Benign Non-odontogenic tumours of the oral cavity

**Epithelial**
- Papilloma (Squamous papilloma)
- Keratoacanthoma
- Naevi

**Connective tissue**
- Fibroma*
- Giant cell fibroma & fibromatoses
- Fibrous histiocytoma
- Lipoma
- Osteoma
- Neuroma
- Neurofibroma
- Schwannoma (Neurilemoma)
- Granular cell tumour
- Haemangioma, Lymphangioma *

Papilloma

- First described by Tomes in 1848 as gingival wart
- Derived from *papilla* for “nipple”
- Localized, benign, HPV-induced hyperplasia
- Most common virus subtypes: HPV 6, HPV 11
  - Not assoc. with malignancy or precancer
  - Low virulence & infectivity; Not contagious
- Unlike papillomas of the nasal, paranasal & laryngeal regions, recurrence rate is less

Papilloma: Features

- **Age predilection**: 30-50 yrs
- **Gender predilection**: None
- **Site predilection**: Tongue, lip, buccal mucosa, soft palate
- Soft, painless, pedunculated mass with finger-like projections – *cauliflower*-like; usually not > 0.5 cm
- White because of excessive keratin; normal/ pink/ red depending on keratinization

Papilloma: Clinical appearance

Multiple papillomas

- Heck’s disease (Focal epithelial hyperplasia),
- Cowden’s Syndrome (Multiple hamartoma syndrome),
- Naevus unius lateris,
- Acanthosis nigricans
- Tuberous sclerosis
- Focal dermal hypoplasia (Goltz-Gorlin syndrome)
**Papilloma: Histopathology**

- **Koilocytes**: Epithelial cells with perinuclear halo and nuclear pyknosis may be seen in prickle-cell layer

**Papilloma: Differential Diagnosis**

- **Verruca vulgaris** – HPV 2, 4, 6 & HPV 40
  - Common on skin; contagious; autoinoculation possible
  - Oral lesions rare; more likely in children
  - Prominent granular cell layer
  - Abundant koilocytes
  - Intranuclear viral inclusions
- **Condyloma acuminatum**
  - Epith dysplasia present
  - Koilocytes more likely
  - Usually sessile
- **Verruform xanthoma**
  - Foamy cells present
- **PVL (proliferative verrucous leukoplakia)**
  - Dysplasia

**Verruca vulgaris**

**Papilloma: Management**

- Conservative surgical excision
  - Recurrence unlikely
  - No reported transformation into malignancy
- Intraoral verruca vulgaris
  - Conservative surgical excision
  - Liquid nitrogen cryotherapy
  - Topical application of keratinolytic agents (containing salicylic acid & lactic acid)

**Keratoacanthoma**

- Self-healing carcinoma or pseudocarcinoma
- **Aetiology**: Probably from infundibulum of hair follicles due to
  - Sunlight
  - HPV 26 and HPV 37
  - Hereditary (esp in case of multiple lesions)
  - Chemical carcinogens
- Occurs with increased frequency in
  - Immunosuppression
  - Muir-Torre syndrome (sebaceous neoplasms & GIT carcinomas along with keratoacanthoma)

**Keratoacanthoma: Features**

- **Age predilection**: elderly (> 45 yrs)
- **Gender predilection**: More in males
- **Site predilection**: Lip vermilion
- Firm, non tender, well-demarcated, dome-shaped nodule with a central plug of keratin *(the last may not be seen in intraoral type)*
- Central core has an irregular crusted surface
- Rapid growth; 1-2 cm within 6 weeks
- **Variants**:
  - Ferguson-Smith type: Hereditary, no spont involution
  - Grzybowski type: Small papules of skin & upper GIT; assoc with internal malignancy
Keratoacanthoma

- Squamous cell carcinoma: In keratoacanthoma
  - Acute angle between crater and normal epithelium
  - Rete pegs show pushing margins rather than invading islands
  - No dysplastic features (more of dyskeratosis)

- Molluscum contagiosum
  - Presence of viral inclusions (molluscum bodies)

Keratoacanthoma: Histopathology

- Does not extend below sweat glands in skin lesions or into muscle in vermilion lesions

Keratoacanthoma: Differential Diagnosis

Keratoacanthoma: Management

- Spontaneous regression
- Surgery necessary for confirmation of diagnosis
- Recurrence may occur

Molluscum contagiosum

- The term naevus is used for hamartomas (developmental, tumour-like malformations of skin or mucosa). They may be
  - Congenital naevi or birthmarks: Naevi that develop before or shortly after birth.
    - Small naevi 3-5 cm
    - Garment naevi >10 cm
  - Acquired naevi: Naevi that develop later in life.
  - Naevi may be derived from the
    - outside layers of the skin (epithelial naevi) or
    - deeper layers (dermal/subcutaneous naevi)
### Types of Naevi: Epithelial

<table>
<thead>
<tr>
<th>Type</th>
<th>Examples</th>
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</table>
| Melanocytic naevi | • Congenital melanocytic naevi  
|  | • Café-au-lait macules  
|  | • Speckled lentiginous naevus  
|  | • Acquired naevi (moles)  
|  | • Blue naevi  
|  | • Halo naevi  
|  | • Naevus of Ito & naevus of Ota  
|  | • Spitz naevus  
|  | • Mongolian spot  
|  | • Haemangiomas  
| Epidermal naevi | • Becker’s naevus (pigmented hairy epidermal naevus)  
|  | • Inflammatory linear verrucous epidermal naevus  
|  | • Linear porokeratosis  
|  | • Sebaceous naevus (organoid naevus)  
| Follicular naevi | • Comedone naevus  
|  | • Basal cell naevus with comedones  

