

Neck Dissection in Verrucous Carcinoma: A Surgical Dilemma

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Oral verrucous carcinoma (OVC) is a distinct low grade variant of squamous cell carcinoma (SCC) of the oral cavity. OVC is a rare tumor representing only 3-4% of all carcinoma. OVC is characterized by a slow growing, painless, broad based verrucous or wart like papillary lesion. The lesion lacks ulceration and has a propensity for local invasion rather than metastatic spread. Transformation of VC to anaplastic or poorly differentiated SCC is about 30-40%. Surgical excision with adequate margins of resection seems to be the clear preference for treatment. The need for neck dissection is an important consideration in planning therapy for OVC. The aggressive clinical presentation of the tumor often sways clinical judgment in favor of performing lymph node dissection, especially in the presence of clinical lymphadenopathy. It is reasonable to consider a selective neck dissection such as supra-omohyoid neck dissection in situations where there is uncertainty regarding the pathological diagnosis in the phase of clinically suspicious lymphadenopathy. Here we are presenting a case report of OVC in 65-year-old male patient treated with surgical excision and right side supra-omohyoid neck dissection.

Keywords: Neck dissection, Squamous cell carcinoma, Tumor, Verrucous carcinoma

INTRODUCTION

Verrucous carcinoma (VC) was first reported by Ackerman in 1948 and it is also known as Ackerman's Tumor or VC of Ackerman.^{1,2} It is the variant of the squamous cell carcinoma (SCC) having 3-4% of low grade malignancy.³ It is a slow growing, exophytic and locally aggressive in nature.⁴ The mucosal surface of the head and neck is the predilection site for the VC, most commonly involved is oral cavity and larynx. In the oral cavity, it is most commonly present on the buccal mucosa (61.4%), followed by tongue, floor of mouth, lip and palate.¹ This tumor is predominantly seen in males over the sixth decade.³

Various treatment modalities have been tried. It includes surgery, radiation therapy, chemotherapy, cryotherapy, laser therapy, photodynamic therapy, and treatment with recombinant α -interferon.^{3,5} Surgical excision with adequate margins of resection seems to be the most commonly used treatment for VC.⁵

Kraus and Perez-Mesa reported lymph node metastasis in oral VC (OVC) is 3.8%.⁶ The chances of anaplastic transformation of VC into SCC is 20%.^{5,6} The frequency of cervical lymph node metastasis in oral SCC is estimated to be 45.5%.⁶ Irrespective of treatment, the recurrence rate of VC is 26-57%.^{3,5} Because of aggressive clinical presentation with true lymph node involvement and high anaplastic transformation rate, the need for neck dissection is an important consideration in planning therapy for VC.^{2,3} Here, we report a case of VC managed by surgical excision with right side supra-omohyoid neck dissection and split thickness skin graft from right thigh.

CASE REPORT

A 65-year-old male patient reported to the department of oral and maxillofacial surgery for routine dental check-up. On intraoral examination, on inspection, a grayish-white lesion approximately 4-5 cm, well defined, corrugated in appearance that was extending from right corner of the mouth to the retromolar region (Figure 1). On palpation, the lesion was non-scrappable and non-tender. The lesion was not associated with any ulceration or growth. Gingiva was red, edematous and bleed on probing.

On extraoral examination, face was symmetrical with normal mouth opening. Lymph nodes (Level I and II) were palpable. Patient gave a history of diabetes and was under

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medication since 15 years. Patient also gave a history of consumption of alcohol approx. 120 ml daily since 2 years. In the radiological examination, orthopantomogram did not show any bony changes. Histopathological examination of incisional biopsy specimen confirmed the diagnosis of VC (Figure 2). Hematological investigations were within normal range.

Surgery was carried under general anesthesia with excision of the primary tumor mass followed by supra-omohyoid neck dissection on the right side (Figure 3). Then split thickness skin graft was taken from the right thigh and sutured at the surgical site (Figures 4 and 5). The patient was discharged after one week with no post-operative complications. The patient has remained disease free for 1 year.

