CASE REPORT

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Proliferative verrucous leukoplakia: A case report with Literature Review

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ABSTRACT

Proliferative verrucous leukoplakia (PVL) is a rare and specific disease that differs from oral leukoplakia, which is neither a delimited lesion nor a condition. It is characterized by the appearance in the oral cavity of white plaques in multiple locations and with different forms of presentation (homogeneous, patchy, verrucous) that progress towards oral squamous cell carcinoma in over 70% of all cases. Eventually, PVL tends to become multifocal with a progressive deterioration of the lesions, making it more and more difficult to control. Tobacco use does not seem to have a significant influence on the appearance or progression of PVL. The etiology of the process remains unclear. Here we report a case of proliferative verrucous leukoplakia on left lateral border of tongue in a 35 year old male patient.

Key words: proliferative verrucous leukoplakia, homogeneous, multifocal, progression

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Introduction

Proliferative verrucous leukoplakia (PVL) is a recently delineated entity that is defined as a diffuse, white and smooth/papillary or wartlike area of the oral mucosa caused by varying degrees of epithelial hyperplasia.[1] Proliferative verrucous leukoplakia (PVL) is a rare oral leukoplakia, principally characterized by chronic proliferation, multiple occurrences, and refractoriness to treatment.[2] Proliferative verrucous leukoplakia (PVL) was first described in 1985 by Hansen et al.[3] PVL presents multifocal or diffuse extension, tendency to recur after treatment and high risk of malignant transformation.[4]

PVL is more commonly found in elderly females and is associated with tobacco use or alcohol abuse one-third to one-half of the time.[1] PVL is of uncertain etiology but may be associated with human papillomavirus (HPV) infection. They suggest that HPV-16 infection may play an important role in theses lesions.[5] PVL grows slowly and can take up to 7 to 8 years to become cancerous. The process is irreversible and usually progresses to cancer.[2] In late PVL, the keratoses can become exophytic and verrucous, with frequent transformation to verrucous or squamous cell carcinoma.[6] PVL grows slowly and can take up to 7.8 years to become cancerous.[2] Some research has proposed four stages of development to PVL, which starts as a simple hyperkeratosis without epithelial dysplasia, verrucous hyperplasia,verrucous carcinoma, and conventional carcinoma.[7]

Case Report

A 35 year old male patient reported to Department of Oral Medicine and Radiology, Institute of Dental Sciences, Bareilly (U.P) with a chief complaint of white patch on left lateral border of tongue since 2 months. History of present illness revealed that patient noted white patch on right and left buccal mucosa 2 months back which was rough & painless. His past medical, dental and family history were non contributory. Personal history revealed that patient had history of chewing tobacco 35 packets /day since 5 years and chewing 1 packet of khaini/ day since 1 year. General physical examination revealed that patient was moderately built and well nourished and all vital signs were within normal limits.

Extra oral examination revealed that the patient's face was bilaterally symmetrical. Intra oral examination revealed that patient was completely edentulous. Intra orally, a solitary proliferative growth was present measuring about 1.5x1.5cm on left lateral

border of tongue. Extending from distal of 36 to mesial of 37.Surrounding mucosa appears normal. On palpation all inspectory findings were confirmed. It was not tender non scrapable and is not associated with any discharge. (Fig.1)

Considering the history and clinical examination, provisional diagnosis of verrucous leukoplakia was made. Differential diagnosis of squamous papilloma was given. Excisional biopsy was done under local anaesthesia. Excised specimen section revealed parakeratinised stratified squamous epithelium & underlying connective tissue was seen. Increased layers of stratum spinosum & few areas of parakeratin plugging were seen. Chronic inflammatory cell infiltrate in connective tissue, some muscle fibres & areas of mucous salivary gland acini suggestive of verrucous leukoplakia (Fig.2). On considering patient's history,

