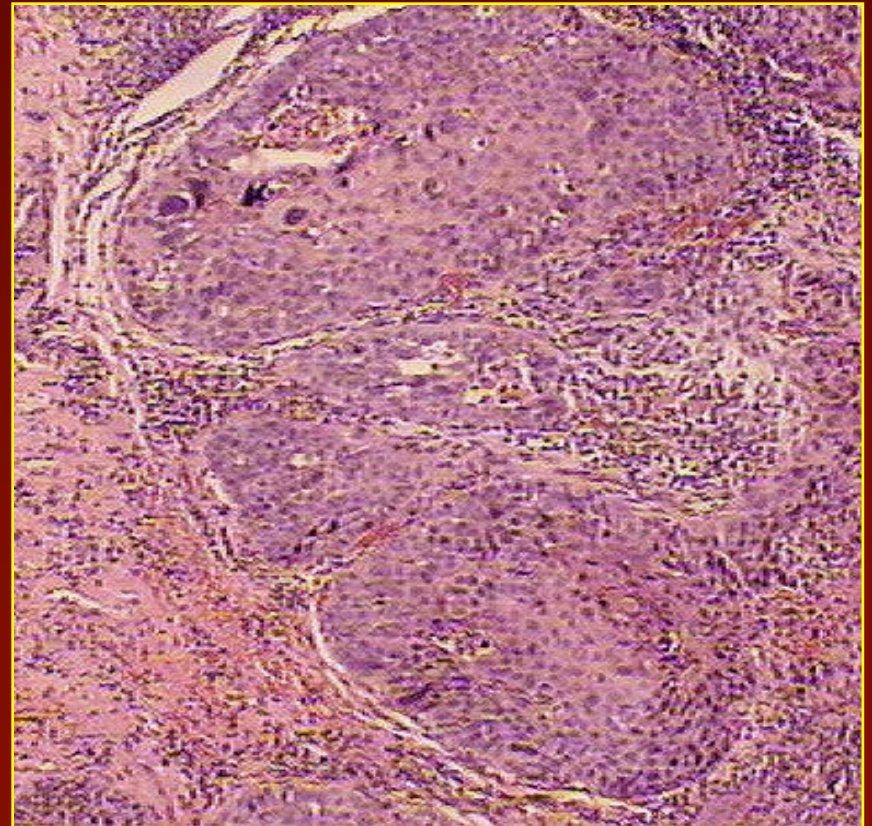


Histopathology SCCA

- Well differentiated



- Poorly differentiated



Verrucous Carcinoma

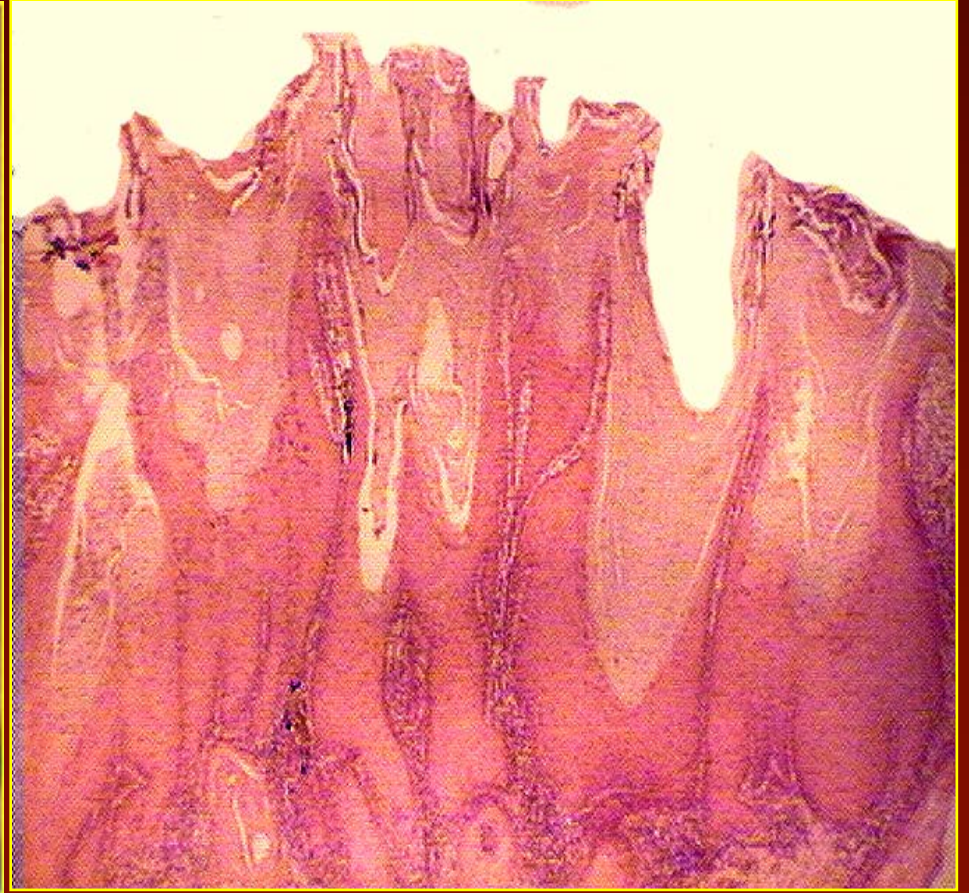
- Elderly
- White keratotic
- Cauliflower or “Verrucous”
- Noninvasive, pushing margins
- Parakeratin crypts
- Nonmetastasizing

