

A Comprehensive Study on Oral *Verrucous carcinoma*

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Publication Date: 2025/06/18

Abstract: Oral verrucous carcinoma is a low-grade form of squamous cell carcinoma that commonly appears on the skin and oral mucosa. Clinically, it appears as an ulcer proliferative lesion on the buccal mucosa, further seen on other sites like the gingiva, tongue, and hard palate, or as a proliferative or cauliflower-like lesion [1]. Due to its distinct biologic behaviour, it is a separate entity from oral cavity SCC [2]. VC generally affects people who chew tobacco, smoke, or use snuff. In 1948, Ackerman was the first to define this lesion as a distinct entity [3].

Keywords: Ackermann Tumor, Verrucous Carcinoma.

How to Cite: Dr. Drishya Dinesh; Dr. Sandhra Maria Sibi; Dr. Kavya C; Dr. Muhsina C H; Dr. Dhanya S Rao; Dr. Raghavendra Kini; (2025) A Comprehensive Study on Oral *Verrucous carcinoma*. *International Journal of Innovative Science and Research Technology*, 10(6), 1004-1007. <https://doi.org/10.38124/ijisrt/25jun703>

I. INTRODUCTION

Oral verrucous carcinoma is an uncommon tumour variant of squamous cell carcinoma presenting exophytic, proliferative or cauliflower like growth, which was first coined by Lauren V. Ackermann in 1948 from whom Ackermann's tumor has gained its name [4]. The rate of prevalence reported till date ranges only up to 10%. This neoplastic lesion often renowned as Ackerman's tumor are also known as, Buschke-Loewenstein tumor, florid oral papillomatosis, and carcinoma cuniculatum. This invasive tumor develops gradually and is unlikely to metastasize. Based on clinical view it is an asymptomatic thick white plaque resembling cauliflower like appearance [5]. Although the etiology is unknown it is believed that chronic tobacco chewing or Prolonged smoking habits play a major causative factor for verrucous carcinoma [6].

In many parts of the world, cancer is a major health concern. The World Health Organization's International Agency for Research on Cancer (IARC-WHO) foresee that the number of new instances of cancer would increase dreadfully, from 10 million in 2000 to 15 million in 2020. Oral cancer being one of the top 10 most prevalent diseases in the world primarily affects older people from impoverished backdrop. The usage of tobacco, alcohol, and betel is the chief risk factor for oral squamous cell carcinomas (OSCC), which attribute for the majority of malignancies of the oral cavity [7].

II. CASE REPORT

A 57-year-old male patient was reported to the department of oral medicine with a primary complaint of swelling in the lower right front teeth region since 2 years. The swelling was initially small in size, has gradually increased to its current form. It is not associated with pain, loss of appetite, weight loss, difficulty in eating, or fever. - The patient has been a known case of hypertension for the past year and is on medication. The patient also had a habit of chewing tobacco and areca nut for the past 10 years (5-10 times per day) but has quit the habit for the last 2 years.

On extra oral examination, on inspection, Gross facial asymmetry seen with diffuse swelling on the right lower third of the face with no midline shift. A swelling which extends superiorly at the level of corner of the mouth and inferiorly to the lower border of the mandible and medially 1 cm from the midline with no secondary changes noted on the surface [FIGURE1].

On palpation - the swelling measures 1.5 x 1.5 cm, non-tender, no local rise in temperature and firm in consistency. The skin over the swelling was non-pinchable. A solitary right submandibular lymph node was palpable which was soft in consistency, measuring approximately 1 x 1 cm, mobile and non-tender.

On intra oral inspection revealed a solitary, proliferative, cauliflower-like growth on the lower right vestibular region extending from 32 to the mesial of 47 posteriorly and it appears to completely fill the buccal and

labial vestibule and is irregular in surface. [FIGURE 2], however growth does not extend to involve the lingual aspect.

On palpation, the growth is pedunculated and arising from the edentulous area of 45 which was non-tender, non-compressible, non-pulsatile and measuring approximately 5x2.5 cm. On hard tissue examination, missing teeth is noted in relation to 44&45 and grade 1 mobility in relation to 41, 42

& 43 and Grade 2 mobility in relation to 46 & 48 with generalized attrition. Based on the history and clinical examination a provisional diagnosis was given of carcinoma of the right alveolus from 32 -47 region and chronic generalized periodontitis was established. A differential diagnosis of verrucous carcinoma and large papilloma was considered.



