

**Benign oral epithelial tumors**

**1- Squamous cell papilloma**

**2- Verruca vulgaris (common wart)**

**3- Condyloma acuminatum (venereal wart)**

**4- Focal epithelial hyperplasia (Heck's disease)**

The main tumors derived from oral epithelium are the squamous cell papilloma and squamous cell carcinoma. The squamous cell papilloma is a benign neoplasm, but a variety of virally induced epithelial hyperplasias, such as viral warts, may mimic the papilloma clinically. Basal cell carcinoma does not occur in the oral cavity but may present on the lip and involve the vermilion border.

***Squamous cell papilloma and other benign lesions associated with human papilloma (HPV)***

HPV are DNA viruses and more than 75 types are now recognized, of which at least 16 have been isolated from oral lesions. The majority are low-risk types (e.g. 6, 11, 13, and 32) which are associated with benign lesions of the skin and oral mucosa, such as verruca vulgaris, condyloma acuminatum, and focal epithelial hyperplasia. However, certain types of HPV may be present in clinically healthy oral mucosa and the identification of HPV in a lesion does not necessarily imply a causal relationship.

**1- Squamous cell papilloma**

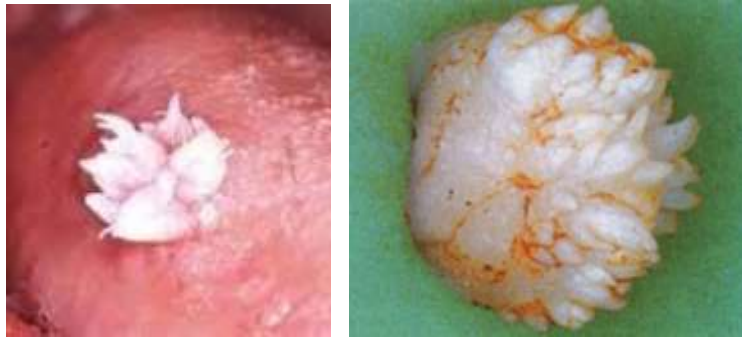
Etiology:

- A benign epithelial proliferation
- HPV is found in most cases; several subtypes have been identified, especially HPV 6 and 11.

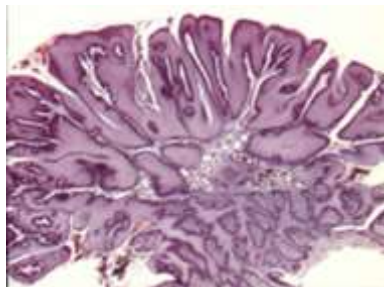
Clinical Presentation

This common benign tumor is usually a solitary lesion and can occur anywhere on the oral mucosa. Most occur in adults but they may also be seen in children. Papillomas vary in size and may be either pedunculated or sessile. They present as

warty or cauliflower-like growths with a white or pink surface depending on the amount of keratin present.



Histological examination shows finger-like processes of proliferating stratified squamous epithelium supported by thin cores of vascular connective tissue. The epithelium may show hyperkeratosis. Mitotic figures are often seen in the basal layer of the epithelium, but features of epithelial dysplasia are not present. Malignant change has not been described in a squamous cell papilloma of the oral mucosa and it is not a premalignant lesion.



#### Diagnosis

- Clinical appearance & Biopsy features

#### Differential Diagnosis

- Condyloma acuminatum
- Verruca vulgaris
- Focal epithelial hyperplasia
- Verrucous carcinoma

#### Treatment

- Surgical excision

Prognosis

- Low recurrence rate

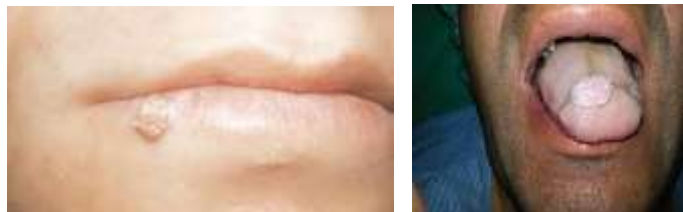
## 2- *Verruca vulgaris* (common wart)

