CASE REPORT

Verrucous Carcinoma of Buccal Mucosa in a 29 year old Female Patient


Abstract

Verrucous carcinoma (Ackerman’s tumor) is a low grade variant of oral squamous cell carcinoma (OSCC). Lauren V Ackerman first used the term “verrucous carcinoma” (VC) to describe an unusual and indolent variant of OSCC. The commonest sites of involvement in the head and neck regions have been oral cavity and larynx where it represents 2-9% and 2% respectively. In India, approximately 7% of oral cancers are VC. In general, VCs are locally aggressive, but have a low propensity for regional as well as distant metastasis. VC has unique histopathological features. An accurate pathological diagnosis is challenging and is facilitated by an adequate tumor sample for study and more importantly, a close collaboration between the clinician and the pathologist. Here, we present a case report of VC of the buccal mucosa in a 29 year old female patient.

Keywords: Verrucous carcinoma, Oral squamous cell carcinoma, buccal mucosa

Case Report

A 29 year old female patient reported to the out-patient department of Sardar Patel Post Graduate Institute of Dental & Medical Sciences, Lucknow with the chief complaint of a growth and pain in the right buccal mucosa for the past 8 months. Patient gave a history of the growth that was small in size initially and gradually increased in size with continuous pain and difficulty in mastication. Patient also gave a history of chronic tobacco usage in the form of betel quid and betel nut for past 10 years.

*Senior Lecturer, *** PG Student, Department of Oral Pathology & Microbiology Sardar Patel Post Graduate Institute of Dental & Medical Sciences, Lucknow
**Senior Lecturer, Department of Oral Pathology & Microbiology Kothiwal Dental College Research Center, Moradabad

Address for Correspondence:
Dr Fahad M. Samadi, 1/40 Vipul Khand, Gomti Nagar, Lucknow – 226 010
drfahadsamadi@yahoo.co.in

Fig. 1: Intraoral photograph showing a proliferative growth on the right buccal Mucosa
On intraoral examination, an exophytic growth was seen on the right buccal mucosa extending from the second premolar to the third molar region involving the vestibular area measuring approximately 6 cm by 5 cm in size. The growth had diffused margins and had rugae like folds with deep clefts between. The surface of the lesion was white to reddish pink in color and it was associated with pain on palpation. The oral hygiene status of the patient was found to be very poor. An excisional biopsy was performed and the gross specimen was analysed histologically.

**Fig. 2:** Photomicrograph showing broad pushing rete ridges with parakeratin plugging in between the clefts

On histopathological examination, the H and E section shows epithelial proliferation with downgrowth of epithelium into connective tissue. The epithelial cell shows little mitotic activity, pleomorphism or hyperchromatism. Cleftlike spaces with thick layer of parakeratin extend from the surface deeply into the lesion. The connective tissue stroma showed chronic inflammatory infiltrate. The histological features were suggestive of “Verrucous Carcinoma”.

**Discussion**

The expression VC was defined by LV Ackerman in 1948 to characterize a well-differentiated verrucous neoplasia, with slow growth and without a tendency to metastasize. VC is a SCC with a low degree of dysplasia and low incidence. Its biological aggressiveness is limited to the localization. As it is a tumor that has a predominant horizontal growth, it tends to erode more than infiltrate. It has a good prognosis, which rarely causes regional metastases. It does not present with remote metastasis. There are 4 clinicopathologic types. For this reason it has been known by several different names, usually related to anatomic sites:

1. anogenital: giant condyloma acuminatum, Buschke-Loewenstein tumor, giant malignant condyloma, verrucous carcinoma of the anogenital mucosa, carcinoma-like condyloma, and condylomatoid precancerosis
2. oroaerodigestive: Ackerman tumor, verrucous carcinoma of Ackerman, oral florid papillomatosis
3. feet: epithelioma cuniculatum, carcinoma cuniculatum
4. other cutaneous sites: cutaneous verrucous carcinoma, papillomatosis cutis carcinoides, papillomatosis cutis.

In the oral cavity, VC constitutes 2 to 4.5% of all forms of squamous cell carcinoma seen mainly in males above 50 years of age and also associated with high incidence (37.7%) of second primary tumour, mainly in oral mucosa. Indudharan R et al. (1996) has reported a case of verrucous carcinoma of the maxillary antrum in a young male patient which was also a rare entity. VC is thought to be affecting the elderly males mostly as for example in a study conducted by Walvekar RR et al. (2009), the ratio of male to female patients suffering from VC was found to be 3.6:1 with a mean age of 53.9 years. According to Varshney S et al. (2004), the age may range from the fourth to eight decades, with a mean age of 60 years wherein four out of five patients were male. The present case was found to be in contrast to the reported literatures as VC of buccal mucosa was diagnosed in a young female patient of 29 years, who had a chronic history of tobacco chewing habit for past 10 years.

