

Oral Squamous Cell Carcinoma Of Floor Of Mouth - As The Destructive Emergent: A Case Report

Dr. K. Balasankari^{1*}, Dr. V.B. Sujitha², Dr. C.B. Sushmi³, Dr. K. Subhiksha⁴, Dr. Pradeep Shankar S⁵, Dr. M. Sathish Kumar⁶

¹*Post Graduate- Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

²Crri- Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

³Crri- Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

⁴Crri-Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

⁵Senior Lecturer- Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

⁶Head Of The Department- Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

***Corresponding Author:** Dr. K. Balasankari

*Department Of Oral And Maxillofacial Pathology And Oral Microbiology - Karpaga Vinayaga Institute Of Dental Sciences

Abstract:

Oral Squamous Cell Carcinoma is the most common head and neck malignancy which occurs inside the oral cavity. Clinically, Oral Squamous Cell Carcinoma is characterised by a red or white lesion with uneven surface and distinct borders. Early-stage lesions are commonly painless, however they can cause discomfort and exhibit features such as ulceration, nodularity, and tissue attachment as they progress. The Posterior lateral border of the tongue has the best prevalence of oral squamous cell carcinoma, accounting for about 50% of all squamous cell carcinoma cases followed by floor of the mouth, hard palate, the gingiva, the buccal mucosa. This case report discusses about 66 year old male patient with a painful growth in the left side of the tongue.

Keywords: Carcinogenesis, Squamous cell, Tobacco.

INTRODUCTION:

Oral squamous cell carcinoma (OSCC) develops at the mucosal epithelium of the oral cavity. In 2020, 377,713 OSCC reported globally. According to the Global Cancer Observatory (GCO), the occurrence of OSCC will rise by 40% in 2040, followed by persistent contact to numerous hazardous factors, consisting of tobacco, alcohol, betel quid (BQ), and human papillomavirus (HPV), will result in the development of Oral Potentially Malignant Disorders (OPMDs), that are oral mucosal lesions with an expanded danger of growing into OSCC (1).

Squamous cell carcinoma (SCC) is the second most common malignancy after basal cell carcinoma, with an increasing incidence worldwide (2). Although many factors can increase the risk for SCC, cumulative sun exposure, especially in childhood and teenage, is of greatest importance. Moreover, in recent years, immunosuppression, including that associated with organ transplantation, has emerged as an increasingly important contributor to tumorigenesis and the arousal of SCC in areas of chronic inflammation (3,4). SCC is linked with various factors, including tobacco consumption in the form of smoke and smokeless tobacco (SLT) products, alcohol, and human papillomavirus (HPV). SCC can also occur at an early age because of the family history of some genetic alternations in the genome, such as Xeroderma pigmentosum, Fanconi anaemia, Dyskeratosis congenital. (5) It may take various clinical forms. It may resemble a leukoplakia, a verrucous leukoplakia, an erythroplakia, any of which may eventually develop into a necrotic ulcer with irregular, raised indurated borders, or into a broad based exophytic mass with a surface texture which may be verrucous, pebbled or relatively smooth. Large lesions may interfere with normal speech, mastication or swallowing [6,7,8]. Squamous cell carcinoma has precursor lesions called actinic keratosis, which exhibits tumor progression and has the potential to metastasize in the body (9). Various treatment modalities include surgery, chemotherapy, radiation or combination of these, and photodynamic therapy have been recently reported (10). This article represents a 66 year old male patient with a painful growth in the left side of tongue.