Etiology

Infection of mucosal epithelium by members of the human papillomavirus group— usually HPV 2, 4, 6, or 11

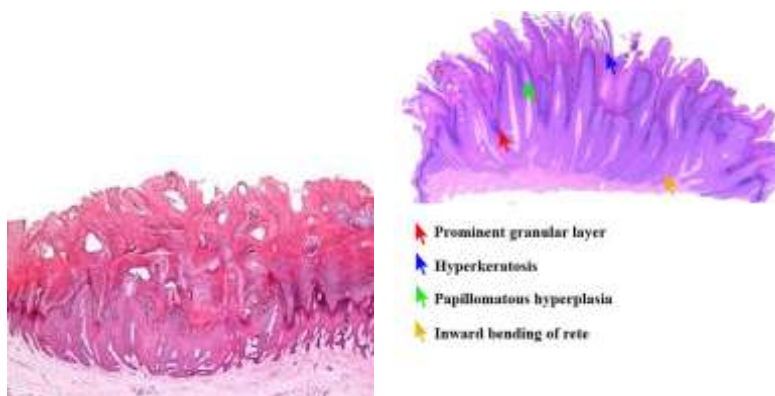
Clinical Presentation

Clinically, these lesions present as squamous cell papilloma's and may be sessile or pedunculated, single or multiple. They appear white because of hyperkeratosis and are seen most often in children when they may be associated with auto inoculation from warts on the fingers and lips.



Microscopic Findings

They consist of papillary processes of proliferating, acanthotic, hyperkeratotic squamous epithelium supported by thin cores of vascular connective tissue. The hyperplastic rete ridges around the margins usually slope inwards towards the corner of the lesion. Common warts on the skin are usually associated with HPV types 2 or 4 infection.



## Diagnosis

- Clinical appearance, Microscopic feature

## Differential Diagnosis

- Focal epithelial hyperplasia
- Keratoacanthoma
- Papillary squamous carcinoma
- Squamous papilloma
- Condyloma acuminatum.

## Treatment

Excision, Laser surgery, Cryosurgery, Electrosurgery

## Prognosis

- Excellent in immunocompetent host
- Recurrence not uncommon.

## **3- *Condyloma acuminatum* (venereal wart)**

### Etiology

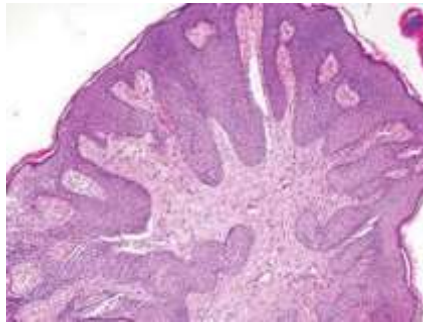
- A sexually transmitted disease
- Associated with human papillomavirus (HPV) types 6, 11, 16, and 18
- Can result in autoinoculation of other sites via trauma
- Lesions located at the site of contact/traumatic event

Characteristically these warts occur in the anogenital region but they may be seen on the oral mucosa.

Clinically, they present as multiple pink nodules which grow and coalesce forming soft, pink, pedunculated or sessile papillary lesions similar in color to the surrounding mucosa. In some patients, they are an oral manifestation of HIV infection.



Histologically the dominant epithelial feature is a prominent acanthosis with marked broadening and elongation of the rete ridges. Keratinization is not a feature although there may be a surface layer of parakeratotic cells. Condyloma acuminatum is associated With HPV types 6.



## Diagnosis

- Location and appearance
- Demonstration of koilocytotic cellular changes on biopsy
- In situ hybridization or polymerase chain reaction reveals specific HPV subtype
- Electron microscopy demonstrates intranuclear virions

N.B. A Koilocyte is a squamous epithelial cell that has undergone a number of structural changes, which occur as a result of infection of the cell by human papillomavirus.

Koilocytes may have the following cellular changes:

- Nuclear enlargement (two to three times normal size)
- Irregularity of the nuclear membrane contour
- A darker than normal staining pattern in the nucleus, known as Hyperchromasia
- A clear area around the nucleus, known as a perinuclear halo.

