



Papillary–verrucous lesion of the oral mucosa: A need for detailed histopathological examination

Sachidanand Mallya P¹, Syed Mohammed Miqdad², Shruti Nayak³, Maji Jose⁴

Abstract:

Verrucous carcinoma is a rare type of low grade, histopathological variant of well differentiated squamous cell carcinoma. It has a gradual growth potential. The tumor has high tendency for local destruction of the tissue but seldom metastasizes. A long standing verrucous carcinoma can be transformed to frank conventional invasive squamous cell carcinoma. Here, we report a case of a 56-year old male patient who reported to our hospital with complaint of a growth in the right cheek region since 4 weeks. The case was diagnosed on clinical grounds as verrucous carcinoma, which in incisional biopsy exhibited focal areas of dysplastic epithelial changes, warranting the possibility of frank invasion in the other areas of the lesion which was confirmed in excised biopsy specimen. This points to the need of a detailed histopathological examination, while evaluating verruco-papillary lesions of oral mucosa.

Key words: growth, carcinoma, squamous cell, verrucous, papillary

Introduction:

Verrucous carcinoma (VC) is an uncommon but distinct variety of well differentiated squamous cell carcinoma first delineated by Ackerman in 1948. It develops mainly in skin, genitalia, esophagus and the oral cavity. The pathogenesis of verrucous carcinoma of oral cavity is still obscure but is thought to be associated with human papilloma virus (HPV), poor oral hygiene, chewing of tobacco and use of snuff. A long standing verrucous carcinoma can lead to squamous cell carcinoma.¹

Verrucous carcinoma has a predilection for the oral cavity; buccal mucosa and lower gingiva being the most commonly occurring sites in the oral cavity.² It has slight increased frequency to occur in elderly males who have a history of smoking.¹

Regional lymph node metastases are

exceedingly rare. Since the growth pattern seems to be both exophytic and endophytic, biopsy with adequate depth must be needed to make accurate diagnosis. Verrucous papillary lesions (VPLs) of the oral cavity are diagnostically challenging as they include a spectrum of benign, potentially malignant, and frankly malignant lesions. A majority of the benign VPLs have a viral aetiology.³

Histologically, oral verrucous hyperplasia resembles oral verrucous carcinoma and may be indistinguishable from one another. The most important pathological difference with squamous cell carcinoma is the good cytological differentiation throughout the tumor. VC can also be mistaken as a benign lesion histologically. A close discussion between the clinicians and pathologists is necessary for an accurate diagnosis.⁴

Case Report:

A 56-year old male patient visited the Department of Oral Medicine and Radiology, Yenepoya Dental College, Mangalore, with complaints of a growth in the right cheek region since 4 weeks. Patient gave a history of tobacco use (smoking 1 packet/day) for past 10 years and occasional consumption of alcohol. Patient also gave history of keeping crushed tobacco in the buccal vestibule to relieve tooth ache. Patient had a positive medical history of hypertension and was on medication.

Extra-oral examination revealed slight facial asymmetry in relation to right lower half of the face. Intra-oral examination showed a verrucous growth in bucco-gingival sulcus of mandibular right quadrant extending from canine to 1st molar region, measuring 2x3 cm in size (**Figure I**). Orthopantomograph was taken and it didn't show any significant findings (**Figure II**).

Incisional biopsy was taken and was subjected to histopathological examination. Microscopically, sections showed features suggestive of verrucous carcinoma in most of the tissue examined, like hyperplastic epithelium with broad bulbous rete ridges and bland cytology (**Figure III**). However, in the focal areas the epithelium was showing dysplastic features like irregular stratification, nuclear hyperchromatism, altered nuclear-cytoplasmic ratio, nuclear and cellular pleomorphism. So accordingly, a histopathological diagnosis of verrucous carcinoma was given with the note to the surgeon regarding the possibility of frank invasive areas in other areas of the lesion. As a result, the surgeon decided upon the treatment plan with wide surgical excision (**Figure IV**) and the final diagnosis of squamous cell carcinoma was made based on findings (**Figure V**).

