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Oral squamous cell carcinoma presented only as a small swelling in attached gingiva: A case report

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Abstract

One of the most common malignancies of oral cavity, oral squamous cell carcinoma (OSCC) presents with ulcerative or proliferative lesions. Rarely, it presents as a small asymptomatic swelling, which can cause misdiagnosis and treatment delay. Histopathological confirmation is vital for accurate diagnosis due to a clinical similarity to benign inflammatory lesions or periodontal disease.

We present a case of a 48-year-old male with a small, benign-looking indurated lesion of the attached gingiva. Histopathology confirmed squamous cell carcinoma. This case serves to emphasize the diagnostic difficulty of OSCC involving the gingiva, especially when it resembles periodontal disease or a benign gingival enlargement. Literature has shown that OSCC can have a misleading clinical presentation, resulting in inadequate management or undue delay in intervention. When assessing persistent, non-ulcerative gingival swellings, clinicians should maintain a high index of suspicion for malignancy, particularly for high-risk individuals with a history of smoking or tobacco use.

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Introduction

Oral squamous cell carcinoma (OSCC) is the most frequent neoplasm of the oral cavity, representing more than 90% of all oral malignancies.[1] It is directly linked to tobacco use, alcohol consumption, chewing the betel quid, and poor oral hygiene. OSCC is an overly studied disease, but its clinical pattern can be insidious, resulting in late diagnosis and poor prognosis for patients.

Clinically, OSCC may be an ulcerative or proliferative lesion. Although most of the time, it presents as an ulcerated lesion that is painful and indurated, it rarely presents as a small firm swelling without ulceration and pain, resembling benign lesions like gingival hyperplasia, periodontitis abscess, or pyogenic granuloma.[2] The rare presentations can lead to misdiagnosis, including cases where the OSCC was misdiagnosed as a reactive lesion or periodontal disease.[3,4]

Due to these diagnostic difficulties, histopathological confirmation continues to be the gold standard for the malignancy detection of persistent gingival swellings. It has been demonstrated that biopsy is crucial to differentiating OSCC from inflammatory conditions in patients with the risk factors of smoking and tobacco.[5,6] Early diagnosis and management of these insidious and aggressive tumours rely on improved clinician awareness and routine screening protocols.

Therefore, this case report intends to bring into focus the uncommon manifestation of OSCC as a small swelling in the attached gingiva, highlighting the significance of early biopsy, clinician awareness, and immediate treatment for better prognosis in the patient.

Case report

A 48-year-old man reported with a complaint of a small swelling in the lower right attached gingiva, present for six months. The swelling was painless, firm, and non-ulcerative, and did not have any history of bleeding, pus discharge, or rapid growth. The patient reported no history of prior systemic illness or similar lesions.

The patient had no significant previous medical history, although his family history included a father with 10 years of untreated hypertension. His personal and dental history was significant for chronic exposure to tobacco. He had a 20-year history of smoking (8–10 cigarette packs per day) and smokeless tobacco (3 pouches every 3 days) use. He also practiced poor oral hygiene, brushing once a day, and had not received routine dental care.

Extraoral examination showed a symmetrical face with no deformities or abnormalities. However, bilateral, palpable, non-tender submandibular lymphadenopathy was noted, which raised suspicion of lymphatic spread.

The clinical examination in the intraoral region revealed a firm, well-defined, non-ulcerated swelling measuring approximately 2×3 cm in the area of the attached gingiva of the lower right jaw. On palpation, the lesion was non-tender, and there was no evidence of overlying erythema, ulceration, or discharge. Intraoral examination revealed generalized gingival atrophy, plaque accumulation, calculus deposition, halitosis, and a fractured lower molar tooth adjacent to the lesion. The clinical presentation of the lesion was consistent with a benign gingival pathology, like pyogenic granuloma or chronic generalized gingivitis; however, due to its persistence and the history of the patient being high risk, additional diagnostic workup was necessary.

He underwent a histopathologic examination (HPE) with haematoxylin and eosin (H&E) staining, and an excisional biopsy was done for further evaluation. Histopathological examination confirmed the diagnosis as oral squamous cell carcinoma (OSCC), basaloid variant (non-HPV associated). Microscopically, dysplastic stratified squamous epithelium was identified invading the underlying stroma with moderate amounts of eosinophilic cytoplasm and rare keratin debris. The tumour cells

showed peripheral palisading in nests consistent with the basaloid variant of SCC.