Verrucous Carcinoma

- Clinical

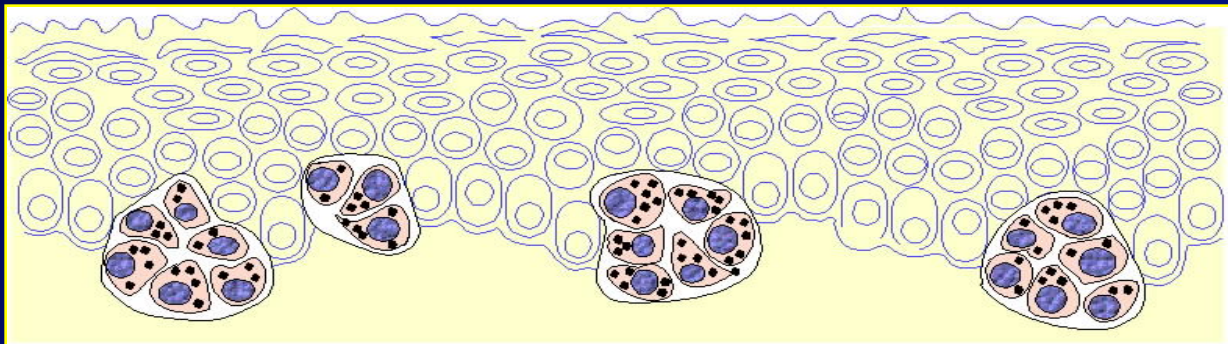


- Histopathology

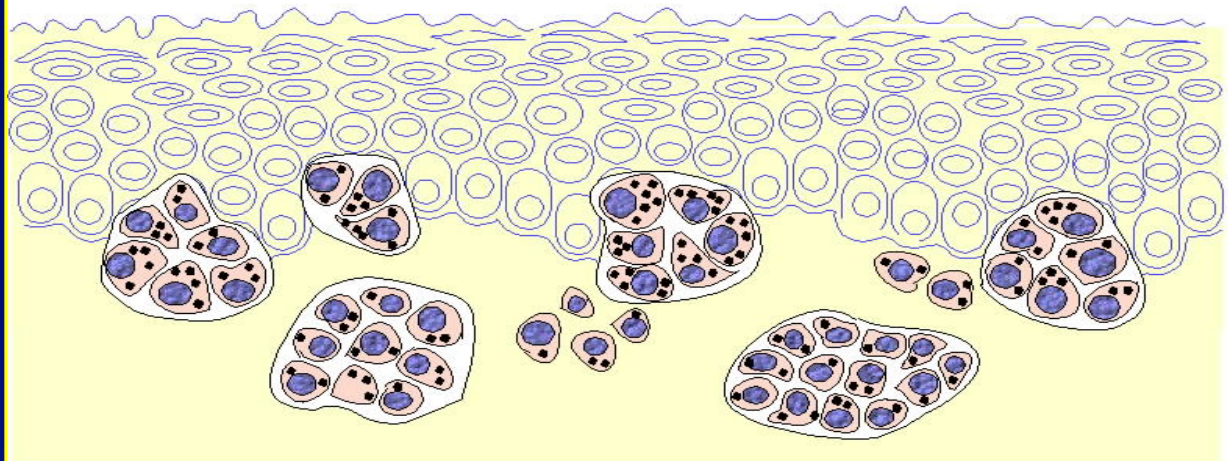


Benign Melanocytic Nevi

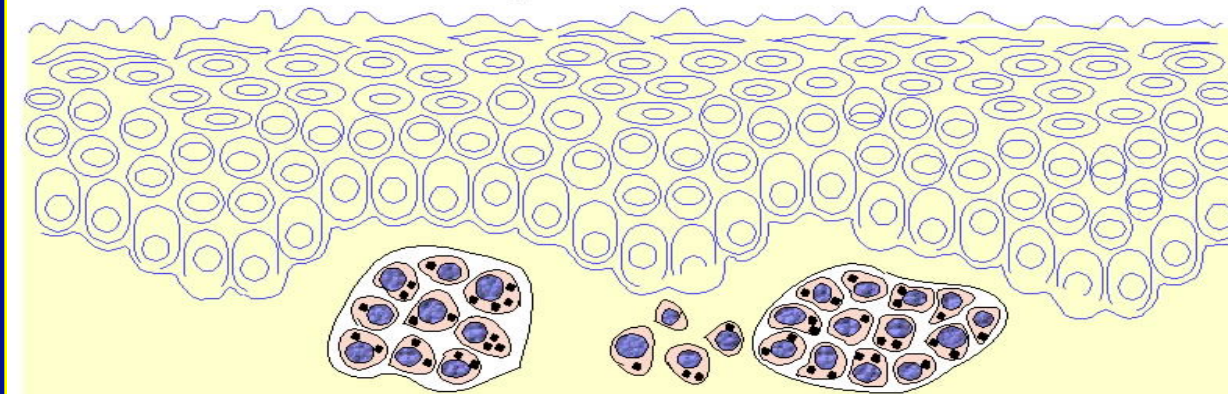
- Nevocellular
 - Junctional
 - Compound
 - Intradermal/Intramucosal
 - Specific Types (Ota, Ito)
- Blue Nevi
 - Common
 - Cellular



Junctional Nevus



Compound Nevus



Intramucosal (dermal) Nevus

Cutaneous Nevi



ORAL NEVI

- All histologic types are seen
- Melanocytes are normally present in the basal layer
- Palate>Gingiva>Buccal Mucosa
- Malignant transformation is very rare