The etiopathogenesis of VC is related to the following carcinogens: biologic (HPV), chemical (smoking) and physical (constant trauma). As for oral VC, smoking, a habit of chewing betel and snuff and human papilloma virus infection (HPV),
stand out as the main carcinogenic factors. Typical lesion is a pale, warty, fungating, locally aggressive, ulcerated tumor attached by a broad base, is well circumscribed and it is clearly demarcated from the adjacent mucosa. VC has excellent prognosis because of its slow growth and gravity with which it metastasizes to regional lymph nodes. Later in the course, the contiguous structure may be involved with time and adjacent tissues including bone and cartilage may be invaded and destroyed. Microscopically, VCs are usually broad based and locally invasive with papillary projections consisting of highly differentiated squamous cell lacking usual criteria of overt malignancy. Rarely mitosis is seen. Surface is usually covered by keratin layers. The invasive margin is invariably a slow ‘pushing’ one along with inflammatory reaction in the stroma. Because of deceptive benign appearance of neoplastic cells, an accurate pathological diagnosis requires a sufficient biopsy specimen that contains infiltrative features of verrucous carcinoma.

Verrucent hyperplasia and verrucous carcinoma are indistinguishable clinically. The clinical association with leukoplakia is significant and the evidence indicates that untreated leukoplakia may develop into a verrucous hyperplasia and/or a verrucous carcinoma in time. Verrucous hyperplasia is a forerunner of verrucous carcinoma and transition is so consistent that the hyperplasia, once diagnosed, should be treated as verrucous carcinoma. Verrucous hyperplasia generally does not extend into deeper tissues but is superficial to normal epithelium, whereas verrucous carcinoma extends more deeply.

Some of the clinico pathologic characteristics as suggested by Ferlito A and Recher G in 1980 is given in Table 1.

Ferlito et al. (1980) emphasized on the following classic description for the diagnosis of Verrucous carcinoma:

a. Fungating warty tumor
b. Thickened club shaped, papillomatous projections which push rather than infiltrate into the underlying tissue.

c. Deeply projecting cleft like spaces with degenerating keratin and later cystic degeneration of central portion of the filiform projections.
d. High degree of cellular differentiation with absence of features of malignancy.
e. Considerable inflammatory response in invaded tissues.
f. Rare regional lymph node and distant metastasis.

Table 1:- Clinicopathologic Characteristics Of Verrucous Carcinoma

<table>
<thead>
<tr>
<th>No.</th>
<th>Sites of predilection</th>
<th>Grade of malignancy</th>
<th>Metastatic</th>
<th>Gross appearance</th>
<th>Associated mucosal changes</th>
<th>Differentiation of cells</th>
<th>Cytologic features of malignancy</th>
<th>Depth of lesion</th>
<th>Cellular response</th>
<th>Hybrid malignancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oral cavity, Larynx</td>
<td>Low grade</td>
<td>Absent</td>
<td>Exophytic, fungating, usually keratinizing</td>
<td>Leukoplakia, metachronous or synchronous squamous cell neoplasm</td>
<td>High grade, uniform</td>
<td>Rare to absent</td>
<td>Pushing to blunt invasion</td>
<td>Usually predominant</td>
<td>20% of cases approximately</td>
</tr>
</tbody>
</table>

In the clinical differential diagnosis, the following were observed: SSC, viral verruca, amelanotic melanoma, histoplasmosis, secondary syphilis, Darrier’s disease, white spongy nevus and erythematous lupus. The main histopathological differential diagnosis of VC is from leukoplakia, papilloma, pseudoepitheliomatous hyperplasia, verrucous hyperplasia and highly differentiated squamous cell carcinoma.

The management of oral VC must include general measures such as adequate oral hygiene, re-adaptation of eventual dental prostheses and regular patient re-evaluation. VC may be considered a multifocal and recurrent disease, whether by genetic predisposition or by the duration of inductor factors. Accordingly, even as one focus is cured, the affection might recur at localization. Mohs’ microsurgery is the treatment of choice for VC, with a 98% cure rate.
association with HPV, therapy with Imiquimod and Cidofovir is raised as a possibility. There is a considerable controversy in the literature regarding ‘anaplastic transformation of VC following irradiation therapy in 10-20% cases. Following irradiation a small proportion of VC are reported to have changed their biological behaviour from indolent low grade locally destructive lesion to a highly malignant, metastasizing and fatal tumor with extremely short latent period of transformation. VC carry a high risk of recurrence upto 40%. The extension to bone is frequent but nodal metastases are exceptional. Ferlito and Retcher (1980), conducted a study and found 90 patients who were treated with radiation, of those treated, 71 percent had lesions that persisted or returned. In contrast, of 103 treated surgically, seven (6.8 percent) returned. Fortunately, most verrucous cancers can be diagnosed early enough for a conservation operation. The follow up of verrucous carcinoma is particularly deceptive, and critical radiologic imaging should be employed as indicated. The prognosis of verrucous squamous cell carcinoma is excellent.

REFERENCES