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ORAL SQUAMOUS CELL CARCINOMA OF THE BUCCAL MUCOSA - AN AGGRESSIVE EXTRUDER - A CASE REPORT

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Abstract:

Introduction: Oral cancers, including squamous cell carcinomas, account for over 90% of cases and 128,000 fatalities annually. India has one of the highest occurrences, with males accounting for 22.9% of all deaths. Causes include HPV infection, alcohol consumption, smoking, chronic irritability, infections, and genetic diseases.

Case presentation:A 69-year-old male patient with diabetes and hypertension reported difficulty opening his mouth and persistent pain. A previous surgery revealed a recurrence of carcinoma of the right buccal mucosa. An excisional biopsy confirmed the condition, highlighting the patient's history of smoking and tobacco use. □

Management and prognosis:A right hemi mandibulectomy was performed, with a 2-year follow-up regimen, and no evidence of recurrence.

Clinical Implications: Squamous cell carcinoma of the buccal mucosa is an aggressive oral cancer with poor survival and higher recurrence rates. Regular examinations are recommended for diabetic patients.

Keywords: Oral oncology, Squamous cell, Histopathology

INTRODUCTION:

Malignant neoplasms that impact the tissues or structures of the oral tissues are known as oral cancers, of which over 90% are squamous cell carcinomas. Every year, they are responsible for 128,000 fatalities and 275,000 cases. With 30% of new cases every year, India has one of the highest occurrences. At the forefront of cancer-related deaths in males, oral cavity cancer accounts for 22.9% of all deaths from the disease[1]. Due to the high rates of tobacco use, smoking, and alcohol use among males, India is considered a high-risk location for oral and oropharyngeal cancer[2].

Oral squamous cell carcinoma(OSCC) is one of the potentially debilitating and scarring conditions that impair patients' physical and emotional well-being. It is the most common malignant mucosal tumor (90%) of the head and neck. OSCC may arise from pre-existing oral lesions, mainly by a group of lesions collectively titled oral potentially malignant disorders, which present an increased risk of cancer progression. Males are more likely to be affected by OSCC than females[3].The most common causes of oral SCC include high-risk factors such as human papillomavirus (HPV) infection, drinking alcohol when intoxicated, and being a habitual smoker or betel user[4]. Other risk factors include chronic irritability, infections, sun exposure, poor dental hygiene, and genetic diseases[5].

CASE REPORT:

A 69-year-old male patient reported to the Department of Oral Medicine and Radiology, with a chief complaint of difficulty and restriction in mouth opening for the past 6 months since the previous surgery and has pain originating from the previously operated site in the right body of the mandible which was continuous, dull throbbing in nature that aggravated immensely and did not relieve despite taking medications. The patient was a known case of diabetics and hypertension for the past 20 years and taking medications for the same. Previous surgical history reveals wide local excision followed by Selective Neck Dissection for carcinoma of the right buccal mucosa and had a personal history of smoking and tobacco chewing with the frequency of 3-5 times a day for the past 30 years.

On extraoral examination a facial tumor was examined for facial asymmetry and diffuse swelling. The tumor was 2cm in size and irregularly shaped in the right lower third of the face. It was smooth and soft, with no discoloration. The patient was unable to perform normal TMJ movements. A lymph node was found to be palpable, mobile, and tender, measuring approximately 1 cm x 1 cm.

The intra-oral examination was difficult due to restricted and painful mouth opening which was limited to <2cm. A single well-defined ulceroproliferative lesion could be visualized, measuring approximately of size 3*3cm in dimension, present over the Right buccal mucosa extending into the buccogingival sulcus and lateral border of the tongue. The margins of the ulcer were everted, base with marked induration, the floor showed slough, and the surrounding mucosa appeared non-tender and erythematous.

The patient underwent blood investigations, including biochemical tests, and radiological tests, which showed normal blood levels, except for glucose and monocytes levels, and a nonreactive HIV test. CECT analysis reveals a large, irregular, and enhancing soft tissue mass in the right buccal space, extending to the tongue's gingivobuccal sulcus and tongue border, with skin and subcutaneous tissue infiltration.

With these findings the provisional diagnosis was attained to be Recurrence carcinoma of Right mandibular alveolus and buccal mucosa. A right hemi mandibulectomy with wide local excision of lesion was performed. For further evidence an excisional biopsy of the swelling had been performed.

The histopathological findings showed, a mucosa in polypoidal and papillary configuration lined by hyperplastic hyperkeratotic squamous epithelium with high grade dysplasia [FIGURE 1 & 2], atypical epithelial downgrowths and an underlying infiltrating malignant neoplasm composed of nests and trabeculae of mild to moderately pleomorphic polygonal cells with nucleomegaly, vesicular nuclei, small prominent nucleoli and moderate to abundant cytoplasm. Keratin pearls are

seen[FIGURE 3]. Intervening desmoplastic stroma shows brisk lymphoid infiltrate. Tumor infiltrates subepithelial fibrocollagenous and fibroadipose tissue. Tumor invades bony trabeculae. Epidermis and dermis are free of tumor. Lateral soft tissue resection margin is free of tumor. Specimen revealed tumor size of 3.6 X 2.9 X 2 Cm with the depth of invasion to be 1.8 Cm, extent invading the mandibular bone and all the margins were seen to be free from the tumor with the pathologic stage classification (pTNM, ajcc 8th edition) of pT4a / Nx / Mx. Finally, according to Broders' classification, a conclusive diagnosis of well-differentiated squamous cell carcinoma involving the left buccal mucosa was diagnosed. The patient was advised a monthly follow-up regimen of 2 years with no evidence of recurrence to date.