Discussion:

Verrucous carcinomas are slow-growing,

Figure I: A verrucous growth seen in relation to the bucco-gingival sulcus extending from mandibular right canine to 1st molar region



Figure II: Orthopantomograph shows no significant changes



exophytic, well-demarcated hyperkeratotic lesions. The typical presentation of the lesion is extensive, white, warty and irregular.⁵ It accounts for 5% of all intra-oral squamous cell carcinomas. It is generally seen in elderly patients; the mean age of occurrence being 60-70 years, with nearly 75% of the lesions developing in males.⁶

Figure III: (H and E X 10) Microscopic section showing a hyperplastic dysplastic with minimal connective tissue component

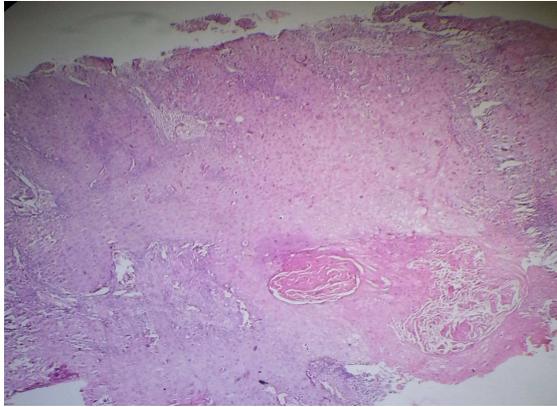
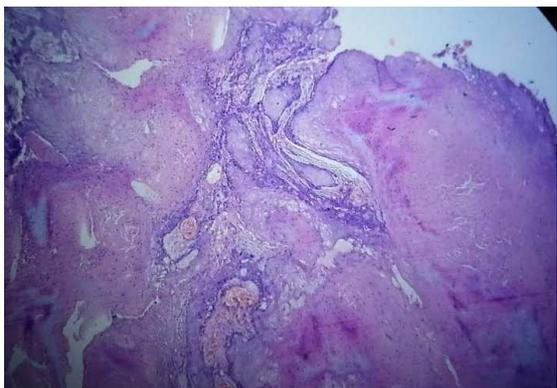


Figure IV: Gross appearance of excisional biopsy specimen showing verrucous lesion and resected part of mandible and involved teeth



Figure V: (H and E, 40x) Dysplastic epithelium with additional features such as individual cell keratinisation and multiple intraepithelial keratin pearl formation



The macroscopic appearance of this tumor depends on several factors like duration of lesion, degree of keratinization and the changes in adjacent mucosa. The surface is usually heavily keratinised. The presence of keratin on an irregular, moist, mucosal surface gives the lesion its white, warty clinical appearance. On the cut surface, it is firm or hard, tan to white, and may show keratin-filled surface clefts. The development of verrucous carcinoma from proliferative lesions makes it likely that the tumor develops from a benign precursor.⁶

The term “verrucous” was applied for lesions showing surface irregularities and histopathologically, it shows keratotic exophytic surface composed of sharp or blunt epithelial projections with keratin-filled invaginations (plugging), but without obvious fibrovascular cores.⁷

Verrucous hyperplasia is another entity which resembles verrucous carcinoma and both are indistinguishable clinically. Verrucous hyperplasia probably represents a morphological variant of verrucous carcinoma as suggested by Slootweg and Muller, 1983.⁸ An essential feature in distinguishing verrucous hyperplasia from verrucous carcinoma is the location of the thickened epithelium with respect to adjacent normal appearing epithelium. In verrucous carcinoma, there exhibits a downward growth pattern of rete ridges on contrary to verrucous hyperplasia in which most of the broadened rete ridges lay above the adjacent normal epithelium. Differential diagnosis can be made histologically, but a biopsy specimen should be sufficient for correct diagnosis. Verrucous hyperplasia generally does not extend into deeper tissues but is superficial to normal epithelium, whereas verrucous carcinoma extends more deeply. In the present case, the clinical diagnosis was verrucous lesion; incisional biopsy findings did not show clearly the infiltrative areas as carcinoma, whereas

final diagnosis was definitive squamous cell carcinoma.⁹

In another study, Lumerman H et al had studied the clinical features and microscopic slides of 308 cases of oral epithelial dysplasia and retrospectively evaluated 44 of these cases with follow-up of more than 6 months for transformation to invasive squamous cell carcinoma. Out of 44, clinically free of disease cases were 20 (45%) and recurrence of the dysplasia was seen in 15 cases (34%). Seven cases (16%) developed invasive squamous cell carcinoma in 33.6 months (mean transformation time).¹⁰

This led to its inclusion that the SCC should be diagnosed early for a better prognosis. According to Heller, Klein and Barocas, the chance for cure is favourable when the size of the lesion is less than 1 cm.¹¹

There are different treatment modalities for verrucous carcinoma which includes surgery, radiotherapy, chemotherapy, cryotherapy, laser therapy, photodynamic therapy and using recombinant interferon. The preferred treatment of choice for this entity will be the surgical resection.⁶ If surgery is not indicated, other treatment modalities such as cytostatic drugs may be preferred; α -interferon (IFN) was believed to support the therapy by delaying the growth of the tumor but does not take the place of surgery alone.⁹ The prognosis of VC is excellent and recurrence rate is less because of its slow growth and lack of metastasis. According to Alper et al, local recurrence rate is 57%. Hence, long term follow-ups are mandatorily required.¹²