Fig 1 Shows Verrucous Growth on the Buccal Vestibule.



Fig 2 Shows Growth Extending Anteroposteriorly to Mesial of 47 and Bucco- Lingually Involving the Buccal Vestibule.

An OPG was also taken reveals ill- defined radiolucency noted on the right side of the mandible extending from 43 -46 region with ragged irregular border, the radiolucency extends inferiorly to periapical region of 43 and 46. Generalised bone loss is also noted in the maxillary and mandibular arch. [FIGURE 3].

An CECT scan was taken which revealed an ill- defined iso to hypodense lesion noted in the right buccal mucosa measuring approximately 29 x 25 mm anteriorly it is seen extending to the buccinator muscle and posteriorly it crosses the alveolar process of mandibular bone on right side and causes erosion. Post contrast study shows heterogeneous

enhancement. An enlarged lymph node noted at level IB on right side.

Radiographically it is confirmed that the bone in the mandibular region is involved with the carcinoma. An Incisional biopsy was conducted which revealed cellular atypia and the cells have pale, glassy cytoplasm with prominent nucleoli along with sub epithelial haemorrhage. Considering the clinical, radiological and histopathological analysis a final diagnosis of verrucous carcinoma of right mandible was given. Patient was sent for complete surgical excision of the lesion followed by radiotherapy by plan.



Fig 3 Shows Severe bone loss in the Anterior Mandibular Region.

III. CASE DISCUSSION

Fridell and Rosenthal illustrated a case of well-differentiated squamous cell carcinoma of the oral cavity as "papillary verrucoid carcinoma," in the year 1941, which is the foremost known evidence of a VPL. The term "verrucous carcinoma" was coined by Ackerman in 1948 after reporting 31 cases that had been similar [8]. In spite of its deceptively benign microscopic appearance, verrucous carcinoma can show clinically destructive behaviour [9].

According to Ackerman's study, 11 out of 18 patients (61%) with buccal cancers were tobacco chewers. Based on the reports of Shear and Pindborg revealed that 24 patients (86%) used tobacco and one used areca quid chewer out of 28 patients with verrucous lesions. Tobacco turn up to be a significant factor for the reason of verrucous lesions. Chen et al.'s study reported that 97.3% of VCs cases in Taiwan had a history of areca quid chewing [10].

Generally verrucous carcinoma goes unrecognized or unchallenged because of its benign inactive tumour behaviour. The studies have shown major use of tobacco, consumed in the form of inhaled/smokeless along with alcohol is the principal cause of verrucous lesion. It often develops at the site where tobacco was placed habitually [11].

Histopathologically a definite differentiation between VH and VC is required. Where VH is more superficial and does not penetrate into deeper epithelial layers than adjacent normal epithelium. VH has dysplastic cells which can later progress to VC or Squamous cell carcinoma. Whereas on the other hand VC expands more deeply, pulling the adjacent normal epithelium at its margins [12].

The fact that snuff is more commonly used among elderly women, especially in the south-eastern United States is the reason for the greater prevalence of verrucous

carcinoma of the oral cavity among women. The elevated incidence of oral verrucous carcinoma in elderly women can be attributed by greater exposure to snuff or other oral tobacco products. The systemic incompetence in the immune system due to the tumor has gender and age-related factors contributing to it which is often implicated by the oral epithelium. [13].

The diverse treatment modalities for VC are as follows: surgery, radiotherapy, photodynamic therapy, interferon and chemotherapy, out of which surgical excision is the most preferred [14]. At present, surgery, radiotherapy, and chemotherapy are the principle treatment modalities of head and neck VCs. Surgical excision has been the primary treatment method for verrucous cancer. Undoubtedly there would be a functional deficit after an oral tumor resection and a limited cohort who cannot afford surgical treatment due to debilitating health condition end up opting for radiotherapy or chemotherapy [15].

IV. CONCLUSION

Oral verrucous carcinoma is a relatively uncommon form of SCC of the oral cavity and must be distinguished from conventional SCC due to its locally invasive, non-metastasising behaviour with a better prognosis. An absolute diagnosis requires a comprehensive analysis of the clinical symptoms and histopathological findings between the pathologist and the clinician. Moreover, the effective course of treatment appears to be surgical intervention. Long-term follow-up is essential to monitor for any signs of recurrence, assuring the best possible prognosis for patients affected by this uncommon yet significant disease.