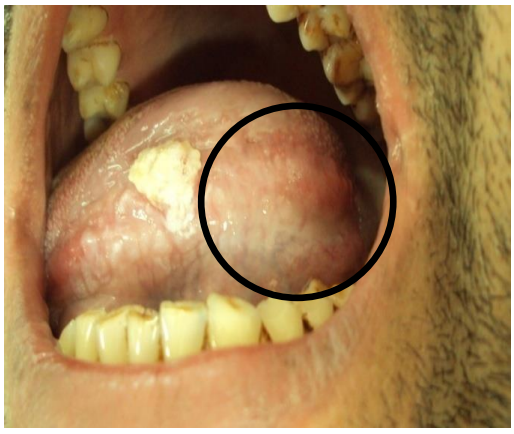

Fig. 1: showing lesion on lateral border of tongue

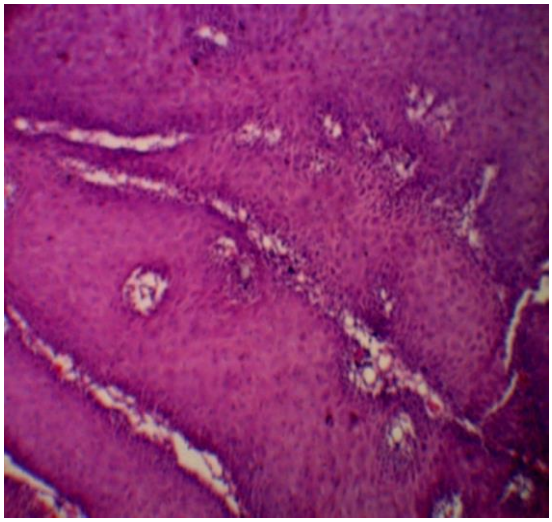

Fig. 2: Histopathological slide showing chronic inflammatory cell

clinical and histopathologic findings the final diagnosis of verrucous leukoplakia was given.

Discussion

The term proliferative verrucous leukoplakia (PVL) has been defined by Hansen et al. as a disease of unknown origin, that clinically often begins as a single white lesion and a long time tends to become multifocal, growing slowly and progressively.[7] White lesions are relatively frequent in the oral cavity with a prevalence of approximately 24.8%, according to Axéll.[8] The disease can remain without change for years; it is therefore understandable that the treatments used for the white lesions of PVL are the same as those applied to leukoplakias.[9] Cabay et al, 2007 defined PVL as a distinct clinical form of oral

leukoplakia which in turn is defined by its progressive clinical course, changing clinical and histopathologic features, and potential to develop into cancer.[10] The most common locations are the gingiva or alveolar ridge (often extending into the vestibule), tongue, and buccal mucosa-sites that traditionally have not been considered high risk areas for the development of oral squamous cell carcinoma, with the exception of the tongue. According to Haley et al. the gingiva is the most likely site for the malignant transformation of PVL.[1] PVL is a rare and specific disease that differs from OVL, and is often seen in middle-aged and elderly women, occurring predominantly on the buccal mucosa, palate, gingiva, and tongue.[2]

The aetiology of PVL is unclear, but human papilloma viruses (HPV), particularly HPV16, may play an important role, though some authors have found no such association.[3] PVL develops initially as a white plaque of hyperkeratosis that eventually becomes a multifocal disease with confluent, exophytic and proliferative features. Hansen et al.[8] classified the pathological process of PVL into 10 grades, i.e., normal oral mucosa (0), homogeneous leukoplakia (2), verrucous hyperplasia (4), verrucous carcinoma (6), papillary squamous cell carcinoma (8), and poorly differentiated carcinoma (10), in which the odd scores refer to a status intermediate between those referred to by the adjacent even scores. PVL is usually chronic and progressive, and a patient often has a long history of leukoplakia before he/she attends a clinic.[2]

Recently Bagan et al[3] also proposed a set of diagnostic criteria to allow for the early identification of PVL cases. The proposal includes five major criteria and four minor criteria as the following:[5]

Major criteria (MC):

1) A leukoplakia lesion with more than two different oral sites, which is more frequently found in the gingival and alveolar processes and palate.

2) The existence of a verrucous area

3) The lesions spread or become engrossed during development of the disease.

4) Recurrence in a previously treated area.

5) Histopathologically, there can be simple epithelial hyperkeratosis to verrucous hyperplasia, verrucous carcinoma or oral squamous cell carcinoma.

Minor criteria (mc):

1) An oral leukoplakia lesion that occupies at least 3 cm when adding all the affected areas.

2) The patient is female

3) The patient (male or female) is a nonsmoker

4) A disease evolution more than 5 years.

The lesions of PVL are persistent, progressive, and relentless and have a high recurrence rate regardless of the treatment method employed.[1] There is no reliably effective management reported.[10]

Conclusion

Proliferative verrucous leukoplakia is a rare but highly aggressive form of oral leukoplakia, which requires special awareness on the part of the clinician. Therefore, it is recommended to have the earliest possible diagnosis, as well as consensus on diagnostic criteria to achieve uniformity. The main topic on the disease is the high rate of malignant transformation, the lack of a success treatment, and the number of recurrences after management.

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