## Differential Diagnosis

- Focal epithelial hyperplasia
- Multiple intraoral verruca vulgaris
- Squamous papilloma

## Treatment

Conservative removal, Conventional surgery, Laser ablation, Topical podophyllin

## Prognosis

- Recurrences common
- Contagiousness and autoinoculation are considerations.

## ***4- Focal epithelial hyperplasia (Heck's disease)***

### Etiology

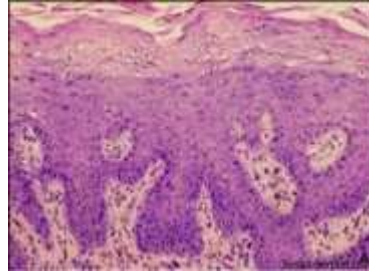
- A viral infection (HPV 13 or 32), usually found in childhood
- Familial/ethnic clustering often noted, probably secondary through horizontal viral transmission.

This rare disease was originally described in native North Americans and India but occurs in other ethnic groups and in some immunocompromised patients.

It is characterized by multiple small elevated epithelial plaques or polypoid lesions most frequently involving the lower lips and buccal mucosa.



Histological examination shows hyperparakeratosis and acanthosis of the oral epithelium. Broadened, anastomosing epithelial ridges with occasional superficial koilocytotic changes.



## Diagnosis

- Multiple, characteristic lesions
- Biopsy findings
- In situ, deoxyribonucleic acid hybridization to demonstrate HPV subtype
- Ultrastructural localization of intranuclear virions

## Differential Diagnosis

- Condyloma acuminatum
- Multiple verruca vulgaris

## Treatment:

None; lesions usually regress spontaneously

- Excision if esthetic needs demand
- Intralesional interferon therapy

## Prognosis

- Excellent
- No reported malignant transformation.

## **5- Keratoacanthoma**

### Etiology

- Unknown, may be related to several factors, as follows:
- Viral—HPV subtypes 11, 13, 24, 33, and 57
- Altered expression of cell cycle proteins including cyclin E, p53, PCNA
- Keratinocyte dedifferentiation reflected in deficient desmoglein production

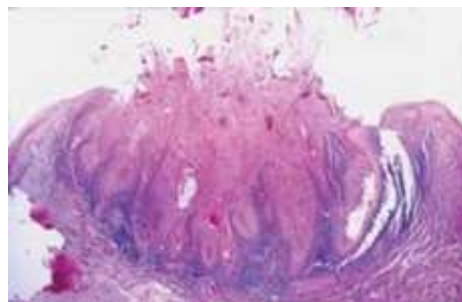
- Immunosuppression
- Sun damage
- May represent a highly-differentiated form of squamous cell carcinoma
- May indicate underlying alimentary neoplasia (Muir-Torre syndrome).

Keratoacanthoma is a common low-grade (unlikely to metastasize or invade) skin tumor that is believed to originate from the neck of the hair follicle.

The defining characteristic of Keratoacanthoma is that it is dome-shaped, symmetrical, surrounded by a smooth wall of inflamed skin, and capped with keratin scales and debris. It grows rapidly, reaching a large size within days or weeks, and if untreated for months will almost always starve itself of nourishment, necroses (die), slough, and heal with scarring. Keratoacanthoma is commonly found on sun-exposed skin, often face, forearms and hands.



Under the microscope, keratoacanthoma very closely resembles squamous cell carcinoma. In order to differentiate between the two, almost the entire structure needs to be removed and examined. While some pathologists classify Keratoacanthoma as a distinct entity and not a malignancy, about 6% of clinical and histological keratoacanthomas do progress to invasive and aggressive squamous cell cancers; some pathologists may label Keratoacanthoma as "well-differentiated squamous cell carcinoma, keratoacanthoma variant", and prompt definitive surgery may be recommended





## Diagnosis

- Clinical evaluation, follow-up

## Differential Diagnosis

- Squamous cell carcinoma
- Warty dyskeratoma
- Verruca vulgaris
- Condyloma acuminatum
- Squamous papilloma

## Treatment

- Observation and careful follow-up
- Local excision
- Cryotherapy
- Intralesional chemotherapy (methotrexate, 5-fluorouracil, or bicomycin)

## Prognosis

- Excellent