REFERENCES

- [1]. Keerthi Narayan V. Verrucous Carcinoma of Buccal Mucosa in Female: A Rare Case Report of Traumatic Tooth Origin. *Case Rep Dent.* 2021 Jun 11;2021:6673038. doi: 10.1155/2021/6673038. PMID: 34194849; PMCID: PMC8214479.
- [2]. McCoy JM, Waldron CA: Verrucous carcinoma of the oral cavity : a review of 49 cases, *Oral Surg* 52:623-629,1948.
- [3]. Ackerman LV: Verrucous carcinoma of the oral cavity,*Surgery* 23:670-678,1948.
- [4]. S Malhotra V Raghavan A Kumar A K Singh Verrucous carcinoma on pre-existing oral submucous fibrosis *J Indian Acad Oral Med Radiol*2015275937.
- [5]. MS Greenberg M Glick JA Ship Burket's *Oral Medicine* 11th edi Decker Inc Hamilton 2008 162.
- [6]. Okubo M, Iwai T, Nakashima H, Koizumi T, Oguri S, Hirota M, Mitsudo K, Tohnai I. Squamous Cell Carcinoma of the Tongue Dorsum: Incidence and Treatment Considerations. *Indian J Otolaryngol Head Neck Surg.* 2017 Mar;69(1):6-10. doi: 10.1007/s12070-016-0979-z. Epub 2016 May 7. PMID: 28239570; PMCID: PMC5305651.
- [7]. Dr. K. Balasankari, Dr. E.Sandhiya, Dr. M.Ashwini, Dr. M. Sehtaj, Dr. M. Arunachalam, & Dr. M. Sathish Kumar. (2023). VERRUCOUS CARCINOMA OF LEFT BUCCAL MUCOSA– A CASE REPORT. *Journal of Population Therapeutics and Clinical Pharmacology*, 30(5), 874-878.
- [8]. Kallarakkal TG, Ramanathan A, Zain RB. Verrucous papillary lesions: dilemmas in diagnosis and terminology. *Int J Dent.* 2013;2013:298249. doi: 10.1155/2013/298249. Epub 2013 Sep 24. PMID: 24223590; PMCID: PMC3800582.
- [9]. Nnko KA, Pima RT, Baraka CJ, Chalya D, Rwakatema DS, Mremi A. Surgical management of a huge oral verrucous carcinoma: A case report and review of the literature. *SAGE Open Med Case Rep.* 2024 May 22;12:2050313X241252344.: 10.1177/2050313X241252344. PMID: 38784245; PMCID: PMC11113021.
- [10]. Rao DS, Kalappanavar AN, Ali IM, Annigeri RG. Verrucous carcinoma-an enigma: Case report and review. *Contemp Clin Dent.* 2016 Jul-Sep;7(3):391-3. doi: 10.4103/0976-237X.188576. PMID: 27630507; PMCID: PMC5004556.
- [11]. Walvekar RR, Chaukar DA, Deshpande MS, Pai PS, Chaturvedi P, Kakade A. et al. Verrucous carcinoma of the oral cavity: A clinical and pathological study of 101 cases. *Oral Oncology* 2009; 45: 47– 51.
- [12]. C Pravda H Srinivasan D Koteeswaran LA Manohar Verrucous carcinoma in association with oral submucous fibrosis *Indian J Dent Res*201122615.
- [13]. Clive RE, Ocwieja KM, Karnell LH, Hoyler SS, Seiffert JE, Young JL, et al. A national quality improvement effort: cancer registry data. *J Surg Oncol* 1995; 58:155–61.
- [14]. Pulivarthi S, Pachipulusu B, Malligere SB, Govindraju P, T S MK. Ackerman's Tumour - A Case Report. *J Clin Diagn Res.* 2016 Jan;10(1):ZD08-10. doi: 10.7860/JCDR/2016/13508.7109. Epub 2016 Jan 1. PMID: 26894186; PMCID: PMC4740715.
- [15]. Wang, Na MDa; Huang, Ming MDB; Lv, Hong MD, PhDc,* . Head and neck verrucous carcinoma: A population-based analysis of incidence, treatment, and prognosis. *Medicine* 99(2):p e18660, January 2020. | DOI: 10.1097/MD.00000000000018660.