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Case Study

SQUAMOUS PAPILLOMA OF THE RETRO COMMISSURE AREA: A CASE REPORT AND REVIEW OF LITERATURE

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Abstract

Squamous papilloma is a HPV (Human Papilloma Virus) induced benign proliferation of stratified squamous epithelium. The lesion is of low virulence but of great clinical significance due to its variable clinical behavior. We present a report of squamous papilloma along with its review of literature which didn't have the classic clinical appearance of papilloma but the histologic features were found to be consistent.

Keywords: Cytopathic effect, Human Papillomavirus, Papilloma- squamous

Introduction

Oral papillary lesions are a heterogeneous group and present a range of clinical and histologic appearances. Squamous papilloma is one such benign epithelial tumor which can be seen in oral cavity and oropharynx. It is considered fourth most common oral mass and roughly accounts for 3-4 % of oral soft tissue lesions.[1]

It presents as an exophytic growth (papillary or verrucous) with a pedunculated base and roughened, cauliflower like surface appearance. It results due to a benign proliferation of the stratified squamous epithelium and most common intra oral sites of occurrence are hard and soft palate, uvula, tonsil and epiglottis.[2] Histologically, they show a complex pattern of finger like projections with a central vascular zone, the papillary projections are covered by acanthotic stratified squamous epithelium depicting a normal pattern of maturation and occasionally basilar hyperplasia with plenty of koilocytes.[1,3]

The lesions are usually associated with HPV 6 &11 but have a low infectivity rate and are not contagious. They are often asymptomatic and have a slow growth potential. Recurrence is rare after conservative excision.

The lesion exhibits a spectrum of clinical appearance and there is a good chance of misdiagnosing it for something as sinister as carcinoma or other HPV associated lesions. Differential diagnosis includes verruca vulgaris, verruciform xanthoma, condyloma acuminatum and focal epithelial hyperplasia.[4,5] We present a case of

squamous papilloma which resembled traumatic fibroma clinically and was treated with surgical excision.

Case Report

A 36 years old female patient visited the Department of Oral Medicine and Radiology, Dayananda Sagar College of Dental Sciences, Bangalore with a painless growth on the right retro commissure area. The lesion was exophytic, pale pink, had a smooth surface with a pedunculated base and measured approximately 2x3 cm in size (Figure1). It had a soft-to-firm consistency and was non-tender on palpation. History of the growth revealed that the patient had first noticed the lesion 6-8 months back which progressively increased in size up to the present state and was causing discomfort in mastication. There was no other associated medical history or history of such growth elsewhere in the body. Sharp buccal cusps of the adjacent premolar teeth (44, 45) were considered the source of local irritation and the provisional diagnosis of traumatic fibroma was made. Differential diagnosis included was mature pyogenic granuloma and squamous papilloma.

Local anesthesia (2% lignocaine hydrochloride with adrenaline 1:80000 concentration) was used and the lesion was completely excised (Figure 2).The specimen so obtained was fixated in 5 ml 10% formalin and sent for histopathological examination. Haemotoxylin and eosin stained sections showed parakeratinized stratified squamous epithelium arranged in finger like projections with a fibrovascular connective tissue core and chronic inflammatory cells. The keratin layer appeared thickened in some areas with parakeratin filled clefts (Figure 3). Koilocyte like cells were seen as well. The overall impression was suggestive of squamous papilloma (Figure 4).

Figure 1: Intraoral examination showing an exophytic, pale pink lesion with a smooth surface, in the right retro commissure area.

Figure 2: Post-operative picture showing good healing at the biopsy site.