### Types of Naevi: Dermal / Subcutaneous

<table>
<thead>
<tr>
<th>Type</th>
<th>Examples</th>
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| Haemangiomas | • Strawberry haemangioma (capillary naevus)  
|  | • Cavernous haemangioma  
|  | • Blue rubber bleb naevus  
|  | • Acquired multiple haemangioma  
| Vascular malformations | • Port wine stain (naevus flammeus)  
|  | • Sturge-Weber Syndrome  
|  | • Salmon patches (stork bites)  
|  | • Reticulate vascular naevus / angioma serpiginosum  
|  | • Angiokeratoma circumscriptum  
| Connective tissue naevi | • Collagenoma  
|  | • Shagreen patch  
|  | • Elastomas  
|  | • Buschke-Ollendorf syndrome  
|  | • Lymphangioma circumscriptum  
|  | • Mastocytoma  
|  | • Dermoid cyst  
|  | • Thyroglossal cyst  
|  | • Bronchogenic cyst  

### Oral Naevi

1. 1st case of oral naevus in 1943 by Ackermann & Field
2. Frequently on skin but rare in the oral cavity
3. Classified into 4 categories:
   1. Junctional naevi: When nevus cells are limited to the basal cell layer of the epithelium.
   2. Compound naevi: If the cells are in the epidermis and connective tissue.
   3. Intramucosal naevi: When nests of nevus cells are entirely in the connective tissue.
   4. Blue cell naevi: Gray-blue to bluish black dome-shaped naevi
5. Spindle cell / epitheloid cell naevus is not seen in the oral cavity.

### Naevi: Features

- **Age predilection:** Cutaneous naevi develop in patients < 35 yrs; 85% of oral naevi are in patients < 40 yrs; 20 – 40 yrs
- **Gender predilection:** More in females (F:M ratio 1.5:1)
- **Site predilection:** Palate, Buccal mucosa, Gingiva, Lips
- **Race predilection:** More in whites than in Asians or blacks
- **Most common type:** Intramucosal followed by blue nevus
- **Pigmentation:** 85% of oral naevi are pigmented; 15% are amelanotic (sessile growths that resemble papilloma)
- **Size:** 75% of naevi are < 0.6 cm; naevi > 1.3 cm are seen in 5%

### Intramucosal Naevus

- Characterized by a proliferation of naevus cells microscopically within the underlying connective tissue.
- young patients
- Asymptomatic, pigmented brown to black
- slightly elevated papule or flat nodule
- grows slowly; less than 1 cm
- usually the hard palate or gingiva
**Intramucosal naevus**

- Characterized by a proliferation of naevus microscopically within the basal cell layer of the surface epithelium and the underlying connective tissue.
- More common on skin
- Pigmented papule or macule
- Hard palate or gingiva

**Compound naevus**

- Characterized by a proliferation of naevus cells microscopically within the basal cell layer of the surface epithelium.
- Cells dropping down into connective tissue – “abtropfung” – may undergo transformation to melanoma
- Usually on the skin
- Hard palate or gingiva
- Brown to black macular lesion

**Junctional naevus**

- Characterized by a proliferation of naevus cells microscopically within the basal cell layer of the surface epithelium.
- Cells dropping down into connective tissue – “abtropfung” – may undergo transformation to melanoma
- Usually on the skin
- Hard palate or gingiva
- Brown to black macular lesion

**Blue (Jadassohn-Tièche) naevus**

- A benign pigmented lesion that presents as a gray-blue to bluish black dome-shaped papule or as a flat macule
- Two types:
  - Common blue naevus – melanin producing spindled and fusiform dendritic cells in the connective tissue parallel to the normal overlying epithelium
  - Cellular blue naevus – has in addition a large, round or spindle cell with pale vacuolated cytoplasm in alveolar pattern
- Children & young adults, female predilection
- Most often on the hard palate
- 1-3 cm in diameter
Cellular blue naevus

Naevus cells vs Melanocytes
- Lack the dendritic processes
- Have their cytoplasm ovoid, rounded, or spindle shaped
- Vesicular nucleus, pale cytoplasm
- Able to form nests and clusters of cells
  - Arrangement in alveolar pattern - thèques
- Have the ability to migrate from the basal cell layer into the underlying submucosa; As they penetrate into the submucosa, their pigmentation diminishes

Histopathology
Oral nevi are composed of 4 main types of nevus cells.
- **Type A cells**: Found in the superficial portion of the nevus and are larger, rounded cells that often contain melanin. These cells are epithelioid and contain abundant pink cytoplasm and a large round or oval nucleus.
- **Type B cells**: Smaller and resemble lymphocytes and are usually found in the midportion of nevi.
- **Type C cells**: Resemble fibroblasts and are primarily found in the lower portions of the lesions.
- **Type D cells**: Naevus giant cells that are multinucleated, and these cells are often scattered throughout the lesion. In oral nevi, type A and B cells are more common than type C cells. In nonpigmented nevi, type A cells are often absent.

Naevi: Differential Diagnosis
- **Melanotic macules**: Usually flat (whereas 80% of nevi are elevated)
- **Amalgam tattoo**: Usually flat; assoc. with amalgam restoration
- **Smoker’s melanosis**: Usually anterior gingiva & most often occurs in women who smoke and take oral contraceptives
- **Vascular lesions**: Blanch on compression
- **Malignant melanoma**: Associated with diffuse areas of pigmentation, possible ulceration, nodularity, variegation in color, irregular outline

Naevi: Management
- All oral naevi should be biopsied to rule out malignant melanoma
- Recurrence rare
- Prognosis of oral nevi is excellent