Introduction

Squamous papilloma is a benign lesion exhibiting exophytic verrucopapillary growth. These are the most common benign epithelial tumors of the oral mucosa which account for 3–4% of all the biopsied lesions. The common sites of occurrence include the dorsum and lateral borders of tongue, followed by palatal mucosa, gingiva, buccal mucosa, lower lip, and uvula. Although the exact etiology is not known, trauma and a persistent infection of human papillomavirus (HPV) are suggested. Some studies suggested that the presence of HPV may be an incidental finding which is not related to the etiology of squamous papilloma. Majority of HPV-associated lesions manifest as exophytic growths with finger-like projections and are mostly associated with low-risk HPV Types 6, 11, 13, and 32 and high-risk HPV Types 16, 18, 31, 33, and 35. The high-risk types pose a greater risk of malignant transformation. HPV-associated lesions include anogenital warts, cancer of the oropharynx, dysplasia, and cervical cancer.

Case Report

A 4-year-old male child accompanied with his parents reported to the outpatient department of our college with a chief complaint of multiple decayed teeth along with a small tissue growth in the upper front teeth region for 3 months. His past medical and dental history were insignificant. All the vitals were in the normal range, and growth milestones were also normal.

The patient was apparently normal 3 months back after which his parents noticed a small growth in his upper front teeth region which gradually increased to its present size. The lesion is asymptomatic.

On intraoral examination, a solitary exophytic growth was evident on the palatal gingival on the mesiopalatal aspect of 51 with grossly decayed 51, 52, 53, 54, 61, 62, 64, 74, and 85, and pulp polyps in relation to 62 and 54 were observed [Figures 1 and 2].

There was no extraoral finding. On inspection, the exophytic growth was a solitary lesion with a sessile base, measuring about 1.5 × 8 mm in diameter and pale pink with irregular papillary projections on its surface. On palpation, the lesion was soft to firm in consistency, and non-tender and showed no bleeding or ulceration. A provisional clinical diagnosis

Keywords: Clinical features, diagnosis, etiology, histopathology, human papillomavirus, koilocytes, pediatric patient, squamous papilloma

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CASE REPORT

Oral squamous papilloma in a pediatric patient: A case report and review

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Abstract

Squamous papillomas are benign exophytic lesions that are commonly found in the oral cavity. Although the exact etiology of the lesion is not known, an association with human papillomavirus (HPV) infection is suggested. On the contrary, some recent studies have showed no correlation between HPV and squamous papilloma. This article presents a case of 4-year-old male patient who reported with a papillary lesion on the palatal gingival which was diagnosed as oral squamous papilloma by histopathologic examination.
of squamous papilloma was made. Excisional biopsy was performed [Figure 3], and the tissue was sent for histopathologic examination. Histopathologic examination of the submitted tissue specimen revealed hyperplastic parakeratinized stratified squamous epithelium with papillary projections on the surface enclosing thin fibrovascular connective tissue cores suggestive of squamous papilloma. Chronic inflammatory cells were evident in the connective tissue cores [Figures 4 and 5]. The underlying connective tissue was fibrocellular with moderate vascularity.

**Discussion**

Oral squamous papilloma is a painless, well-defined exophytic growth presenting with a sessile or pedunculated base. Clinically, these lesions appear pink to white depending on the degree of keratinization, usually measuring <1 cm in size and show characteristic finger-like surface proliferations. Most common sites of occurrence in the oral cavity are tongue and palate.
This lesion is most often seen in individuals with an age range of 20–50 years without any gender predilection. Squamous papillomas are classified into two types: isolated-solitary and multiple-recurring type. Solitary lesions are common in adults, and multiple lesions are more common in children. These lesions are usually painless unless large enough to cause occlusal interference or difficulty in eating.

HPV infection is thought to play an important role in the development of squamous papilloma. Low-risk types of HPV 6 and 11 are usually associated with oral squamous papilloma. Squamous papillomas are often diagnosed in the second to fourth decade of life. It is suggested that these lesions are more frequent in people with active sexual life. Squamous papilloma has been reported in children of <1 year and children younger than 19 years of age with significant level of HPV infection. There are many suggested ways of viral transmission in children. A vertical transmission of HPV infection from mother to child prenatally through hematogenous route or by aspiration of amniotic fluid during child birth is suggested. Postnatal transmission due to auto or heteroinoculation by genital, sexual, or casual social contact and transmission through saliva and oral sex are suggested for oral lesions. Possibility of sexual abuse should be ruled out as well. On the contrary, recent studies have reported no correlation between the practice of oral sex and HPV infection. Squamous papillomas have been reported in immunocompromised patients such as HIV patients who may show recurrent lesions. The presence of papillomas in other mucocutaneous surfaces should also be evaluated. No such features were present in this case, and all possibilities were ruled out by obtaining a detailed history from the parents which suggested a non-sexual transmission mechanism.

Solitary oral squamous papilloma may clinically resemble verruca vulgaris, verruciform xanthoma, papillary hyperplasia, and condyloma acuminatum. Larger lesions may resemble verrucous carcinoma, proliferative verrucous leukoplakia, and squamous cell carcinoma. Differentiating squamous papilloma from these high-risk lesions is essential. Verruciform xanthoma may resemble oral squamous papilloma but has unique site of occurrence in the gingival and alveolar mucosa and presence of foam cells histologically. A cause and effect relationship (such as ill-fitting acrylic denture) should be evaluated for inflammatory papillary hyperplasia. Condyloma acuminatum is larger with broad base compared to the oral squamous papilloma and associated with skin lesions. In addition, focal epithelial hyperplasia (Heck’s disease) presents clustered or multiple squamous papillomas. Slow growth and absence of epithelial dysplasia differentiate squamous papilloma from squamous cell carcinoma.

Histological features of squamous papilloma reveal hyperplastic epithelium with delicate fibrovascular cores, and supporting stroma may show chronic inflammatory cells. Some cellular atypia, basilar hyperplasia, and increased mitotic activity in basal layer may be seen and may mislead to epithelial dysplasia. HPV-altered cells, known as koilocytes, may or may not be seen. The presence of koilocytes indicates virally altered state. Koilocytes reveal a pyknotic nucleus with irregular membrane and perinuclear halo representative of viral inclusion with condensation of cytoplasm in the periphery.

Viral presence can be confirmed by polymerase chain reaction. The viral DNA can also be detected in the tissue by in situ hybridization by the use of radioisotope-labeled specific probes. Viral inclusions may be appreciated by special stains such as Macchiavello stain. Electron microscopy, immunohistochemistry or molecular biology techniques such as Southern blot and dot spot hybridization, enzyme-linked immunosorbent assay, and indirect immunofluorescence are other techniques of viral identification.

A complete surgical excision including a rim of normal tissue is the treatment of choice. Electrocautery, cryosurgery, intralesional injections of interferon or laser ablation are other suggested treatment methods. These methods have advantages like minimum bleeding, less need for anesthesia, faster postoperative period and less trauma compared to conventional surgery. The recurrence rate is very low for the solitary type compared with multiple lesions. A histopathological examination to rule out the dysplastic changes or frank malignancy is essential.

In the present case, a final diagnosis of squamous cell papilloma was made based on the clinical presentation and histopathology. After 6 months of follow-up, the patient has no signs of recurrence.

**Conclusion**

Oral squamous papilloma is a common benign lesion encountered in the clinical practice. Although the exact etiology is unknown, association of HPV infection is suggested. These benign lesions may resemble high-risk lesions such as squamous cell carcinoma. Hence, differentiating papillomas from other lesions are important. Early diagnosis and prompt treatment is necessary to avoid complications.

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