DISCUSSION

VC is a variant of a well-differentiated carcinoma with a slow-growing, exophytic, fungating and locally aggressive nature that is associated with a low metastatic risk.³

The etiopathogenesis of OVC is unclear, however, some studies have shown strong associations with tobacco use,

including inhaled as well as smokeless tobacco, alcohol, and opportunist viral activity associated with human papilloma virus (HPV).^{2,4} More recently, studies have further confirmed the association between HPV and OVC by detecting HPV–DNA types 6, 11, 16, and 18 by polymerase chain reaction, restriction fragment analysis, and DNA slot–blot hybridization.^{4,7} In Ackerman's study, 11 out of 18 patients (61%) with buccal cancers were tobacco chewers.¹

The macroscopic appearance of the tumor depends on several factors like duration of lesion, degree of keratinization and the changes in adjacent mucosa. Clinically, the lesion is often well demarcated and can exhibit a tan white, red and white or red appearance depending on the amount of the surface keratinization. With the progression, it appears as exophytic and fungating. It invades in the soft tissue as well as in the hard tissue. VC can extensively infiltrate and destroy adjacent tissue, including muscle, cartilage and bone.³ Bone involvement in this manner has been reported to range between 1.2% and 5.9%.⁴ True nodal metastasis, however, from long-standing VC, has been reported, and selective neck dissections in cases with clinically suspicious

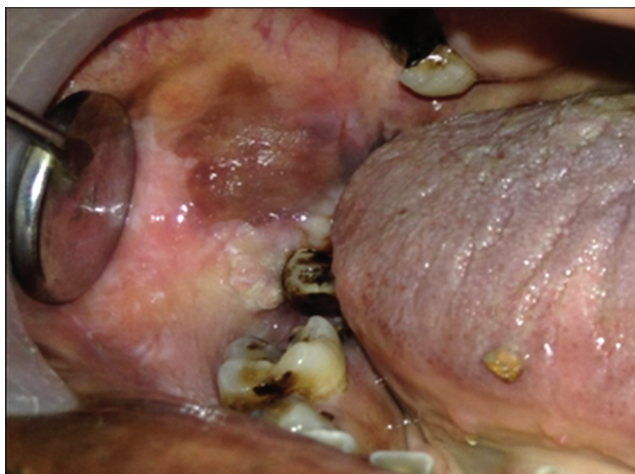


Figure 1: Pre-operative lesion

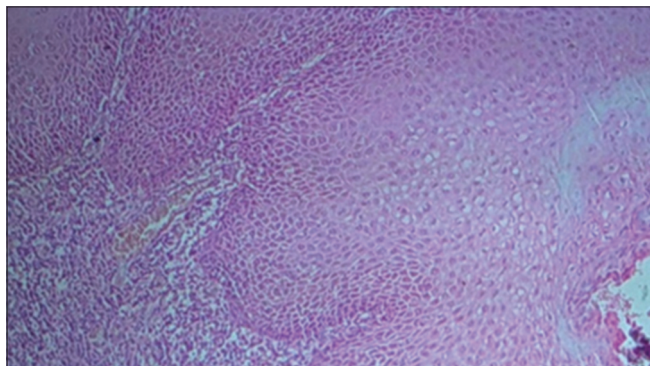


Figure 2: ×10 view, H and E stain showing a dyskeratotic stratified squamous epithelium with deep parakeratotic plugging



Figure 3: Lymph node Level I, II, III resected



Figure 4: Surgical excision of the lesion



Figure 5: Split thickness skin graft quilted to the wound bed

examinations, or for advanced stage lesions, has been recommended.^{1,8}

Histologically, VC is broadly based and invasive, with plum papillary invaginations of thickened and infolding epithelium with parakeratotic plugging. The tumor cells appeared pleomorphism with minimal cellular atypia and characteristic pushing margins. The inflammatory cells are typically plasma cells and lymphocytes.^{5,9}

Differential diagnosis includes verrucous hyperplasia, well differentiated SCC, papillary SCC and squamous papilloma.²