Oral Nevi

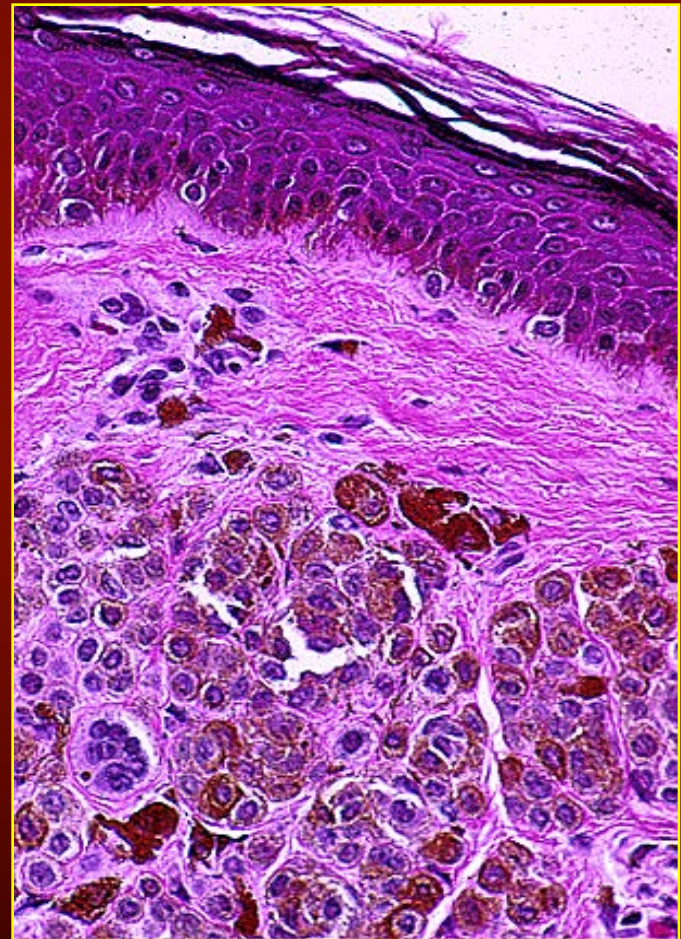


Nevi

