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Oral Squamous Cell Carcinoma Of Alveolus And Buccal Mucosa- A Case Report

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Abstract:

Oral squamous cell carcinoma is the most frequent type of carcinoma that affects the oral mucosa. Globally, 90% of oral cancer cases are caused by oral squamous cell carcinoma (OSCC). It is unusual to develop below 30 years of age and more common in males over the age of 50. The most frequent malignant epithelial neoplasm affecting the oral cavity is oral squamous cell carcinoma. It is under the head and neck SCC group, and knowledge on its risk factors, genetic makeup, and epigenetic modifications is becoming more widely available. The long-held theory that poor oral hygiene contributes to the development of oral cancer has received more attention as evidence has emerged linking oral malignancies to chronic inflammatory illnesses such as periodontitis. Treatment for OSCC must be multimodal since it is a very invasive tumour and most patients have lesions that are still progressing locally when they are diagnosed. Studies show that different practices involving tissue abuse account for between 30 and 40 percent of mortality from oral squamous cell cancer. This article describes a classic case presentation of alveolar-buccal sulcus-related oral squamous cell carcinoma in a thirty seven-year-old male.

KEYWORDS: Alveolobuccal sulcus, squamous cell carcinoma, mandible.

INTRODUCTION:

Oral squamous cell carcinoma is one of the potentially debilitating and threatening conditions that impairs patient's physical and mental well-being (OSCC) [(1)]. Represents more than 90% of all malignant neoplasms, it is the most common type of malignant mucosal neoplasm of the head and neck [(2)]. Males are more likely than females to be affected by OSCC, and both the frequency and death rates increase with the patient's age [(1)]. Less cases have been observed in younger age groups under 40 years of age. It usually affects older age groups across the fifth to eighth span of life [(3)]. Consuming alcohol, using tobacco or betel habit, and being infected with the human papilloma virus (HPV) are the three most common causes of oral SCC. Patients with OSCC were also found to have inadequate intake of fresh fruits and vegetables [(4)]. The development of cutaneous squamous cell carcinoma is mostly associated with ultraviolet (UV) sun radiation, and the cumulative amount of UV exposure throughout an individual's lifetime is a significant contributing factor to the cancer's growth. The main therapeutic option for squamous cell carcinoma is surgical excision. Radiation therapy is typically used after surgical treatment for very large tumours and for older patients or those who will not tolerate surgery with squamous cell carcinoma. Over an individual's lifetime, immunosuppression greatly raises the chance of squamous cell carcinoma. Squamous cell carcinomas that originate in regions with prolonged sun exposure seldom metastasize, although it does happen occasionally and is more likely in patients with compromised immune systems [(5, 6, 7)]. Occasionally the cancer is identified in an advanced stage because the patient is unaware of the condition or cannot easily access therapeutic services. Therefore, it is recommended to improve the primary detection of oral cancer by implementing chairside diagnostic

techniques such as brush biopsy and toluidine blue [8]. In the current case presentation, we present a case of carcinoma in right buccal mucosa and mandibular alveolus in a 37 year old male patient.

CASE REPORT:

A 37 years old male patient reported to outpatient department with a chief complaint of ulceration in the lower right back tooth region since one month. Initially the ulcer was asymptomatic but since last one-week intermittent episodes of moderate pain was present; radiating to the left ear and temporal region, the episodes of pain triggered after chewing food. The patient also had difficulty in speaking and chewing food past one month. The discomfort was severe when hard food was consumed. Patient's medical history was non-contributory. Patient had a habit of tobacco chewing for past 3 years and consumes 3 times a day and discontinued the habit before 6 months. Patient was well oriented in time place and person; his vital signs were within the normal range. On clinical examination extra orally, facial asymmetry was evident, presence of swelling on the right lower third of face of size 2×2 cm and the swelling was hard in consistency. The swelling extended anteriorly 1cm from the right commissure of lip, posteriorly 2cm from the angle of mandible, superiorly 2 cm from the ala tragal line and inferiorly 1cm from the lower border of mandible. Mouth opening was adequate (27mm). On lymph node examination, palpable submandibular and sublingual lymph node were present, single, nodular, firm in consistency, tender on palpation and fixed to underlying structures. On soft tissue examination, on inspection, presence of ulcero-proliferative lesion of size 4*4cm evident on the right buccal mucosa and alveolus extending superiorly from the 3cm from the upper buccal vestibule, inferiorly deep into lower buccal vestibule, anteriorly 3cm from the commissure of lip, posteriorly 1cm from the retromolar region. The shape and margin of ulcer was irregular, edges were everted and floor was erythematous and keratotic. On palpation, all the inspectory findings were confirmed with respect to size, site, shape and extent, tenderness was present, soft in consistency with no evidence of blood or pus discharge.

