

Squamous Cell Carcinoma Associated With Chronic Use of Three Different Smokeless Tobacco

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Abstract

Chronic use of smokeless tobacco has been strongly associated with the development of oral cancer taking the form of squamous cell carcinoma (SCC). The SCC is highly invasive tumor and invades all types of hard and soft tissue irrespective of their composition or defense system. We present an interesting case of oral squamous cell carcinoma that was associated with the use of three different types of smokeless tobacco since a period of more than ten years. The lesion had extended to the entire buccal vestibule on the right side of the mandible and had involvement of local lymph nodes. Although, histopathological diagnosis was initiated and confirmed early, the patient did not report for the treatment of the condition. The clinical presentation of the case suggests that tumor aggression could be associated with the use of different types of tobacco.

Keywords: carcinoma, premalignancy, white lesions, metastasis, cervical lymph nodes, TNM classification

I. INTRODUCTION

Human oral cavity is lined by mucous membrane whose epithelial lining varies in different parts according to the function they perform. While keratinized or para keratinized epithelium is present near the oral opening (vermillion border of the lip), non keratinized epithelium lines most of the inside of the oral cavity. The unique feature of the oral cavity is that although the overlying epithelium is somewhat similar in most of the areas, the underlying submucosa is quite different in different parts. A wide range of submucosal structures allows the cancers in this region to be more dreaded since they spread through various lymphatics that drain the area. Oral cancer commonly starts as a painless white patch that keeps on increasing in thickness followed by development of red patches before resulting into an ulcer which grows without showing any signs of healing. While some cancers in the orofacial region originate from the skin (mucocutaneous keratoacanthoma),¹ most of the cancers have origin intra orally. Among different types of oropharyngeal cancers,² the squamous cell carcinoma (SCC) can represent upto 95% of malignant neoplasms of the

region.³ The most common sites of occurrence are the lateral border of the tongue, floor of the mouth and major salivary glands.⁴ These sites being also the common areas of mastication,⁵ therefore one can understand the dual impact of oral cancer on ones nutritional status as a result of oral cancer in these locations. Besides, oral cancer also has severe social and psychosocial impact on the sufferer.⁶ History of tobacco, alcohol, snuff use have been strongly associated with increased risk of SCC.⁷ Smokeless tobacco use is common in the northern part of india and includes a variety of more than 25 different types.⁸ This article presents a case of an oral squamous cell carcinoma in the location of buccal vestibule who reported a rare and unique history of using three different types of smokeless tobacco for more than 10 years.

Case report

An elderly male patient aged 67 years reported to the department of oral diagnosis with chief complaint of burning sensation on the right side of the oral cavity since last ten days. The burning was more intense at times, especially when he consumed a particular type of smokeless tobacco (guthka – local variant of powder tobacco) and/or consume certain spicy foods. The patient's medical history did not reveal any negative findings while his social history revealed that he has been using three different types of smokeless tobacco (ghutka since last 10 years, khaini since last 30 years or more and tambakoo since last 16 years). The patient also claimed to drink local alcohol (Thara) at least once or twice a week. Extra oral examination revealed firm palpable submandibular lymph nodes and clicking in the temporomandibular joint on the left side. Intra oral examination disclosed severe halitosis, high DMF index and a combination of white and red lesion on the right side of the mandible in the buccal vestibule region (**Fig 1**). A Kennedy class 3 modification 2 partial edentulous situation in maxillary arch and Kennedy class 2 modification 2 in the mandibular arch was also present. The lesion on the right side of the mandible was diffuse and filled with pale brown necrotic tissue extending to the ridge and slopes of the residual alveolar ridge on that side (**Fig 1**).



Figure 1: Intra oral lesion in the buccal vestibule area. Note overlying slough and red patches of ulcerated