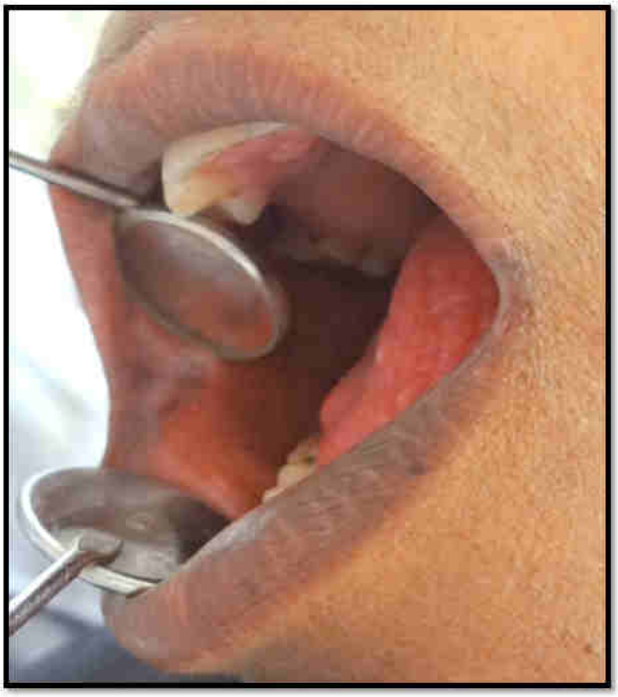


Figure 3: Histopathological section showing parakeratinized stratified squamous epithelium thrown into finger like projections with fibrovascular connective tissue core.

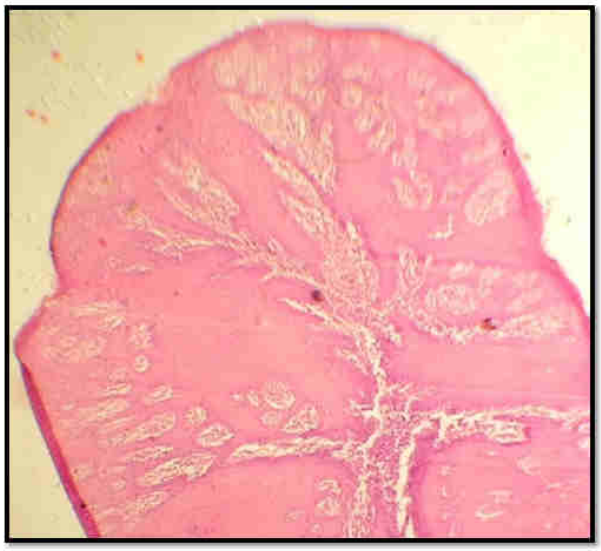
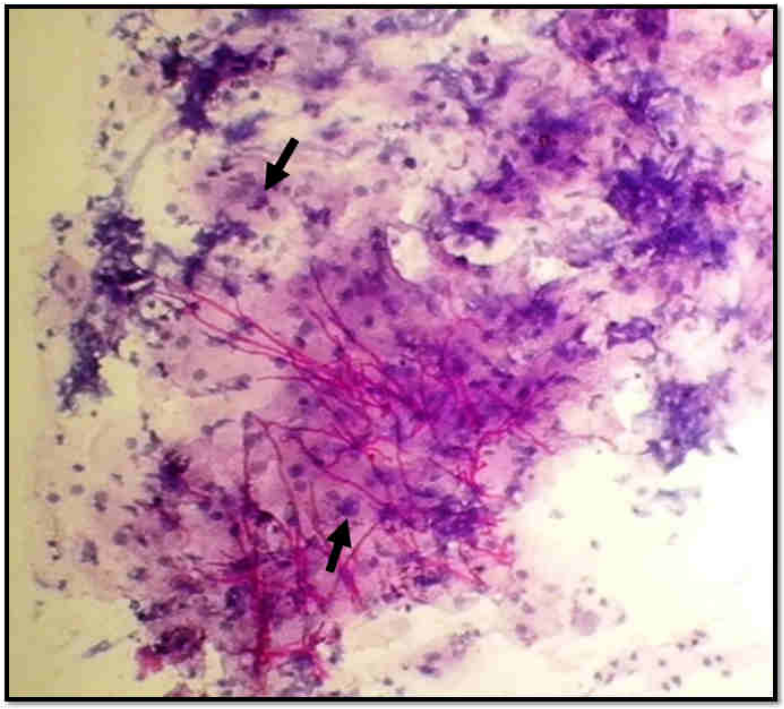


Figure 4: Koilocyte like cells seen in the squamous epithelium.