Figure 1: ulcerative growth present in alveolus-buccal mucosa.

On hard tissue examination, there was presence of calculus and stains due to poor oral hygiene and dental caries were seen in 26 36 and 45. With these clinical findings, a provisional diagnosis of gingival epulis was given along with differential findings of pyogenic granuloma and peripheral gaint cell granuloma.

The patient was then asked to report to department of oral and maxillofacial surgery for incisional biopsy. Incisional biopsy of the lesion was done under local anaesthesia and incised specimen was sent for histopathological examination. Histopathological features of incisional biopsy revealed, fragment of squamous mucosa with an adjacent infiltrating malignant neoplasm composed of tumour cells in nest. Individual tumour cell appeared polygonal with abundant keratinised cytoplasm, hyperchromatic to vesicular nuclei with prominent nucleoli exhibiting mild to moderate nuclear pleomorphism. Few of the tumour nests shows central keratotic debris. There was evidence of individual cell keratinisation with keratin pearl formation at many places. Atypical mitotic figures were seen admist the tumour cells. Surrounding stroma shows dense lymphoplasmacytic infiltrate. Focal infiltration of tumour cell into underlying muscle was also evident.

Patient was further sent for surgical management of the lesion to the department of oral surgery, marginal mandibulectomy along with submandibular gland excision was done and the excised specimen was sent for histopathological examination. Histopathological features of excisional biopsy revealed, pseudoepitheliomatous hyperplasia in transition to dysplastic expanded epithelium with ulceration and an adjoin infiltrating malignant neoplasm in sheets and in nests. Individual tumour cells appeared polygonal having eosinophilic cytoplasm, vesicular nuclei with irregular chromatin distribution and prominent nucleoli exhibiting moderate nuclear pleomorphism. Many of the tumour nests shows central keratotic debris.

Individual cell keratinization with keratin pearl formation and well apparent intercellular bridges were evident, at place. Tumour gaint cell and readily identifiable atypical mitotic figures were seen scattered amongst these dysplastic cells. Peritumoral dense infiltration by lymphocytes, plasma cells and eosinophils noted and submandibular gland showed no significant pathology with two out of four level IB showed metastatic deposits. Correlating all the clinical and histopathological findings a final diagnosis of moderately differentiated squamous cell carcinoma of the right buccal mucosa and mandibular alveolus with a pathological classification of pT_3pN_{2b}.

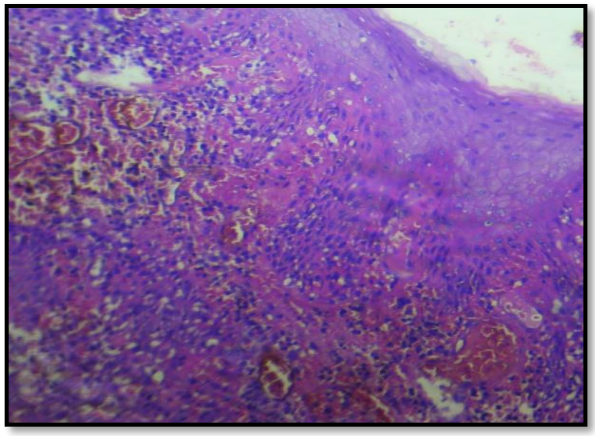

Figure 2: Dysplastic epithelium with infiltrating malignant neoplasm in sheets and nest with dense lymphoplasmacytic infiltration

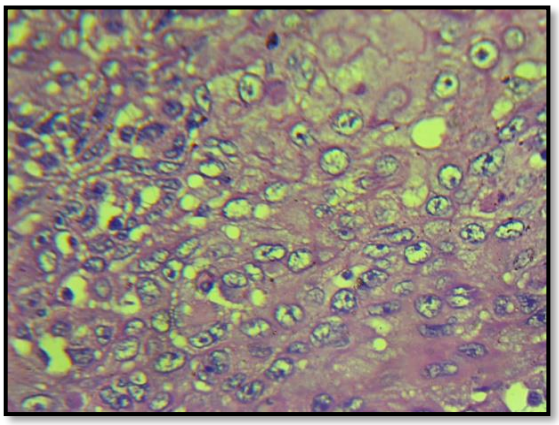

Figure 3: individual tumour cell exhibiting hyperchromatic nuclei with moderate nuclear pleomorphism and atypical mitotic figures among the dysplastic cells