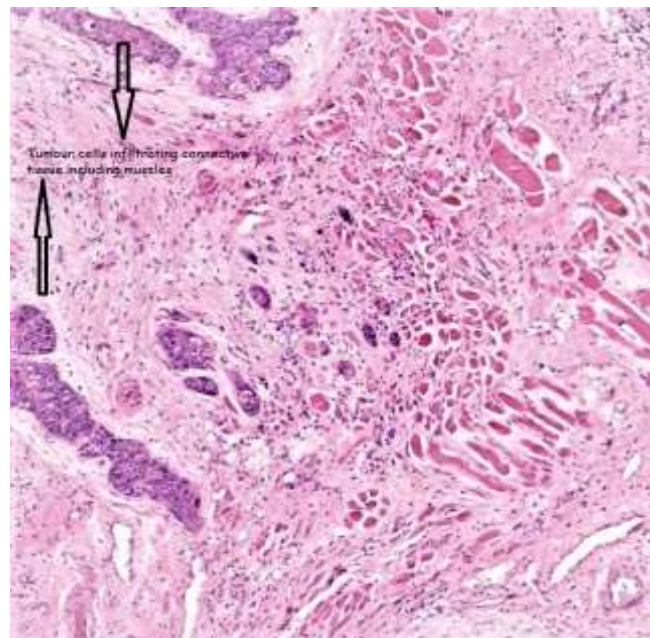


Figure 2: Histopathological findings of the lesion showing the infiltration of the tumor cells in clusters

Where the necrosis would end, reddish patch that resembled eroded epithelium would start and end at different distances. The major part of the red lesion was on the buccal side with little extension on lingual side. However the pale white necrotic tissue was more on the edentulous ridge and the lingual surface. Certain areas of the lesion were inflamed and were tender on palpation. The patient was aware about the lesion but since he did not have any symptom like pain, he did not seek any treatment. The patient was educated about the importance of stopping all forms of smokeless tobacco immediately. The treatment plan was to conduct an incisional biopsy and exfoliative cytology of the lesion and depending upon the histothological findings, further diagnosis

and treatment was to be planned. However, the patient was reluctant to undergo for the treatment at that time. Tentatively, the future diagnostic and treatment plan included the likelihood of an excisional biopsy that would also include partial hemimandibulectomy on the affected side along with removal of local lymph nodes. Radiotherapy and chemotherapy were also kept under consideration. The patient was briefed about all the possibilities. An incisional biopsy was taken (**Fig 2**) which clearly showed the infiltration of cancer cells into the underlying tissues including musculature. The patient, however, did not return for further investigation or treatment.

Discussion

A provisional clinical diagnosis of oral cancer case has been presented in this article which was later confirmed by histopathological findings. The person's sex, age, history of using smokeless tobacco and clinical picture of the lesion point the most probable diagnosis of SCC. However, histopathological diagnosis is essential to confirm clinical findings since the treatment option (extent of resection) depends on the stage and grade of tumor.⁹ Most of the oral cancers have their origin from squamous cells.³ The incidence of SCC in the sex,¹⁰ age group and location are positive indicators in this case. The long history of smokeless tobacco and alcohol with known consumption of different varieties of tobacco also substantiates clinical diagnosis for SCC.^{11, 12} The lesion present in the buccal vestibule extending over the ridge being ulcerated with the necrotic central area is a classic presentation of oral SCC.¹³ Although tongue is most common site for SCC, the buccal mucosa is considered to be most common site for south east Asian people due to the habit of placement of smokeless tobacco in that region.¹⁴ Palpable lymph nodes that were firm was another important finding that has significant implications in diagnosis and treatment planning.

Oral SCC is associated with poor prognosis, because even when the tumor is small, it carries a very high risk of cervical lymph node metastasis.¹⁵ Although, mandible being one of the strongest and hardest bone of the cranium, removal of the portion of mandible near the cancerous lesion is essential to prevent recurrence.¹⁶ It has been also recommended that when a segment of the mandible is planned for removal, immediate reconstruction should be planned before hand to improve both facial symmetry and masticatory function.¹⁷

Cervical lymph node metastasis in such cases are in fact the most significant prognostic factor that reduces or increases the rate of survival.¹⁸ Post resection of the mandible, the prognosis of prosthodontic management are poor unless an implant supported or cast partial frameworks that are supported by healthy bone grafts and/or natural tooth abutment are present.¹⁹ Partial removable dentures have little functional role if mandible has been resected and patient has undergone hemimandibulectomy. Only partial removal of alveolar bone within the body of mandible where continuity of the mandible is still intact has good prognosis.

Conclusion

Oral cancers in countries like India has a strong association with various forms of tobacco used especially the tobacco which is placed in contact with mucosa for a long period of time. Early diagnosis is imperative in such cases since most of the oral cancers spread rapidly involving local lymph nodes.

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