Diagnosis was further supported by immunohistochemistry (IHC) studies. The tumour cells were positive for p40 and p63, confirming squamous epithelial origin, but were negative for p16, excluding HPV-associated carcinoma. These results support our belief that performing histopathological evaluation is essential in persistent gingival swellings where the clinical features of the lesion do not indicate malignancy. Considering the diagnosis of OSCC, the patient was referred for urgent oncological evaluation and treatment plan, involving surgical excision with clear margins and oncologic management.

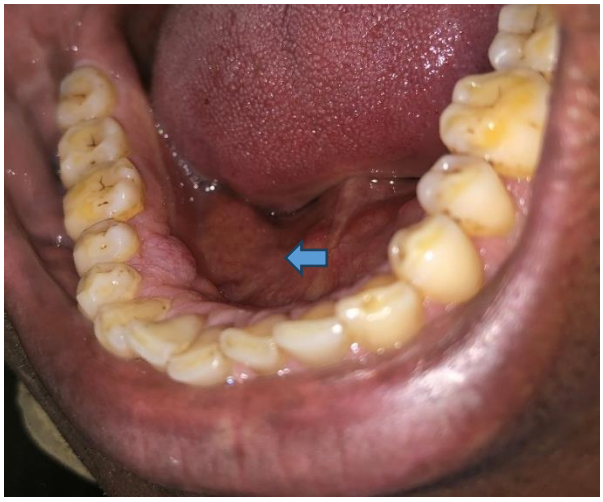

Figure 1. Preoperative intraoral image showing a firm, non-ulcerated swelling on the attached gingiva of the lower right jaw. The lesion appears as a localized gingival overgrowth with adjacent plaque accumulation, calculus deposition, and generalized gingival atrophy.

Discussion

Diagnosis of oral squamous cell carcinoma (OSCC) can be difficult, particularly when it has the appearance of common benign oral lesions. OSCC involving the gingiva is often misdiagnosed as periodontal disease, pyogenic granuloma, and benign gingival overgrowth.[7,8] Inaccuracies that can result in a delayed diagnosis and treatment. This misidentification may lead to inappropriate dental management, including unwarranted tooth extractions that do not address the underlying malignancy and may actually help orient its further progression.[4] Due to the atypical presentation of gingival OSCC, its classic ulcerative or exophytic form may not be present; therefore, clinicians should be on high alert during examination, persisting firm, non-ulcerated swellings localized in the gingiva should be managed properly, particularly in high-risk patients.

OSCC is typically diagnosed based on clinical examination, supplemented by histopathology, although purely clinical methods may lack the specificity required to distinguish malignant from benign lesions. Studies indicate that early-stage OSCC may present innocuously, without aggressive development or invasion to deeper layers of tissue, and thus, biopsy remains the gold standard of diagnosis.[5,6] The lack of ulceration and pain in this case indicated a benign cause; however, histopathological examination demonstrated dysplastic stratified squamous epithelium invading the stroma with diffuse p40/63 immunopositivity consistent with the diagnosis of a basaloid variant of OSCC. Thus, emphasizing the need for routine biopsy of persistent gingival swelling, especially in such patients with a history of tobacco use, poor oral hygiene, or other known risk factors for OSCC.[2]

The mainstay treatment for OSCC is surgical resection with clear margins. In higher-risk disease with advanced-stage features, adjuvant radiation therapy and chemotherapy might be

given to minimize recurrence risk. As early-stage OSCC is correlated with satisfactory survival outcomes, timely diagnosis is imperative in optimizing patient outcomes. Late diagnosis may cause the development of tumours, metastasis to regional lymph nodes, and lead to a worse prognosis. Thus, early biopsy, histopathological diagnosis, and early oncological referral are imperative in the management of patients with suspected gingival malignancies.[5] Enhanced awareness by dental professionals and a greater index of suspicion for malignancy in atypical gingival lesions can play a major role in decreasing misdiagnosis, thus improving survival rates in patients with OSCC.

Conclusion

This case presented oral squamous cell carcinoma as a benign-looking small swelling in the gingiva. Considering the associated risk of smoking and poor oral hygiene, excision and bilateral, non-tender submandibular lymphadenopathy raised suspicion of malignancy, which was confirmed by histology and immunoassay. The patient was referred for oncological evaluation and further treatment. The case highlights that performing histopathological evaluation is essential in persistent gingival swellings, even if they look benign.

Author contribution

Conceptualization, data curation, draft, final version to be published, and accountability: ALL

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Conflict of interest

None

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Consent

All appropriate patient consent has been taken in the form of verbal and written. In the consent form, the patient gave consent for images and other clinical information to be reported in the journal. The patient was counselled that name and initials would not be published and that due efforts would be made to conceal identity, but anonymity cannot be guaranteed.

Supplementary material

Data and supplementary material that support the findings of this study are available from the corresponding author upon reasonable request.

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