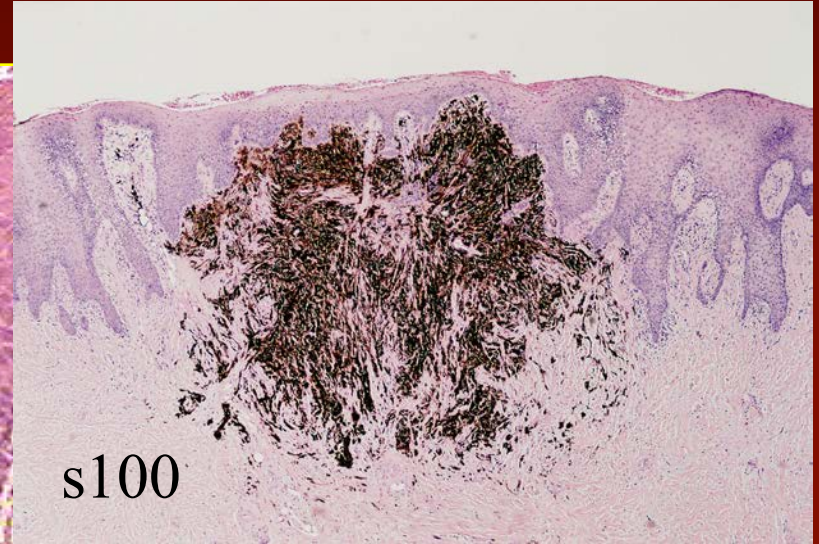
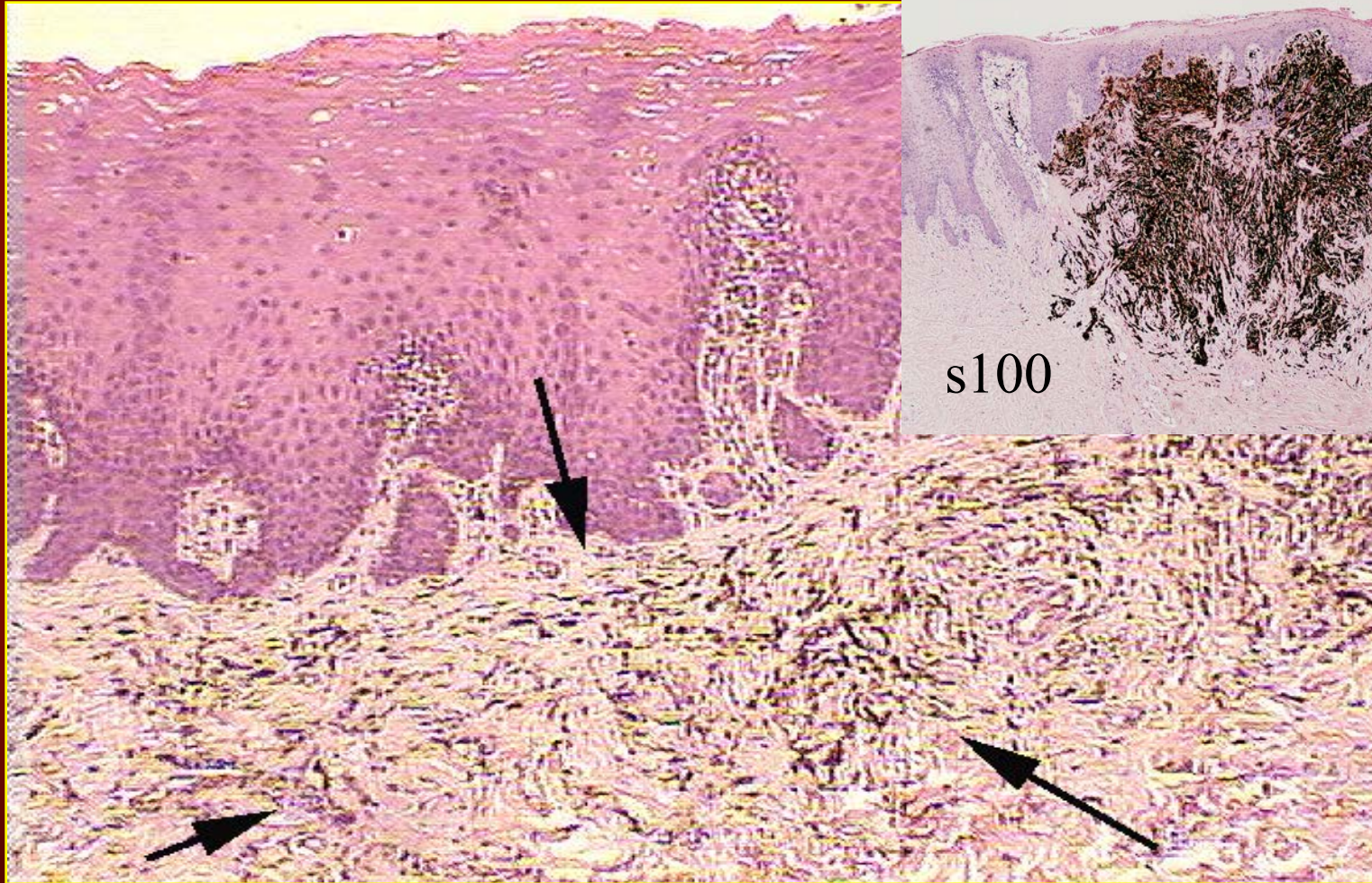
- Junctional



