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Squamous cell carcinoma of gingiva involving alveolar bone: A case report

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Abstract

Oral squamous cell carcinoma (OSCC) is the most common oral cancer which can present as various types of clinical presentations, accounting for more than 90% of all malignant lesions in the oral cavity. Carcinoma of gingiva makes an important group of oral cancers that extends to alveolus. Etiology of oral cancer includes tobacco, alcohol, chronic irritation of gingiva and progression of oral potentially malignant disorders. Carcinomas involving alveolus can result in bone erosions and appear as “moth-eaten appearance” in the alveolus. Treatment depends upon the stage and extent of the disease.

Keywords: Squamous cell carcinoma, gingiva, alveolar bone

Introduction

Head-and-neck cancers (HNCs) rank sixth among common malignancies worldwide, and most commonly occurring is oral squamous cell carcinoma (OSCC), accounting for more than 90% of all malignant lesions in the oral cavity^[1]. Alveolar ridge SCC comprises 9% of all patients with oral SCC based on the report by Ildstad *et al.*, out of which, about 70% of the carcinomas arise from the mandibular gingiva and 30% from the maxillary gingiva^[3]. The risk factors for oral squamous cell carcinoma (SCC) include tobacco, alcohol and consumption of both^[4]. Carcinoma of gingiva is weakly associated with the risk factors and its aetiology remains known^[5].

Clinically, GSCC presents as an exophytic growth with a granular, papillary or verrucous surface or it presents as an ulcer proliferative lesion^[6]. Pain, swelling, difficulty in eating and chewing are the most predominant symptoms but in the early stages, it may be asymptomatic^[7]. Early detection of the oral cancer is necessary because the survival is most significantly linked to the extent and stage of the cancer^[8].

Case Report

A 62-year-old male patient reported to Department of Oral Medicine and Radiology with a chief complaint of pain in a long-standing non-healing ulcer in lower left back region of jaw for 2 months. Patient was apparently well 2 months back when he noticed an ulcer formation associated with pain in left posterior region of mandible. Pain was moderate, intermittent in nature. Pain radiates to entire mandible of left side. There were no specific aggravating or relieving factors. Patient also gave history of difficulty in mastication, frequent bleeding and halitosis. Despite taking medications (antibiotics +analgesics) several times, there was no improvement in healing of wound. Medical and family history was noncontributory. Oral hygiene was poor. Patient gave history of tobacco chewing 2-3 quid daily for 20-25 years, along with history of smoking 4-5 bidis daily for 30 years and occasional alcohol intake. Patient gave no history of weight loss or loss of appetite in the last few months.

On extra oral examination, face was apparently symmetrical with mild swelling at the inferior border of the left mandible. Swelling was firm, immobile and tender on palpation with overlying skin exhibiting no change in color or rise in temperature. There was left submandibular lymphadenopathy. (Fig. 1 and 2).

On intraoral examination there was an ulcero-proliferative, exophytic lesion covered with greyish white necrotic slough involving alveolar, vestibular and lower left buccal mucosa as well as gingiva extending from the distal aspect of 35 to mesial surface of 38 of size 3 x 2 cm approximately.

The surface of the lesion is erythematous with irregular margins, rolled out and everted edges. On palpation lesion was rubbery, non-fluctuant, moderately defined growth that is tender and bleeds on palpation. The lesion has displaced 35 mesio-buccal, inducing grade 2 mobility. (Fig. 3 and 4).

Based on history and clinical features, a provisional diagnosis of carcinomatous growth of left gingiva/alveolar mucosa was considered and differential diagnosis of Squamous cell carcinoma of gingiva/ alveolar mucosa, verrucous carcinoma, benign hyperplasia of gingiva, chronic traumatic ulcer and deep mycotic infections were taken into consideration.

Patient was advised routine blood investigations, liver function, renal function tests, serum electrolytes, blood sugar analysis which were within normal limits. Patient was advised Orthopantomogram (OPG) and contrast enhanced computed tomography (CECT). OPG revealed marked bony destruction resulting in a poorly-defined radiolucency with irregular borders in left mandibular body region corresponding to 36 & 37, extending inferiorly till the mandibular canal and laterally extending from the alveolar bone associated with 35 and 38 (Fig 5). Axial contrast enhanced computed tomography image showing infiltrative soft tissue mass in the left lower alveolus showing destruction of the body of left hemi-mandible (Fig 6). Further cytosmear and incisional biopsy were done. Cytosmear showed clusters and few signally scattered tumor epithelial cells with increased nucleocytoplasmic ratio, round to irregular hyperchromatic nuclei, with basophilic cytoplasm. The cytomorphological features were suspicious for carcinoma left gingiva. Incisional biopsy revealed lining of dysplastic stratified squamous epithelium with sheets of tumor cells. Individual cells are pleomorphic with coarse nuclear chromatin, prominent nucleoli and eosinophilic cytoplasm scattered in between is heavy inflammatory infiltrate comprised of lymphocytes. Based on clinical, radiological and histopathological examination a final diagnosis of Squamous Cell Carcinoma of left Gingiva extending in to alveolar bone was made. Patient underwent segmental resection of left mandibular body along with supraomohyoid dissection in Department of Oral and Maxillofacial Surgery. After surgery patient was referred to Department of Radiation Oncology for Radiotherapy. (Fig 7 and 8) showing post-operative view of the patient.