Various treatment modalities have been tried for the VC, which includes surgery, radiation therapy, chemotherapy, radiation therapy, cryotherapy, laser therapy, photodynamic therapy and treatment with recombinant α – interferon.^{3,5} Hatsumi *et al.* (2012), reported transition of VC to SCC in 20% of cases.⁶ Dhaman *et al.* (1993), reported 61% cases of VC was having lymph node metastasis.¹⁰ Transformation of VC to anaplastic or poorly differentiated SCC has been reported (6.7%) even after chemotherapy, cryosurgery, laser surgery and after multiple conventional operations.⁵ A review of NCDB reported that localized cases of oral VC demonstrated 85% and 42% survival rates after surgery and radiation, respectively.^{3,5} The need for neck dissection is an important consideration in planning therapy for VC. The aggressive clinical presentation of the tumor often favors in performing lymph node dissection. Tippu *et al.* (2012) reported the recurrence rate of VC was 26-57%.⁵ Walvekar *et al.* (2008) reported the recurrence rate of VC in 101 cases was 28%. The incidence of second primary cancer (6.9%) observed was lower than figures reported in other studies (10%).¹ 1-1.5 cm is considered to be safe margin for the resection of VC.¹⁰ Perioperative frozen sections are valuable in assessing the status of the resection margins. The accuracy has been demonstrated to be between 96%

and 98%, specifically when frozen section findings are confirmed on final histologic examination. The reliability of bone marrow frozen section has been shown to be up to 97% accurate.⁷

Dhawan *et al.* (1993) proposed that if Level I and II lymph nodes are palpable and have histologically confirmed the metastasis potential then radical neck dissection has to be performed.¹⁰

Ackerman (1948) recommended that in cases where there were extensive lesions with involvement of bone, upper neck dissection has to be performed.⁸

In the present case, there was only soft tissue involvement. Surgical excision of the lesion was done with 1 cm margin. Level I and II lymph nodes were palpable. Both were solitary, sub-centimeter, non-tender, firm in consistency and mobile. Therefore, the decision to be supraomohyoid neck dissection was taken. Since the excision did not involve the full thickness of cheek, reconstruction was done with split thickness skin graft taken from right thigh, which was quilted to the wound bed. One year follow-up shows no signs of recurrence.

CONCLUSION

Verrucous carcinoma is slow growing lesion and having a metastatic potential. Hence in order to prevent the recurrence of the disease neck dissection has to be performed in patients with clinical lymphadenopathy.

REFERENCES

1. 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 Oncol* 2009;45:47-51.
2. Sekar B, Augustine D, Murali S. Verrucous carcinoma with extensive cervical metastasis: An unusual presentation. *Int J Dent Case Rep* 2011;1:38-42.
3. Addante RR, McKenna SJ. Verrucous carcinoma. *Oral Maxillofac Surg Clin North Am* 2006;18:513-9.
4. Imaue S, Tomihara K, Takei R, Arai N, Noguchi M. Verrucous carcinoma of the maxilla possibly originating from a previous cyst: A case report. *J Oral Maxillofac Surg* 2013;25:65-8.
5. Tippu SR, Rahman F, Pilania D. Verrucous carcinoma: A review of the literature with emphasis on treatment options. *Indian J Stomatol* 2012;3:22-6.
6. Yano Kato H, Ishibashi H, Nariai Y, Hideshima K, Vieth M, Sekine J. Maxillary verrucous carcinoma coincident with cervical lymph node metastasis of colon adenocarcinoma. *Int Surg* 2012;97:270-4.
7. Kolokythas A, Rogers TM, Miloro M. Hybrid verrucous squamous carcinoma of the oral cavity: treatment considerations based on a critical review of the literature. *J Oral Maxillofac Surg* 2010;68:2320-4.
8. Ackerman LV. Verrucous carcinoma of the oral cavity. *Surgery* 1948;23:670-8.

9. Strojan P, Smid L, Cizmarevic B, Zagar T, Auersperg M. Verrucous carcinoma of the larynx: determining the best treatment option. *Eur J Surg Oncol* 2006;32:984-8.
10. Dhawan IK, Verma K, Khazanchi RK, Madan NC, Shukla NK, Saxena R. Carcinoma of buccal mucosa: incidence of regional lymph node involvement. *Indian J Cancer* 1993;30:176-80.

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