Discussion

Clinical Features

Papillary lesions of oral mucosa have a wide variability in clinical & histologic appearance, including benign and malignant spectrum. Squamous papilloma is a benign mucosal growth seen as a well demarcated lesion measuring less than 1 cm in size. It is seen in 30-50 years of age group with a slight male preponderance. Hallmark of the lesion is frond like projections leading to "cauliflower like" pebbled surface. [6] Most common site of occurrence are vermilion portion of the lips, intraoral mucosal sites with predilection for hard palate, soft palate uvula and anterior tongue.[7,8] Squamous papilloma has been divided into two types on the basis of their clinical appearance: Isolated-solitary, which is seen in adult oral cavity and multiple-recurring type which is seen in pediatric patients with laryngotracheobronchial involvement.[6]

The clinical features and location of the lesion in the present case were not in agreement with the classical appearance of oral squamous papilloma. There was melanin pigmentation noted in the mucosa adjacent to the lesion which was accorded to the presence of a constant source of irritation. Histopathology report was pertinent in establishing the final diagnosis.

Association with HPV

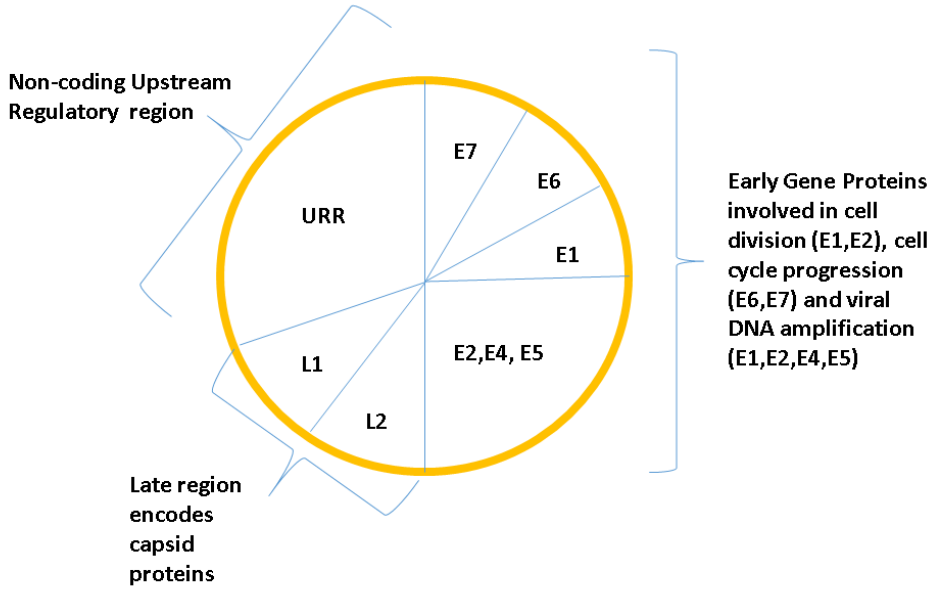
HPV is a small DNA virus that belongs to family papovaviridae. It has an affinity exclusively for human epithelial cells and is known to cause variety of skin and mucosal lesions. It is divided into High risk (HR) and low risk (LR) subtype. There are more than 120 identified HR genotypes that are associated with cervical cancers, anogenital malignancies and HNSCC (head and neck squamous cell carconimas).[2] HR HPV 16, 18, 31, 33 and 35 have been established to bring about transformation of oral epithelial cells.[8] Low risk (HPV 6, 11, 2, 57) are involved with condyloma acuminata, squamous papillomas, verruca vulgaris, focal epithelial hyperplasia (Heck's disease) etc. Its association with oral squamous papilloma varies from 13-68%.[9] Study by McCord et al concluded that simple squamous papilloma cases are rarely HPV positive and low risk HPV infection leads to lesions with atypical clinical/histological

presentation.[5] There has been an increase in the prevalence of HPV associated oral infections in the recent past which can be attributed to changes in sexual practices. The population group infected also varies depending on geographical locations.[9] Several Indian studies have shown variation in prevalence of HPV ranging from 0-74%. Study by Balaram et al[10] detected non-oncogenic HPV 6 & 11 along with oncogenic subtypes 16 & 18 and reported a high prevalence of 74%. It has also been reported that the virus burden is higher in lower socioeconomic status and in low income countries.[11]