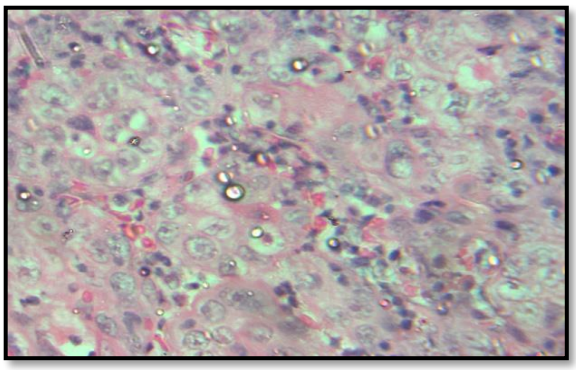

Figure 4: Keratotic debris with individual cell keratinization seen

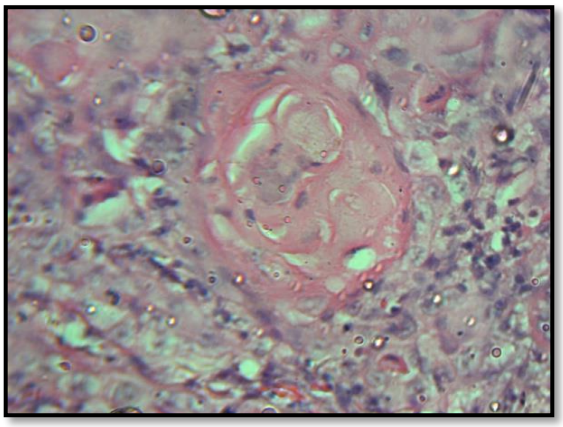

Figure 5: Keratin pearl formation seen in some places

DISCUSSION:

In developing countries, the World Health Organization (WHO) reported that oral cavity carcinoma is the sixth most common cancer in men [9]. The following are risk factors: radiation exposure, alcohol, betel quid, cigarettes (both smokeless and smoke), syphilis, radiation emissions, low iron and vitamin A intake, radiation exposure, and environmental oncogenic viruses (such as EBV and HPV), immune suppression, genetic predisposition, and candidal infection [2]. It has been reported, alcohol and smoking are major risk factors for oral cancer and have a significant impact on patient's morbidity, mortality, recurrence, and second primary tumour [3]. Numerous clinical variations of oral SCC have been examined. It could manifest as leukoplakia, leukoplakia with verrucous development, or erythroplakia [10, 11]. Some of these might worsen with time and develop into a necrotic ulcer with indurated edges. It can potentially result in the formation of a broad mass with irregularly textured superficial papillary projections [4]. Oral SCC patients who have experienced trauma and suffering may experience bleeding after developing a superficial secondary infection, but otherwise oral SCC typically occurs without any pain [4]. Because of the thin, non-keratinized epithelium there, the inner side of the tongue and the floor of the mouth are the areas where OSCC occurs most frequently. The buccal and labial surfaces of the oral cavity, the gingivae, the palatal mucosa, and the retromolar region are the oral regions that experience less frequent occurrences [4]. Oral squamous cell carcinoma is more common in older adults. Histopathological feature of OSCC are hyperplastic proliferated para keratinized stratified squamous epithelium invading into underlying fibro collagenous stroma with keratin pearl and dense inflammatory cells infiltrate. Though the patient is under 40 year, he had been consuming tobacco for the past three years, which may have caused the development of squamous cell carcinoma. When an oral squamous cell carcinoma histopathologic report is positive, patients should have their head and neck contrast-enhanced computed tomography performed in order to aid in the physiological examination and determine the amount of tumour involvement in lymph nodes. When the tongue or other soft tissues are involved, magnetic resonance imaging should be considered [12]. In this case presentation the patient did not have any previous development of any premalignant lesion and the carcinoma developed due to the habit of tobacco consumption because of which the patient presented with ulceroproliferative growth, a provisional diagnosis of epulis was given and mainly through the histopathological findings which correlated with the classical histological feature of OSCC by which a confirmatory diagnosis of moderately differentiated squamous cell carcinoma of the buccal mucosa and the alveolus was given.

CONCLUSION:

Professionals in oral health should be on the lookout for lesions in the buccal mucosa and should be highly suspicious of them. A biopsy should be performed on any suspicious lesion that is still present after two or three weeks because an early diagnosis improves overall survival. The first course of treatment is generally considered surgery. For the best prognosis for oral squamous cell carcinoma, a multidisciplinary strategy should always be used, involving chemotherapy, radiation therapy, surgery, or a combination of these [12].

Conflicts of interest: There are no conflicts of interest.

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