Squamous cell papilloma of the gingiva with a “garlanding a tooth” appearance: Report of an unusual case

Pratiti Datta, Akshyata Panda, Sthitaprajna Lenka, Anurag Satpathy

Abstract:
Squamous cell papilloma of the gingiva is a benign, asymptomatic, exophytic nonplaque-associated gingival lesion caused by human papillomavirus. It affects several areas of the oral cavity with a relatively lower predilection for gingiva. The finger-like clinical presentation may be scary, misleading and may be confused with other lesions. This report presents a case of squamous cell papilloma of the gingiva. We report an unusual case of squamous papilloma of the gingiva with an unusual “garlanding a tooth” appearance.

Key words: Benign, gingiva, human papilloma virus, squamous cell papilloma

INTRODUCTION
Squamous papilloma is one of the benign lesions of the oral cavity and is the fourth most common lesion of occurrence. Although oral squamous cell papilloma can affect tongue, skin, pharynx, larynx, and lip, its appearance on the gingiva is relatively rare. The etiology of this condition has been attributed to human papillomavirus (HPV), and the lesion progresses due to proliferation of the stratified squamous epithelium. HPV-6, HPV-11, HPV-13, and HPV-32 are the major viruses associated with this lesion. Two types of squamous papilloma have been reported; multiple reoccurring and isolated solitary. Based on the gender, squamous cell papilloma has a higher prediction to occur in males as compared to females. Clinically, it is usually asymptomatic with varied rate of recurrence. A complete excision of the lesion is usually the treatment of choice. We report an unusual case of squamous papilloma of the gingiva with an unusual “garlanding a tooth” appearance around a tooth.

CASE REPORT
A 52-year-old male patient reported to the outpatient department with a chief complaint of growth in the gums in the lower left back tooth region. The lesion was first noticed by the patient 2 years back as a small white lesion on the gingiva, which slowly and progressively enlarged to its present size. There was no history of the presence of a similar lesion elsewhere in the oral cavity or any other part of the body. He had a habit of occasional pan chewing for 7–8 years. His medical and family histories were noncontributory.

On examination, a localized solitary exophytic lesion involving the marginal and attached gingiva was seen on the keratized gingiva of entire facial aspect of the mandibular left second premolar. The lesion presented as a white cauliflower-like growth with tiny finger-like projections. The size of the lesion was 6 mm × 10 mm: apicocoronally and mesiodistally, respectively. Overall, a florid growth with wide base circumscribing the entire facial aspect typically gives a lesion a “garlanding a tooth” appearance around the tooth no. 35 clinically. It was nontender, and there was no gingival bleeding or exudation on pressure associated with it.

Intraoral periapical radiograph revealed a slight crestal bone loss in relation to 35 and 36. The differential diagnosis included fibroma, epulis, and papilloma. Serological investigations were within normal limits. Test for HIV was negative.

The patient was educated about the lesion and his consent was obtained before the surgical excision procedure. An antiseptic solution was applied to the new creations are licensed under the identical terms. This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms. For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

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used topically extrorally as well as intraorally at the surgical site. The area was anesthetized with local infiltration with 2% lignocaine solution. The lesion was completely excised with 2 mm of the healthy gingival margin [Figure 4]. A pressure pack was applied to prevent excessive bleeding initially; later, periodontal dressing was placed on the surgical site to cover the exposed surgical wound. The patient did not report back after excision, and the follow-up for healing of surgical site and assessment for possible reoccurrence could not be done.

Excised tissue [Figure 5] was sent to the department of oral and maxillofacial pathology for histopathological examination. The specimen was fixed and stained with hematoxylin and eosin stain. Histological view [Figure 6] showed central fibrovascular core with hyperplastic squamous epithelium. Finger-like papillary projections were seen in the connective tissue. There was a
existence of basilar hyperplasia with the presence of koilocyte-like cells. A final diagnosis of squamous cell papilloma was made on the basis of clinical and histopathological presentation.

**DISCUSSION**

Oral squamous papilloma is usually appears as a small lesion progressing within a duration that varies from a few weeks to 10 years. In spite of it being a common benign neoplasm of the oral cavity, its occurrence in the gingiva is relatively rare. The viral life cycle starts upon entering of virus to basal layer through a microabrasion. After cell division, viral proteins E1, E2, E6, and E7 are expressed at low levels and migration of infected cell to the suprabasal layer is found.\(^2\)\(^5\) Isolated lesions are associated with spinous layer proliferation in a papillary pattern.\(^4\)

Although, generally, it occurs in patients aged between 30 and 50 years, Brooks et al.\(^6\) reported a case of gingival squamous cell papilloma arising from labial as well as lingual interdental gingiva in a 4-year-old boy which recurred twice after excision. We observed an unusual “garlanding a tooth” type of appearance in our case which had a wide and very clearly defined papillary projection unlike the case reported by Ye et al. which had minimal extension on interdental papilla.\(^8\) A gingival lesion was also reported in a 20-year-old male by Ozcan et al.\(^7\) where a diode laser was used for excision. However, the lesion showed a recurrence after 6 months. To prevent further recurrence, in addition to surgery, the patient received Cervarix vaccine.

Histology is an important method for diagnosing the lesion. However, if histology is unable to identify, molecular biology techniques should be explored. Polymerized chain reaction and immunoblot assays are the other two alternative methods to investigate the viral etiology.\(^10\) Along with the viral etiology, smoking is another accelerating factor to initiate squamous cell papilloma. No laboratory test was carried out for viral etiology. We would like to submit that such investigations are not only difficult but also expensive. Again, it is not necessary that the viral etiology may be established in each case. There is, however, enough historical evidence that squamous cell papilloma is usually associated with HPV.

Carneiro et al.\(^8\) demonstrated some strict histopathologic criteria: (i) finger-like projection of squamous epithelium, (ii) hyperkeratosis and normal maturation process, and (iii) perinuclear cytoplasmic vacuolation. On examination, it revealed a cauliflower-like non-tender, asymptomatic growth. This lesion is difficult to differentiate from verruciform xanthoma, condyloma acuminatum, or Darier’s disease. Surgical excision and laser ablation are the treatment of choice.\(^9\) Lactic acid and liquid nitrogen can be used for smaller lesions.

Malignant potential of this lesion albeit low exists. However, the likelihood of it progressing into malignancy depends on the type of virus, its combined action with various physical, chemical, biological agents, the genetic constitution, and the host immune defense. In an exploration of several studies, it was reported that the most commonly detected HPV type in oral squamous cell carcinoma and oral potentially malignant disorders was HPV-16 and HPV-18, while HPV-6 and HPV-11 were found in only a few studies. In addition, expression of markers of progression of malignancy BCL2 gene and p53 gene was not found to be associated with HPV-positive oral squamous cell carcinoma and the mutations in p53 were rarely seen in HPV-positive tumors compared with HPV-negative tumors.\(^3\) Further, a quadrivalent vaccine (Gardasil) has recently been proposed to prevent viral infections of HPV-6 and HPV-11,\(^10\) by creating a robust humoral response much more effective than the levels of antibodies acquired after a general viral infection.

**CONCLUSION**

Oral squamous cell papilloma is closely associated with HPV. A dental surgeon is under an obligation to examine the oral cavity of patients looking for lesions that may be caused by HPV since some of them may have neoplastic changes. Detection at an early stage may prevent the complications of the disease, and the management can be done by minimally invasive way.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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