- Intramucosal

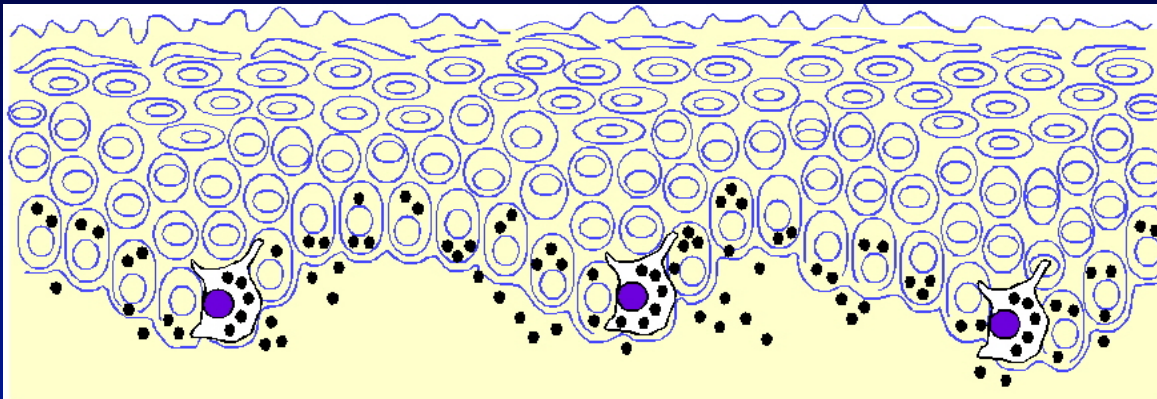


Blue Nevus

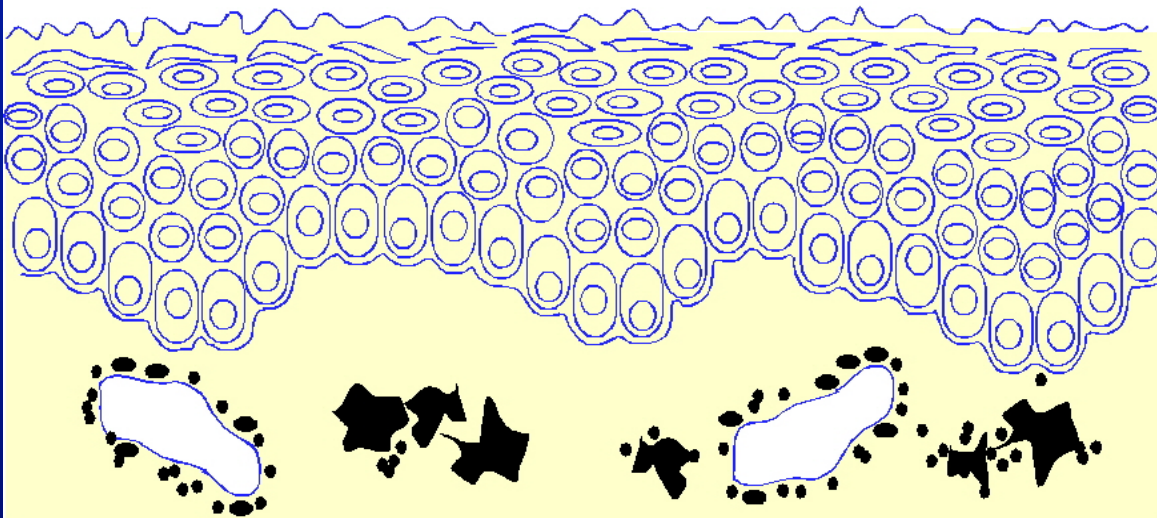


MELANOTIC MACULE

- Oral Freckle or Ephelis
- Lips>Gingiva>Palate
- Basilar Melanosis
- Melanin Incontinence
- No Malignant Potential



Oral Melanotic Macule
"increased melanin synthesis"



Amalgam and Graphite Tattoos
"extrinsic pigments"