CASE REPORT

A 66 years old male patient reported to Department of oral and maxillofacial pathology with painful growth in the left side of tongue for past 1 week. Patient gave history of pain which was acute in onset, intermittent in nature, throbbing aggravated on mastication and did not have any relieving factors. Past dental history revealed that patient underwent extraction before one month. Patient was a known smoker for past 40 years and consumed 3 packs per day and quit the habit before 15 days. Patient was also a known alcoholic for past 15 years and consumes averagely 200ml per day. On past medical history patient had undergone surgery for gall bladder stone removal under general anesthesia 7 years back. On Extraoral examination, no abnormalities were seen. Patient was able to perform all mandibular movements with mouth opening upto 25mm. On Lymph node examination palpable submandibular lymph nodes were present which was single, nodular, firm in consistency and fixed to underlying structures. On intraoral soft tissue examination, on inspection, an ulceroproliferative lesion of size 3 x 2 cm seen on the floor of the mouth which was irregular in shape with everted margins extending anteriorly 0.5 cm posterior to the alveolar ridge, posteriorly 3 cm from retromolar region laterally involving labial vestibule and medially involving floor of the mouth. On palpation, all inspeactory findings were confirmed with respect to site, size, shape, colour, tenderness was present with painful tongue movement, upward and lateral movements of tongue were restricted. Surrounding skin found to be erythematous with no evident of pus discharge. Hard tissue examination revealed completely edentulous maxilla and partially edentulous mandible. With these clinical findings a provisional diagnosis of carcinoma of left floor of mouth.



Figure 1: ulceroproliferative growth seen in the floor of the mouth

Patient was then referred to the Department of oral and maxillofacial surgery for incisional biopsy. And incisional biopsy was performed and the incised specimen was sent for the histopathologic examination. On microscopic examination, shows fragments of fibrocollagenous tissue lined by keratinized stratified squamous epithelium with adjacent areas exhibiting parakeratosis and irregular acanthosis associated with bulbous downward protrusion of the squamous epithelium into the underlying stroma with pushing margin. The individual tumor cells exhibited abundant keratinised eosinophilic cytoplasm and fairly uniform regular nuclei with occasional nuclear enlargement and intraepithelial keratin pearl formation and neutrophilic aggregates. There was band like diffuse lymphocytic infiltrate at the epithelial-stromal interface without breach in the basement membrane which suggested the diagnosis of verrucous carcinoma of floor of mouth.

Patient was again referred to the Department of oral and maxillofacial surgery for wide local excision biopsy with selective lymph node dissection. And the excised specimen was then sent for histological examination which revealed hyperplastic stratified squamous epithelium exhibiting irregular acanthosis, hyperkeratosis, and areas of ulceration with an underlying infiltrating malignant neoplasm arranged in solid sheets. The individual tumor cells were polygonal in shape with abundant eosinophilic keratinized cytoplasm and pleomorphic hyperchromatic nuclei. Many areas exhibited extracellular keratin pearl formation along with dense stromal lymphoplasmacytic infiltrate surrounding the tumor cell lobules. The tumor showed infiltration into underlying skeletal muscle bundles and adjacent minor mucus salivary glands. With this clinicopathological correlation a final confirmative diagnosis of Infiltrating well differentiated Squamous cell carcinoma of floor of mouth

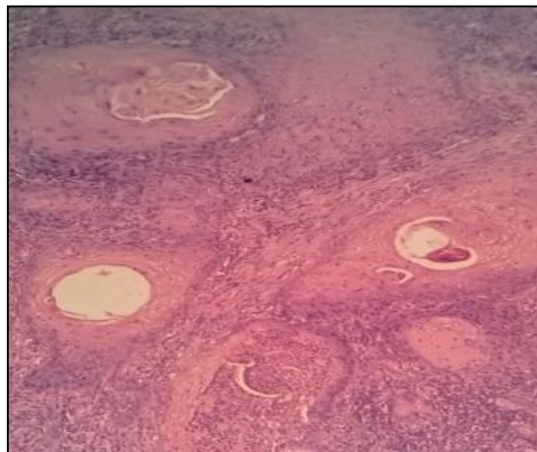


Figure 2: Hyperplastic hyperkeratotic stratified squamous epithelium

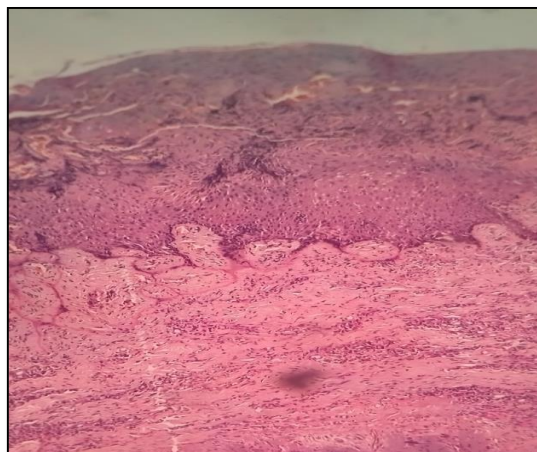


Figure 3: Infiltrating malignant neoplasm in solid sheets with dense stromal lymphoplasmacytic infiltrate