Life cycle of HPV

HPV infections can have two basic clinical course, a latent infection that can persist for years or proliferation of the epithelial layers leading to a benign papilloma or wart.[8] HPV has a circular ds- DNA which codes for 6 early proteins (E1-E7) and 2 late proteins (L1, L2). The early open reading frame (ORF) proteins control the life cycle of virus and the late ORF encodes capsid protein (Figure 5). HPV infection starts when the virion enters the basal epithelial cells. HPV genome exists as multiple episomal copies inside the nucleus of the infected cells and E1,E2 protein expression lead to early viral DNA transcription. In HPV induced benign lesion, there is proliferation of all the layers of epithelium mediated by E6, E7 proteins which manifests histologically as acanthosis, hyperkeratosis and koilocytosis.[12] Koilocytes are mononucleated or binucleated poorly keratinized squamous cells with asymmetric, hyperchromatic nuclei and perinuclear halo.[13] They can be seen in both low risk and high risk HPV infections and collaborative interactions between E5 and E6 are responsible for the phenomenon.[14] Koilocytes are considered pathognomonic feature of HPV infections and this cytopathic effect was also noted in our case.

Figure 5: Schematic representation of the circular genome of Human Papilloma Virus



Differential Diagnosis:

Verruca Vulgaris: It is commonly seen on the skin and is caused by cutaneous HPV subtype 2 and 57. Oral lesions clinically resemble papilloma and are seen involving the lips, gingiva and hard palate as multiple, clustered lesions, white in color and have a narrow stalk.[2,15.16]

Verruciform Xanthoma: This lesion has predilection for gingiva and alveolar ridge.

Histologically, foamy histiocytes are evident in the sub-epithelial connective tissue which is the major point of differentiation from papilloma.[2,15,16]

Condyloma acuminata: It is a comparatively large and multifocal lesion which has a broader base as compared to often pedunculated papilloma. Histologic features are papillary hyperplasia, proliferation of rete ridges and vacuolated cells with a hyperchromatic nucleus seen in stratum spinosum.[2,17]

In case of multiple growths, **focal epithelial hyperplasia (Heck's disease)** should be taken into account which presents with numerous, well circumscribed, flat and sessile papules associated with HPV type 13 and 32.[2]

In our case, the appearance was not in accordance with the established clinical features. The surface appeared smooth, sans any characteristic finger like projections. Hence, mature **pyogenic granuloma** was considered in the differential diagnosis. It is smooth, lobulated exophytic lesion that commonly occurs on the gingiva, tongue and lower lip. In early stages, lesion has a bright red color due to increased vascularity and inflammation but in the mature stage, color changes to pink due to collagen deposition.

Treatment and Prognosis:

There are several techniques to test the presence of HPV. Conventional histopathology to check for cytopathic effects is the simplest and easiest available method which was used in the present case. HPV genotyping can be done by molecular biologic methods like in situ hybridization, polymerase chain reaction (PCR).[2] Since these lesions have low virulence and recurrence is rare, surgical excision is the treatment of choice. Apart from this, laser ablation, electrocautery or cryosurgery can be used as well but care should be taken not to aerosolize the virus particles.[2,18]

Conclusion: Oral squamous papilloma is a benign HPV associated lesion which can have variable clinical appearance and needs to be differentiated from other papillary lesions. The treatment can be individualized based on the site, size and number of lesions. Complete excision from the base is mandated to avoid any recurrence.

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