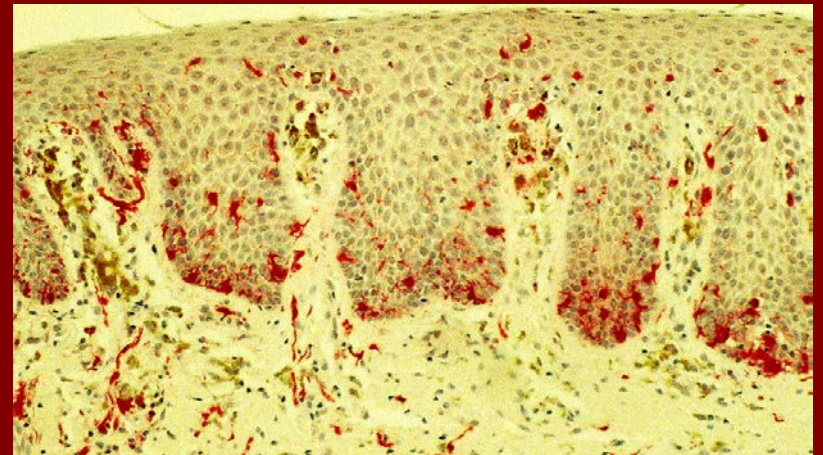
Melanotic Macule



Melanotic Macule



Basilar melanosis

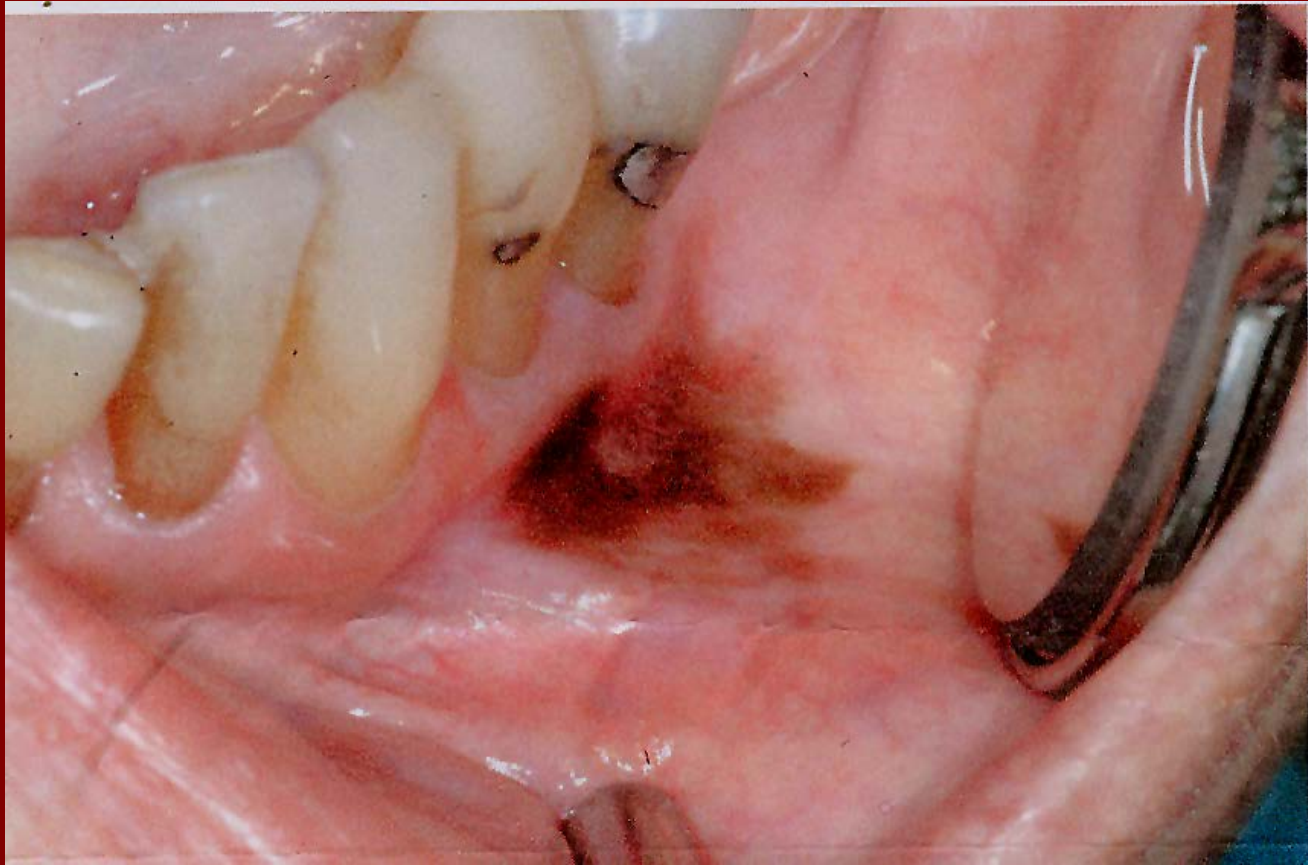


S100 protein

Melanoacanthoma

- Most common among African descent individuals
- Focal pigmented macule or plaque
- Basilar melanocytic hyperplasia with dendritic cells in spinous layer
- Not premalignant