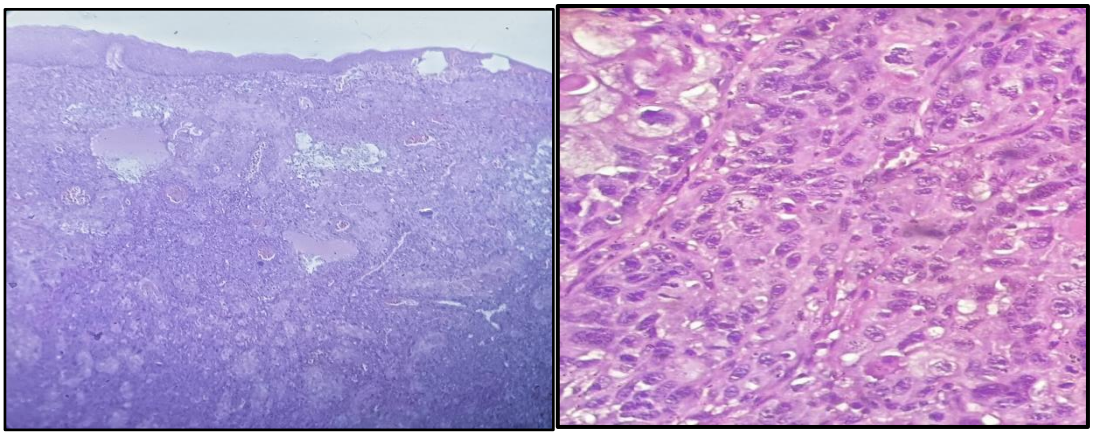

FIGURE 1 & 2 - Hyperplastic hyperkeratotic stratified squamous epithelium with high grade dysplasia

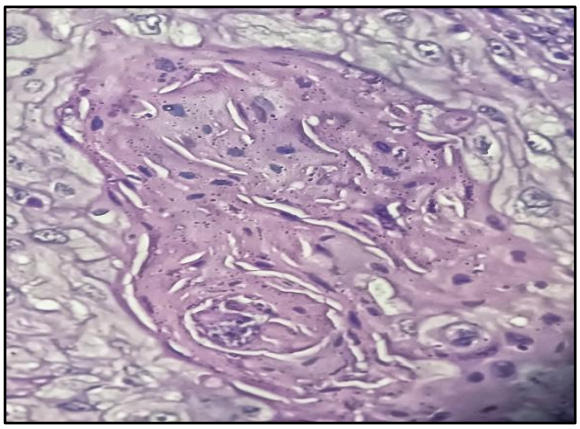

FIGURE 3 - characteristic feature -keratin pearl formation

DISCUSSION:

World Health Organization(WHO) described carcinoma of the oral cavity as the 6th commonest cancer in males in developing countries[4].OSCC is classified as well-differentiated, moderately-differentiated, or poorly-differentiated squamous cell carcinoma based on histopathology[6]. OSSC in males is predominantly poorly and moderately differentiated, while in females, it is primarily well and moderately differentiated, as observed in this case[3].The stage of cancer, location as well as the patient's general condition, all influence the prognosis for OSCC. Approximately 80%–90% of individuals with early-stage OSCC will survive for five years, compared to only 30%–50% with advanced-stage OSCC[7]. OSCC is most common in the tongue and floor of the mouth due to thin, non-keratinized epithelium, while less common in buccal and labial surfaces, gingivae, palatal mucosa, and retromolar area.. Compared to oral malignancies at other locations, buccal mucosa SCC is recognized for its aggressiveness. Risk factor associated are tobacco (smokeless and smoking), alcohol, betel quid, agents containing phenols, emission of radiation, lack of iron and Vitamin A in diet, syphilis, environmental and occupational factors, oncogenic viruses (HPV and

EBV), Candidal infection, genetic predisposition, immunosuppression. Most of the cases of oral carcinoma are associated with tobacco chewing habit as in this case and usually appear as a premalignant lesion like leukoplakia before progressing to the malignant stage. It has been reported that tobacco and alcohol intake is not only prime risk factors for oral carcinoma but also shows vigor effects on the morbidity, mortality, recurrence and second primary tumor in patients[4].
This case had a 30-year history of chewing tobacco with a frequency of three to five times per day, which was consistent with the previously listed risk factors of OSCC and its recurrence. Here patient's age also played a major role for his condition since aging is considered to contribute to the development of OSCC, owing to multiple interrelated factors. As individuals advance in years, they become more susceptible to the risk factors associated with OSCC, such as exposure to tobacco and alcohol use. Furthermore, the decline in the body's natural defense mechanisms with age increases the vulnerability of older individuals to cancer development. Moreover, the ability of the body to repair DNA damage decreases with age, thus potentially further contributing to the onset of OSCC[8].

CONCLUSION:

It is because of the possibility of developing a secondary cancer in patients with oral SCC, periodic examination of whole oral cavity mucosa as well as the original location of the tumor is recommended. On the other hand, as diabetic patients are immunocompromised, they should have periodic examination of the oral mucosa and the blood sugar level which must be simultaneously monitored.

Declaration of patients consent: We ensured that we have obtained all the appropriate consent forms from the patient for their images and clinical information's.

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Conflicts of interest : There are no conflicts of interest.

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Ethical approval: Not applicable (We have not done any in-vivo studies in humans or animals)

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