Case Report

Gingival Carcinoma in a non-tobacco user

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Abstract

Oral cancer is a serious health concern, and is one of the leading cancers in India and South east Asia. Squamous cell carcinoma is a malignant neoplasm of epithelium, most frequently occurring in intra oral tumors. Many unique features of gingival squamous cell carcinoma clearly delineate it from OSCC arising in other sires. Gingival OSCC can mimic a multitude of oral lesion especially those of inflammatory origin, in addition predisposing and presenting factors are different from those of other OSCC. In this article we present a case of 57 year old male patient with squamous cell carcinoma of gingiva mimicking a traumatic ulcer.

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Introduction

Oral squamous cell carcinoma is the most common type, which accounts for more than 90% of all cancers. The most common area to be affected is the lateral ventral surface of the tongue, buccal mucosa followed by floor of the mouth. Less common site to be affected is Squamous cell carcinoma of the gingiva which comprises about 10% of all oral malignancies1. Although generally classified as a subset of oral SCC, gingival SCC is a unique malignancy and can mimic a multitude of other lesions, especially those of inflammatory origin. In addition, predisposing and presenting factors are different from those of other oral squamous cell carcinomas1-6, 9.
Case report

A 57 year old male patient reported to the Department of Oral Medicine and Radiology, M.R Ambedkar Dental College and hospital, Bangalore with a chief complaint of an ulcer in lingual aspect of attached gingiva on left side of the mandible since 20 days. The ulcer was accompanied by mild intermittent pain with history of tooth brush trauma. There was no history of weight loss nor appetite over the last few months. Social history was negative for contributing factors such as tobacco, alcohol, or chemical exposure. There was no significant family history. Medical history revealed that he was known diabetic and hypertensive since 20 years and was on medication for the same. On general physical examination, patient was well built and nourished. All the vital signs were within the normal limits. Extra oral examination revealed no facial asymmetry & on palpation solitary left submandibular lymph node was palpable, firm, mobile tender measuring 2x2 cms. Intraoral examination revealed an ulcer in the lingual aspect of attached gingiva in relation to 35 & 36 measuring approximately 3x2 cms in size, extending anteriorly from the mesial aspect of 35 and posteriorly till the distal aspect of 36, superiorly from the marginal gingiva of 35 & 36 and inferiorly in to the lingual vestibule.

Fig:1: Clinical photograph showing erythematous and ulcerative nature of gingival

The surface of the lesion appeared erythematous with irregular and slightly raised margins on the distal aspect of the lesion. On palpation all the inspectory findings were confirmed. The ulcer was non tender, non indurated and no signs of
secondary infection were seen. Hard tissue revealed grade-II Mobility in 35 and 36 with deep pockets. Based on the history and clinical features a provisional diagnosis of traumatic ulcer was considered. Differential diagnosis of solitary fungal ulcers and malignant ulcer was considered.

Investigations included complete hemogram, Intra oral periapical radiograph and panoramic radiograph. The hemogram showed a normal blood count with an elevated ESR. Random blood sugar was within the normal limits (RBS-130). Panoramic radiograph revealed extensive bone loss in relation to 35 and 36.

Incisional biopsy of the lesion was done under local anesthesia and on histopathological examination with Eosin and hematoxyline, revealed islands and sheets of dysplastic epithelium invading into stroma.

![Fig:2: Erosion with extensive bone loss in relation to 35 and 36.](image1)

Fig:3: Low power photomicroscopy showing strands and islands of neoplastic epithelium invading into connective tissue.

The dysplastic features in the form of pleomorphism of the cell. Hyperchromatism, individual cell keratinization and keratin pearl formation. The connective tissue shows dense infiltration of the inflammatory cell.

![Fig:4: Low power photomicrograph showing islands of neoplastic epithelium with keratin pearls in the connective tissue.](image2)
The overlying epithelium showed hyperkeratinized stratified squamous epithelium suggesting well differentiated squamous cell carcinoma. The patient was referred to Oral and Maxillofacial surgery for surgical management. Left hemimandibulectomy with modified radical head and neck dissection was done with pectoris major myocutaneous flap placement.

**Discussion**

Oral squamous cell carcinoma of the gingiva is an rare entity that must be carefully diagnosed. Early recognition should be an attainable goal for most patients undergoing regular dental recall appointments. It is imperative for dental health care professionals as primary care providers of the gingiva, to include a cancer screening with every recall examination. Squamous cell carcinoma of gingiva more frequently involve mandible than maxilla and it is mainly observed in older female over 50 years. Gingival OSCC is more aggressive and in its early stage bears a resemblance to common mucosal infection and therefore has frequently led to delay in diagnosis or even to misdiagnosis, thus leading to delay in treatment institution and making the prognosis grave. The most affected sites in the mouth are, in decreasing order, the lower lip, lateral border of the tongue, retromolar region, floor of the mouth, and gingiva.

The tumor arises more commonly in the edentulous area, although it may develop at the site in which teeth are present. The attached gingiva is more frequently involved than the free gingiva. The most common suspected environmental etiological factors in the development of oral cancer are tobacco, alcohol, nutritional deficiencies, trauma, sepsis and chronic irritation, but betel
radiation exposure, infections or immunocompromised are relevant in some cases. In addition viruses are suspected as carcinogenic agents. 3, 4, 5.

Many factors are related to lifestyle and genetics also may play a role. A series of chromosomal changes in OSCC has been well described and changes in over 100 genes have now been implicated, but the fundamental concept in cancer is the overexpression of oncogenes and/or the silencing of tumour suppressor genes. TP53, a gene involved in apoptosis and cell cycle regulation, is one of the earliest TSGs discovered in cancer and found to be one of the most pervasive across all tumor types. Aberrations such as deletions or mutations in these genes can lead to unchecked cell division and cancer formation. The Pro genotype of the TP53 codon 72 polymorphism is associated with an increased risk of OSCC in non-smokers. A relationship with human papillomavirus (HPV) has been shown in a number of studies demonstrating DNA from HPV, particularly in oropharyngeal carcinoma.

The clinical characteristics of SCC vary from case to case and include the exophytic (verrucous or papillary), endophytic, ulcerated, leukoplasic, erythroplastic or erythroleukoplasic forms. Depending on their extent and/or location, these lesions may cause painful symptoms and resorption of adjacent bone seen as a “moth-eaten” appearance on radiographs. Many times carcinoma of the gingiva does not have the clinical appearance of malignant neoplasm. SCC of the gingiva is normally painless. 11

Treatment of SCC of the gingiva is primarily surgical. Radical neck dissection, or its modification, is the standard treatment for the metastatic lymph nodes. Radiotherapy is usually not the preferred modality of treatment.
for early gingivobuccal complex cancer. It is used either postoperative adjuvant treatment or as definitive treatment for advanced cancer with or without chemotherapy. Chemotherapy has been used as neo-adjuvant, adjuvant or palliative treatment\textsuperscript{12}.

**Conclusion**

At times, clinical presentation of diseases may be misleading. There are always a percentage of mysterious cases that turn out to be different from what they appear to be. It was a matter of concern in this case, that there were lack of deleterious oral habits and no other apparent cause for oral cancer. Potential risk factors like oncogenes and oncoviruses should also be considered in the etiology of oral cancer. This would open an avenue for future research to establish factors still unknown in carcinogenesis. This case stresses the fact, that even innocuous appearing lesions should be carefully evaluated with necessary investigations to establish the correct diagnosis for accurate management in the interest of the patients.

**References**

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