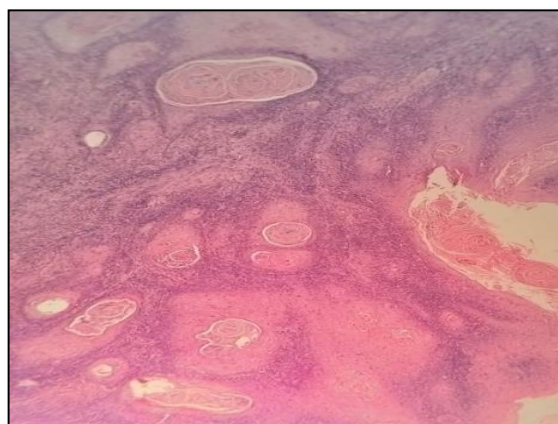


Figure 4: Keratin pearls formation

DISCUSSION

Oral Squamous Cell Carcinoma is defined as malignant neoplasia of the oral cavity and includes subsites - buccal mucosa, floor of mouth, anterior tongue, alveolar ridges, retromolar trigone, hard palate, and inner part of lips. (11) The contributing

factors for the development of Oral Cavity Squamous Cell Carcinoma are the consumption of tobacco products in smoke or smokeless form. Moreover, low socioeconomic status, self-negligence, and lack of awareness are the key factors for Squamous Cell Carcinoma to occur. Oral Squamous Cell Carcinoma is generally observed in people aged above 40 years compared to younger ones. Worldwide, a higher prevalence of Oral Squamous Cell Carcinoma occurs in males than females, 5.8% vs. 2.3% per 100,000 (12,13) it is also linked with various factors like alcohol, human papillomavirus (HPV), Candida infections, radiation, genetic factors, malnourishment, diet, and chemical exposures to betel nut and areca nut (14,15). It can also occur at an early age because of the family history of some genetic alterations in the genome, such as Xeroderma pigmentosum, Fanconi anaemia, Dyskeratosis congenital (5). Histopathological assessment of SCC determines the tumor grading by identifying the abnormal cells differentiation. The OSCC usually presents as leukoplakia, erythroplakia and may progress into a necrotic type of ulcer with indurated edges. Furthermore, it may give rise to irregular superficial structure consisting of papillary projections. Usually scc is painless in nature, unless it involves deeper structures and become more aggressive. (16) Poorly differentiated SCCs are habitually considered more aggressive, and in many cases presenting worse prognosis. The classic histological features of squamous cell carcinoma that may be prognostic, including the pattern of invasion, budding, desmoplastic reaction, lymphovascular invasion, and perineural invasion and keratin pearl formation. (17) As for the staging system AJCC/UICC (Union for International Cancer Control) is world widely used. Other than clinical & histological features staging plays an important role, prior to treatment (clinical staging, cTNM), after surgical treatment (pathological staging, p TNM), and at disease recurrence (rTNM) are done. In our case, the lesion was well differentiated with a staging of p TNM Stage: pT₁N₀ given the size and the presence of palpable lymph nodes. (15) In this case presentation, patient was at high-risk for developing oral cancer due to his history of heavy smoking and alcohol consumption that lead to the progression of the disease. Patient did not present with any premalignant lesion in this case but had developed ulceroproliferative growth with everted margins which was a classical feature of cancerous growth and for further confirmation the histopathological evaluation was done which also showed characteristic keratin pearl formation with dysplastic features of oral squamous cell carcinoma and by these clinicohistopathological correlation, this case was confirmed to be a Well differentiated squamous cell carcinoma of floor of the mouth.

