CASE REPORT

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Squamous cell carcinoma of the gingiva manifesting as localized gingival enlargement: A diagnostic dilemma

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ABSTRACT:

Squamous cell carcinoma is the most frequent malignant neoplasm affecting structures of the oral mucosa accounting for more than 90% of all malignant lesions in the mouth. Gingival squamous cell carcinoma represents less than 10% of the diagnosed intraoral carcinoma. This article reports a case of moderately differentiated squamous cell carcinoma of mandibular gingiva presenting with atypical features thus making it a diagnostic perplexity. This case report also emphasises upon the role of biopsy to arrive at an accurate diagnosis of such misleading lesions that could be malignant.

Keywords: Gums, Neoplasm, Squamous cell carcinoma.

INTRODUCTION

Oral carcinomas represent less than 3% of all malignant cancerous lesions in humans. However, they still remain the 6th most common cancer in males and the 12th most common in females.[1] Squamous cell carcinoma (SCC), an epithelial neoplasm, is the commonest malignant tumor of the oral cavity.[2] Gingival squamous cell carcinoma is a peculiar lesion and its characteristics differ considerably from other oral SCC. SCC of gingiva has been reported to account for about 10% of all the oral cancers.[3] The clinical presentation of gingival SCC can be quite variable, presenting as an area of ulceration, exophytic, granular or verruciform growth.[4] Here in, we present a case of a concealed, asymptomatic, moderately differentiated SCC of mandibular anterior gingiva with misleading clinical features that manifested as a routine gingival overgrowth.

CASE PRESENTATION

A 45 year old male reported to the Outpatient Department of Periodontology with a chief complaint of a swelling in relation to the lower front gums that bled while brushing. The propositor gave a history that he noticed the swelling about 3 months back but had not experienced any associated symptoms since then. Further, he added that the size of the swelling had remained somewhat constant for the abovementioned period of time. His medical history was unremarkable. The patient had a habit of smoking filtered cigarettes for past 10 years (10/day) making it a total of 100 (10x10) pack years. He was also into social drinking occasionally. He had visited a regional dentist for the same complaint about 2 months back, where an oral prophylaxis was performed and antibiotics were prescribed (Amoxicillin 500mg thrice daily) for 5 days. However, the lesion persisted even after the prescribed treatment.

On clinical evaluation an erythematous, granular, irregular growth measuring about 10mm x 10mm was noticed on the anterior mandibular attached gingiva extending between tooth no. 32 & 33. We also observed the presence of certain irregular, friable, soft tissue growths that extended from the attached gingiva of right lateral incisor to the growth mentioned above (Figure 1).

Figure 1: Clinical presentation of the lesion at the initial examination

No ulcerations were visible in relation to the lesions. Teeth associated with the lesion had no mobility or tenderness on percussion. However, periodontal pockets measuring~5mm were present in relation to tooth no. 32, 31 & 41 that bled profusely upon probing. Oral hygiene status was poor as per the plaque and gingival indices. Generalised staining of the teeth and gingival recession could also be observed. The maxillary central incisors had been pathologically migrated labially and distally. Extra oral examination did not reveal any gross asymmetry, swelling, disfigurement or lymphadenopathy. Intra oral periapical (IOPA) radiograph was found to be negative for any signs of pathology (Figure 2).

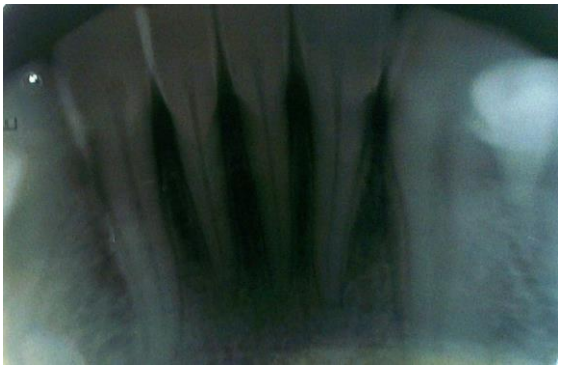

Figure 2: Preoperative radiograph of the teeth associated with the lesion showing no signs of pathology

The differential diagnoses for this lesion includes: pseudo epitheliomatous hyperplasia, epithelial dysplasia, pyogenic granuloma, pemphigoid, lichen planus, peripheral ossifying fibroma, keratoacanthoma, verruciform xanthoma and squamous cell carcinoma. Based on the aforementioned clinical and radiographic findings a provisional diagnosis of non specific inflammatory gingival enlargement was established. Scaling and root planing was performed to ensure a plaque free site and the patient was given routine oral hygiene instructions. Doxycycline (100mg OD) was prescribed for 14 days to combat any secondary periodontal infection. He was also actively enrolled in a planned smoking cessation program.[5]

OUTCOME & FOLLOW- UP

The patient was recalled immediately after the completion of the antibiotic course i.e. 2 weeks thereafter, his oral hygiene was found to be satisfactory and the growth on left lateral incisor had subsided, but only just (Figure 3).

Figure 3: Intraoral view showing the presentaion of the lesion at the time of biopsy

An excisional biopsy was planned pertaining to the non resolving nature of the lesion. All the visible portions of the lesion were excised under local anesthesia and were sent for histopathological examination (Figure 4). The microscopic examination of the submitted gingival tissue revealed malignant epithelial neoplastic cells dispersed in sheets as well as dispersed singly and invading the underlying connective tissue. Individual cells were

pleomorphic varying from round to oval; vesicular to hyperchromatic nuclei were visible, inconspicuous to conspicuous nucleoli with moderate amount of eosinophilic cytoplasm were also evident. The invading epithelium demonstrated significant dysplastic changes. The biopsy sample was suggestive of moderately differentiated squamous cell carcinoma (Figure 5).