Discussion

Squamous cell carcinoma is an epithelial tumour and also, the most common malignant tumour of the oral cavity [5]. Primary squamous cell carcinoma of bone is rare [9]. Tobacco and alcohol are the most common risk factors for oral cancers [10]. Carcinogens are present in tobacco such as nitrosamines (nicotine), polonium, nitrosoprotine, polycyclic aromatic hydrocarbons and nitrosodichthanolamine. Carcinoma occurring on gingiva does not have a specific or defined etiology. Since gingiva is a site of chronic irritation and inflammation because of calculus formation and collection of micro-organisms, there is a possibility of development of cancer [9]. In the present case tobacco and alcohol were the risk factors. Oral cancer usually manifests as ulceration, which can turn into an erosive lesion or may exhibit an exophytic, granular, or verrucous type of growth [9]. The presentation of our case was also consistent with these

findings. Occasionally, carcinoma of the gingival may or may not be painful. The tumour most commonly arises in edentulous areas, although it can also occur in teeth bearing areas, and mostly on the attached gingiva [9]. Irregular invasion and infiltration of the bone may also be seen because of the proximity of the underlying periosteum. Extension of the lesion into the floor of the mouth or laterally into buccal mucosa as well as bone invasion commonly leading to pathologic fracture [9]. The classification of bone defects in squamous cell carcinoma are as follows: (a) Erosive type having well defined margins of the resorbed bone and (b) moth eaten-irregular type with ill-defined margins of absorbed bone [11, 12]. In the present case irregular radiolucency with ill-defined borders in left mandibular body region corresponding to 36 & 37 was seen.

Treatment modalities of SCC include surgical excision, radiotherapy and chemotherapy. Radical neck dissection is often required in case of lymph node metastasis. Our case was treated with segmental resection of left mandibular body along with supraomohyoid dissection followed by radiotherapy. Patient is on periodic follow up since then.

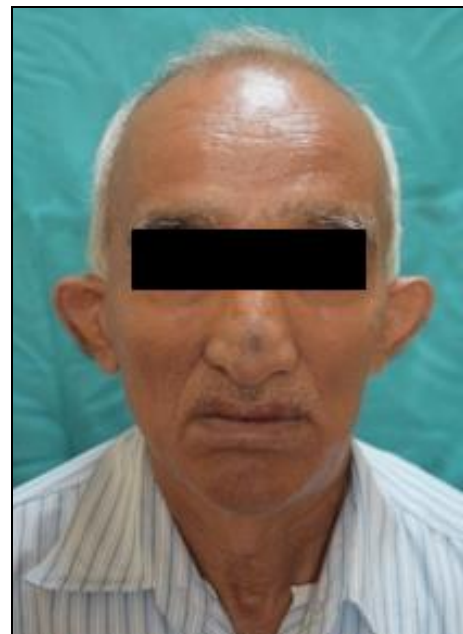


Fig 1: There was left submandibular lymphadenopathy



Fig 2: There was left submandibular lymphadenopathy



Fig 3: The lesion has displaced 35 mesio-buccal, inducing grade 2 mobility



Fig 4: The lesion has displaced 35 mesio-buccal, inducing grade 2 mobility



Fig 5: OPG revealed marked bony destruction resulting in a poorly-defined radiolucency with irregular borders in the left mandibular body region corresponding to 36 & 37, extending inferiorly till the mandibular canal and laterally extending from the alveolar bone associated with 35 and 38.

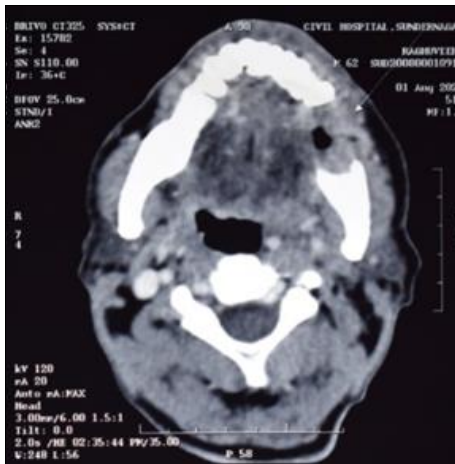


Fig 6: Axial contrast enhanced computed tomography image showing infiltrative soft tissue mass in the left lower alveolus showing destruction of the body of left hemi-mandible

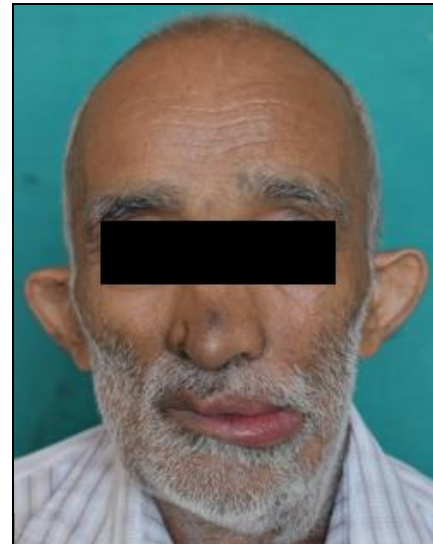


Fig 7: Post-operative view of the patient

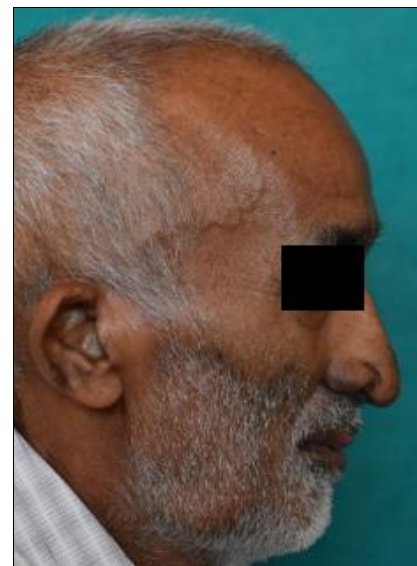


Fig 8: Post-operative view of the patient

Conflict of Interest

Not available

Financial Support

Not available

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