CONCLUSION

Like the majority of oral cancers, SCCs of the floor of the mouth can be often asymptomatic and identified at advanced phase leading to a poor prognosis. Hence, adequate knowledge regarding SCC among dentists is required for early diagnosis/management, and regular postoperative follow-ups are mandatory for optimum treatment outcome and recurrence prevention to improve the survival rates.

ANONYMITY:

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

Acknowledgements: Nil.

REFERENCES

1. Romano, A. et al. Noninvasive imaging methods to improve the diagnosis of oral carcinoma and its precursors: state of the art and proposal of a three-step diagnostic process. *Cancers* 13, 2864 (2021).
2. Warszawik-Hendzel O, Olszewska M, Maj M, Rakowska A, Czuwara J, Rudnicka L. Non-invasive diagnostic techniques in the diagnosis of squamous cell carcinoma. *J Dermatol Case Rep.* 2015;9(4):89–97. doi: 10.3315/jdcr.2015.1221.
3. Alam M, Armstrong A, Baum C, et al. Guidelines of care for the management of cutaneous squamous cell carcinoma. *J Am Acad Dermatol.* 2018;78(3):560–578.
4. Kim C, Cheng J, Colegio OR. Cutaneous squamous cell carcinomas in solid organ transplant recipients: emerging strategies for surveillance, staging, and treatment. *Semin Oncol.* 2016;43(3):390–394.
5. Reich M, Licitra L, Vermorken JB, Bernier J, Parmar S, Golusinski W, et al. Best practice guidelines in the psychosocial management of hpv-related head and neck cancer: Recommendations from the european head and neck cancer society's make sense campaign. *Ann Oncol* 2016;27(10):1848–54. <https://doi.org/10.1093/annonc/mdw272>.
6. J. Bagan, G. Sarrion and Y. Jimenez, "Oral Cancer: Clinical Features," *Oral Oncology*, Vol. 46, No. 6, 2010, pp. 414-417.
7. B. W. Neville and T. A. Day, "Oral Cancer and Precancerous Lesions," *CA: A Cancer Journal for Clinicians*, Vol. 52, No. 4, 2002, pp. 195-215

8. C. Scully and J. Bagan, "Oral Squamous Cell Carcinoma Overview," *Oral Oncology*, Vol. 45, No. 4, 2009, pp. 301-308.
9. 9.Nocini R, Lippi G, Mattiuzzi C. Biological and epidemiologic updates on lip and oral cavity cancers. *Ann Cancer Epidemiol* 2020;4:1. <https://doi.org/10.21037/ace.2020.01.01>.
10. Familial Cancers of Head and Neck Region 2017:1–6. <https://doi.org/10.7860/JCDR/2017/25920.9967>
11. Network NCC. NCCN Head and Neck Cancer Series: Oral cancer. NCCN Global Guidel 2018:169–73.
12. 12.Rivera C. Essentials of oral cancer. *Int J Clin Exp Pathol* 2015;8:11884–94. <https://doi.org/10.5281/zenodo.192487>.
13. Warnakulasuriya S. Global epidemiology of oral and oropharyngeal cancer. *Oral Oncol* 2009;45(4-5):309–16. <https://doi.org/10.1016/j.oraloncology.2008.06.002>.
14. Johnson NW, Jayasekara P, Amarasinghe AA. Squamous cell carcinoma and precursor lesions of the oral cavity: epidemiology and aetiology. *Periodontol.* 2000. 2011;57:19–37. [PubMed] [Google Scholar]
15. Johnson NW, Jayasekara P, Amarasinghe AA. Squamous cell carcinoma and precursor lesions of the oral cavity: epidemiology and aetiology. *Periodontol.* 2000. 2011;57:19–37. [PubMed] [Google Scholar]
16. Feller L, Lemmer J Oral Squamous Cell Carcinoma: Epidemiology, Clinical Presentation and Treatment, *Journal of Cancer Therapy*, 2012; 3: 263-268
17. Matsuo K, Akiba J, Kusakawa J, Yano H. Squamous cell carcinoma of the tongue: subtypes and morphological features affecting prognosis. *Am J Physiol Cell Physiol.* 2022 Dec 1;323(6):C1611-C1623. doi: 10.1152/ajpcell.00098.2022. Epub 2022 Oct 17. PMID: 36252129.