Melanoacanthoma



Malignant Melanoma

- Melanoma in situ
- Superficial Spreading
- Nodular

ORAL MUCOSAL MELANOMA

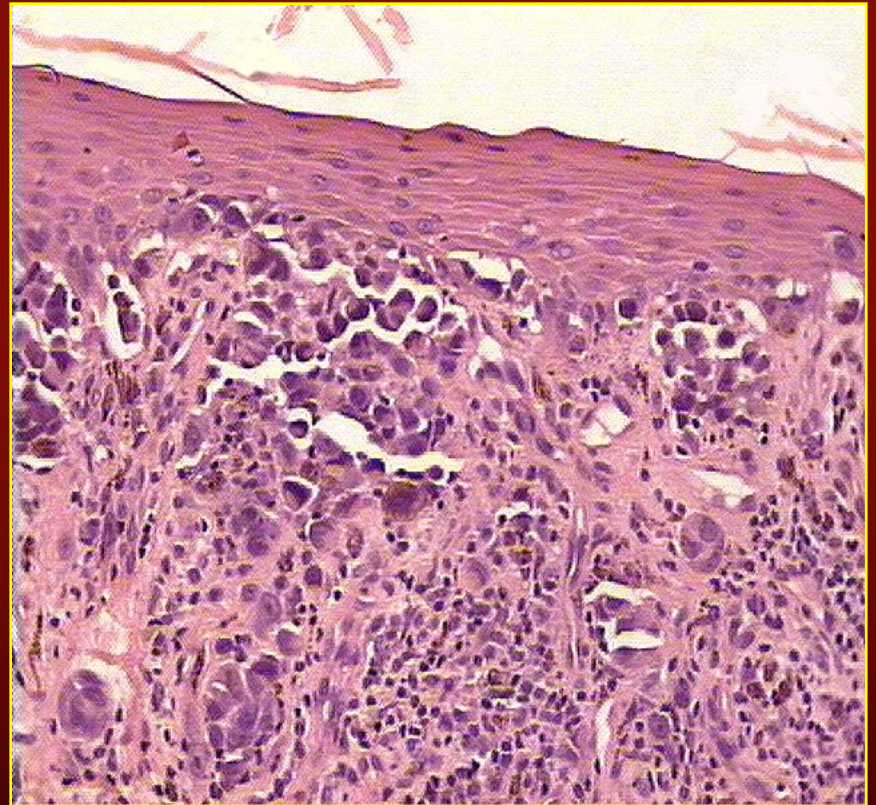
- Anterior Maxillary Gingiva > Palate
- More common in Japan
- Highly lethal, metastasize widely
- Not classifiable by Clark levels