Conclusion:

Histological evaluation remains a problem as benign microscopic appearance is controversial to tumor's destructive clinical behavior till date. Verrucous carcinoma is characterized by a high frequency of initial misdiagnosis. This emphasizes the need for close cooperation between the pathologist and the clinician

in order to establish the diagnosis of verrucous carcinoma. An adequate, full thickness biopsy specimen must be taken when a clinician suspects a verrucous carcinoma; moreover, multiple biopsies may be needed to rule out an invasive squamous cell component in a verrucous carcinoma.

So to conclude, this case report suggests that the incisional biopsy is highly recommended in any lesion that presents as a verrucous growth clinically, to confirm and rule out the possibility of frank invasive squamous cell carcinoma. It will help the clinician to come to a proper diagnosis so that the surgeons can ensure adequate treatment planning and for betterment of the patient. The most reliable way to separate these entities on routine haematoxylin-eosin stained tissue sections is to recognize the exophytic growth pattern of oral verrucous hyperplasia from the combined exophytic and endophytic growth pattern associated with a verrucous carcinoma.

References:

1. Ackerman LV. Verrucous carcinoma of oral cavity. *Surgery* 1948; 23(4): 670-78.
2. Imai H, Yoshihara T. Verrucous Carcinoma of the Tongue; Report of a Case. *Otolaryngol Head neck Surg* 1995; 67(1):1165-69.
3. Kallarakkal TG, Ramanathan A, Zain RB. Verrucous Papillary Lesions: Dilemmas in Diagnosis and Terminology. *International Journal of Dentistry* 2013; 2013:1; <http://dx.doi.org/10.1155/2013/298249>
4. Kawakami M, Yoshimura K, Hayashi I, Ito K, Hyo S. Verrucous Carcinoma of the Tongue: Report of two cases. *Bulletin of the Osaka Medical College* 2004; 50(1, 2):19-22.
5. Alkan A, Bulut E, Gunhan O, Ozden B. Oral verrucous Carcinoma: A Study of 12 Cases. *Eur J Dent* 2010; 4(1): 202-07.

6. Kaushal N, Madan N. Verrucous Carcinoma of the Oral Cavity: Case Report. *The Internet Journal of Geriatrics and Gerontology* 2009; 6:1.
7. Santoro A, Pannone G, Contaldo M, Sanguedolce F, Esposito V, Serpico IR, et al. A Troubling Diagnosis of Verrucous Squamous Cell Carcinoma (“the Bad Kind” of Keratosis) and the Need of Clinical and Pathological Correlations: A Review of the Literature with a Case Report. *J Skin Cancer* 2011; 2011: 370605; <http://dx.doi.org/10.1155/2011/370605>
8. Sloopweg PJ, Müller H. Verrucous hyperplasia or verrucous carcinoma: An analysis of 27 patients. *J Maxillofac Surg* 1983; 11(1):13-9.
9. Agnihotri A, Agnihotri D. Verrucous carcinoma: A study of 10 cases. *Indian J Oral Sci* 2012; 3: 79-83; <http://dx.doi.org/10.4103/0976-6944.106459>
10. Lumerman H, Freedman P, Kerpel S. Oral epithelial dysplasia and the development of invasive squamous cell carcinoma. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1995; 79(3): 321-29.
11. Heller AN, Klein A, Barocas A. Squamous cell carcinoma of the gingiva presenting as an endoperiodontic lesion. *J Periodontol* 1991; 62(9): 573-75.
12. Alkan A, Bulut E, Gunhan O, Ozden B. Oral verrucous carcinoma: a study of 12 cases. *Eur J Dent* 2010; 4(2): 202-7.

Conflict of interests- Nil

Source of funding- Nil

Date of submission: 09-09-2015

Date of acceptance: 09-11-2015

Authors details:

- 1- **Corresponding author:** Post-graduate, Department of Oral Pathology and Microbiology, Yenepoya Dental College, Deralakatte, Mangalore- 575018, India; **E-mail:** mallyapsachin@gmail.com
- 2- Post-graduate, Department of Oral Pathology and Microbiology, Yenepoya Dental College, Deralakatte, Mangalore- 575018
- 3- Reader, Department of Oral Pathology and Microbiology, Yenepoya Dental College, Deralakatte, Mangalore- 575018
- 4- Professor and Head, Department of Oral Pathology and Microbiology, Yenepoya Dental College, Deralakatte, Mangalore- 575018