Figure 4: Excisional biopsy of the lesion performed

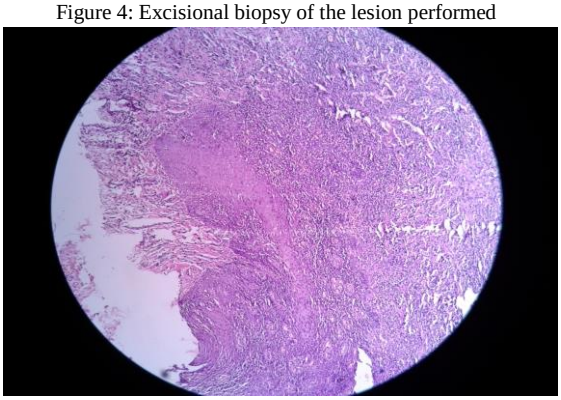

Figure 5: Squamous cell carcinoma, moderately differentiated (hematoxylin-eosin stain, original magnification ×10)

Interestingly, as the patient returned with the biopsy report, the lesion had healed completely and the ginigival tissue was seemingly healthy 15 days post biopsy (Figure 6).

Figure 6: Clinical view of the lesion site 15 days post biopsy

The patient was then referred to the Department of Surgical Oncology and Radiotherapy for further evaluation, definitive therapy and follow-up.

DISCUSSION

Oral squamous cell carcinoma is the commonest tumor of the oral cavity.[4] It is reasonable to say that many cases of gingival SCC go undiagnosed or are misdiagnosed as varied benign lesions due to its inconsistent signs and symptoms.[6] It may present as an exophytic, ulcerative or erosive outgrowth on gingival or mucosal tissue[4] or appear as an asymptomatic lesion of periodontal[6] or perio-endodontic[7] origin, thus often eluding the true diagnosis and consequently affecting the prognosis as well as survival of the patient.

Although, the etiology of SCC is unknown at present; alcohol intake, betel nut chewing and smoking can be considered as potent contributing factors.[8] Contrary to this, Yoon et al[6] and Meleti et al[9] proposed that gingival SCC does not show significant association with risk factors such as actinic radiation, tobacco; either smoked or chewed or consumption of alcohol, thus maintaining a dilemma regarding its etiology and risk predictors. In an analysis for risk factors for site specific intraoral SCC it was recognized that significantly larger percentage of smokers were diagnosed with SCC of the floor of mouth (97%) and tongue (64%) rather than gingival SCC (50%). Also, the M : F ratio was the lowest for gingival SCC (0.5).[10]

The case under discussion presented with an asymptomatic, irregular, granular, strawberry like gingival growth in the mandibular anterior region. Although, the propositor was a current smoker it did not draw our suspicion to tumorous involvement, as other features such as nodal involvement, any area of ulceration or indurated margins, which are the characteristic features of SCC were absent. Consequentially, the provisional diagnosis of a relatively harmless gingival lesion i.e. inflammatory non specific enlargement was made.

Wallace and Neville[11] in 1996 reported a case of SCC gingiva presenting with an atypical benign appearance. The patient presented with

a small granular spongy asymptomatic growth in relation to the buccal gingiva of mandibular right first molar. No ulceration or positive radiographic findings were detected and an incorrect provisional diagnosis of an inflammatory periodontal lesion was formed. Additionally, Yoon et al[6] in 2007 described a case in which the right maxillary molar presented with pain, swelling and pus discharge along with severe bone resorption, mimicking a localised periodontal lesion. The lesion did not respond to conventional therapy and was diagnosed to be a moderately differentiated SCC after the microscopic evaluation of the biopsy sample.

The authors by the means of this report hereby state that it is imperative for the dental professionals to understand the importance of such concealed lesions and include biopsy as one of the initial investigations in diagnosing any gingival overgrowth, thereby facilitating early detection, better prognosis and prompt treatment of SCC.

Prognosis of SCC is dependent on the size of the lesion, metastatic spread and nodal involvement. The most accepted classification for determining the prognosis of a lesion is the TNM classification system[1] (T-primary tumor size, N-regional lymph node involvement and M-distant metastasis). The prognosis of the case being discussed is difficult to estimate at this stage as we do not bear the complete knowledge about the nodal involvement and metastasis that might have occurred in this case of moderately differentiated SCC.

The treatment modalities for SCC vary according to the histological differentiation, lesion extension and the presence of local and distant metastasis. Generally, oral cancers are treated with wide excision, radiation therapy or a combination of both.[12] Gomez et al.[13] in a follow up study of 83 treated cases of gingival SCC noted comparable recurrence as well as survival rates with that of carcinomas of other oral sites, including the oropharynx. They suggested that surgical resection, including modified neck dissection and marginal bone resection, remains the treatment of choice for SCC gingiva.

CONCLUSION

Gingival squamous cell carcinoma is a peculiar lesion and its characteristics differ considerably from other oral SCC. The authors conclude and reinforce that all the dental health care providers must be aware and observant enough towards all the lesions of the oral cavity that may camouflage or exist along with drastic entities such as SCC itself. The present case of SCC was misdiagnosed provisionally and the definitive treatment was delayed, therefore biopsy should be included as one of the primary investigations for such hidden lesions as it plays a decisive role in the correct diagnosis and treatment planning.

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How to cite this article: Sareen S, Singhal D, Pathak AK, Purwar P, Dixit J, Agarwal G. Squamous cell carcinoma of the gingiva manifesting as localized gingival enlargement: A diagnostic dilemma. Arch of Dent and Med Res 2016;2(4):52-56.