Superficial Spreading Melanoma

- Clinical



- Histopathology

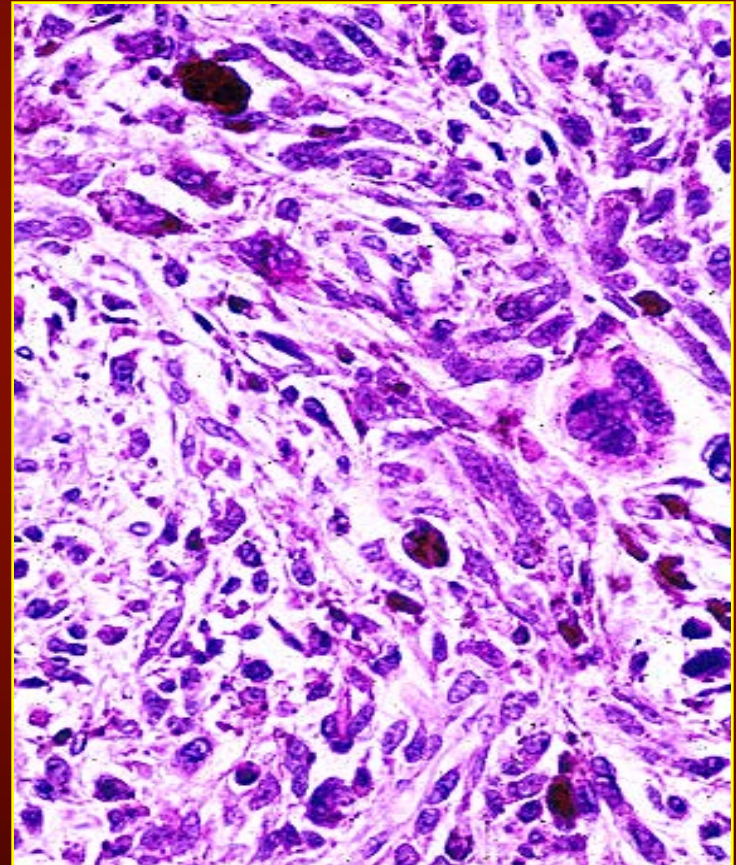


Nodular Melanoma

- Clinical



- Histopathology



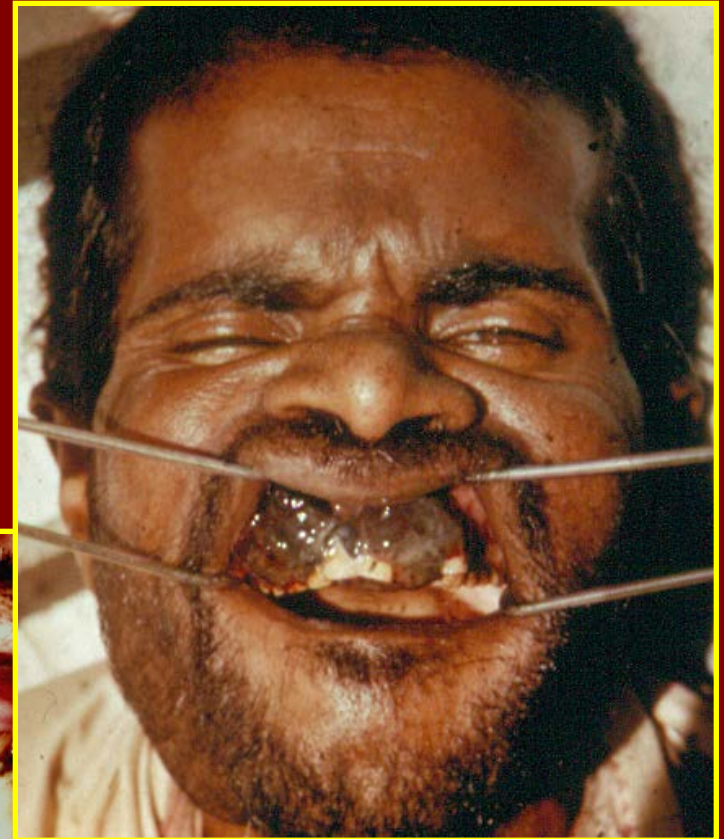
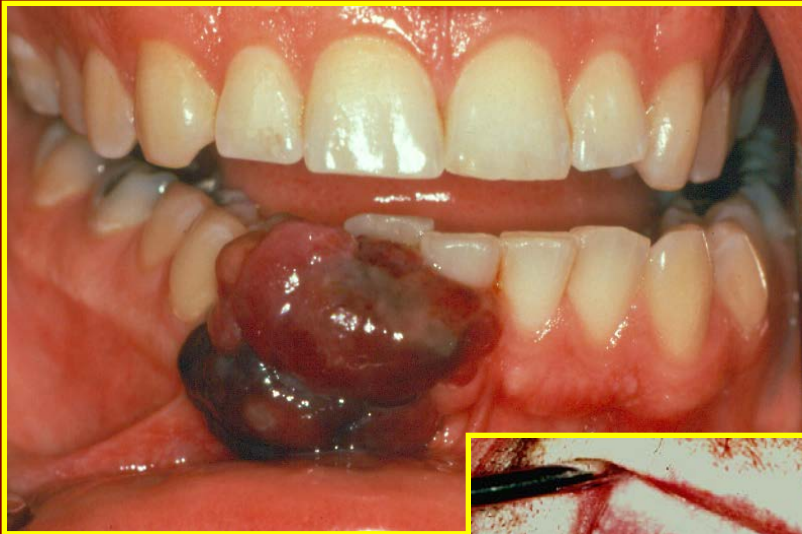
Oral Melanoma

Superficial spreading



Oral Melanoma

Nodular



CUTANEOUS MELANOMA CLARK LEVELS

Bresloe Scale is measured as depth of invasion in mm

