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Oral proliferative Verrucous leukoplakia: A case report

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Abstract

White lesion is most common pathological as well as physiological entity of the oral cavity out of which leukoplakia is the most common form of white patch that is found in the oral cavity. There are many types of leukoplakia, oral proliferative verrucous leukoplakia is one of them and it is a rare clinico-pathological entity, which is slow growing, long-term progressive lesion, but remains an enigmatic and difficult to define. It may or may not be associated with tobacco usage. It is observed more frequently in women and elderly patients over 60 years. The buccal mucosa and tongue are the most frequently involved sites. It develops initially as a white plaque of hyperkeratosis that eventually becomes a multifocal disease with confluent, exophytic and proliferative features. This article describes a case of verrucous leukoplakia which is present on the left side of buccal mucosa along with clinical aspect and histological features.

Key Words: Pathological, Verrucous leukoplakia, Leukoplakia, speckled leukoplakia, Multifocal.

Introduction

Public awareness of lesions that can potentially be a malignancy in oral cavity has been increasing. One lesion that can be found in the oral cavity is leukoplakia. Leukoplakia is derived from the word “leuko” which means white, and “plakia” which refers to the word plaques or patches. Thus, leukoplakia can be defined as a white plaque that cannot be scraped off. Its etiology, however, is still questionable after eliminating all risk factors that do not have a tendency toward malignancy.[1] Approximately, 3% of the worldwide population has suffered from leukoplakia, 5-25% of which are pre-malignant lesions. After verified through histopathological examination, all lesions of leukoplakia can be considered as a potentially malignant lesion[2] In a retrospective study, Hansen et al.,[3] reported that 26 of the 30 lesions initially diagnosed as OL became oral carcinomas in patients followed for 1-20 years (average, 6.1 years). After this study, these lesions were named oral proliferative verrucous leukoplakia (OPVL).(4) According to the latest World Health Organization nomenclature, OPVL conforms to the new terminology of “potentially malignant disorders” given that it is neither a delimited lesion nor a condition. [5] It is best-defined as a continuum of oral epithelial disease with hyperkeratosis at one end of a clinical and microscopic spectrum and verrucous carcinoma or squamous cell carcinoma at the other. [6] It is a long-term progressive condition, which develops initially as a white plaque of hyperkeratosis that eventually becomes a multifocal disease with confluent, exophytic and proliferative features and behaves in a more aggressive and relentless manner than the more innocuous white oral lesions that it can resemble clinically.[7]

Case Report

A 38 year old male patient reported to the outpatient department of Rama Dental College, Kanpur with a white patch on left side of buccal mucosa. The white patch was noticed 6 months ago and showed gradual enlargement causing discomfort and burning sensation. He had no habit of tobacco usage as well as no deleterious habits. Intraoral Examination of right buccal mucosa revealed firm, non tender, non scrapable, red and white patchs measuring 2 x 2 cm. Surface appears rough and elevated which is extending towards the retromolar region clinically resembled verrucous leukoplakia in appearance. Chair side investigation, toluidine blue staining was carried out to select the area of biopsy to be made. The selected area was then biopsied (incision).

Histopathological examination with H and E stained sections the presence of parakeratinized hyperplastic squamous epithelium the overlying connective tissue stroma. Dysplastic features such as broad rete ridges, acanthosis, hyperchromatism, and basilar hyperplasia, cellular and nuclear pleomorphism are evident. Few areas show extension of dysplastic features in more than 2/3rd thickness of epithelium

and budding of retype's and highly placed connective tissue papillae. Connective tissue stroma is highly cellular subepithelially with dense infiltration of chronic inflammatory cells, dilated and proliferated capillaries. Overall features are suggestive of hyperparakeratosis with severe epithelial dysplasia.

Figure 1: Showing Verrucous Leukoplakia in left side of buccal mucosa.

Figure 2: Grossing image showing tissue of incisional biopsy.

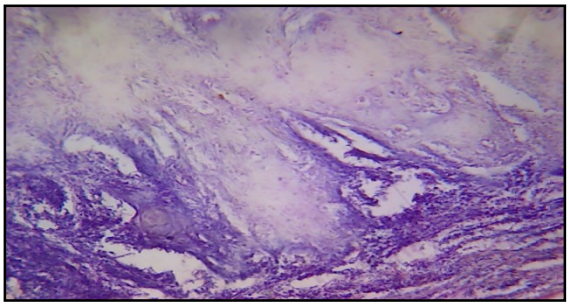

Figure 3: Histopathology showing finger like projections, hyperparakeratosis with severe dysplasia suggestive of Verrucous Leukoplakia [H & E X10].

Discussion

WHO defines leukoplakia as a whitish patch or plaque that cannot be characterized, clinically or pathologically, as any other disease and which is not associated with any other physical or chemical causative agent except the use of tobacco? [8]The literature, however, strongly indicates the role of alcohol, viruses and systemic conditions. The two main clinical types of leukoplakia are homogeneous and non homogeneous leukoplakia.[9]

Verrucous leukoplakia falls under the category of non-homogenous leukoplakia.

Etiological factors involved are alcohol use and smoking, diets lacking antioxidants (such as vitamins C, E, and beta-carotenes), occupational exposure to carcinogens, viral infections, and genetic and hereditary factors. Smoking of tobacco was found to be the strongest independent risk factor. Other forms of tobacco, hyperacidity, lipstick, and ill-fitting dentures were found to be a causative factor, which shows that socioeconomic status and lifestyle are involved in causing premalignant lesions. [10]

According to the latest World Health Organization nomenclature, OPVL conforms to the new terminology of "potentially malignant disorders" given that it is neither a delimited lesion nor a condition. It is best-defined as a continuum of oral epithelial disease with hyperkeratosis at one end of a clinical and microscopic spectrum and verrucous carcinoma or squamous cell carcinoma at the other.[11] It is a long-term progressive condition, which develops initially as a white plaque of hyperkeratosis that eventually becomes a multifocal disease with confluent, exophytic and proliferative features and behaves in a more aggressive and relentless manner than the more innocuous white oral lesions that it can resemble clinically.[12]

Two of the largest studies of OPVL patients reported a predilection for this lesion in elderly women, with a ratio as high as 4:1 for women to men unlike other forms of OL. The mean age at the time of diagnosis is slightly over 60 years. It has been shown that almost all lesions occur bilaterally, mainly affecting the lower alveolar ridge and buccal mucosa. Clinically, it generally presents as a simple benign form, which tends to spread and become diffuse. In time, OPVL develops exophytic, wart-like or erythroplakic areas that become oral carcinomas. [13]

The microscopic findings associated with OPVL are dependent on the stage of the disease and the adequacy of the biopsy. [11] Hansen et al. (3) suggested histological stages in the continuum of OPVL with intermediates.

Grade 0: Normal mucosa
Grade 2: Hyperkeratosis (clinical leukoplakia)
Grade 4: Verrucous hyperplasia
Grade 6: Verrucous carcinoma
Grade 8: Papillary squamous cell carcinoma
Grade 10: Less well-differentiated squamous cell carcinoma Batsakis et al., [14]. Reduced the number of histologic stages to four with intermediates:
Grade 0: Clinical flat leukoplakia without dysplasia
Grade 2: Verrucous hyperplasia
Grade 4: Verrucous carcinoma
Grade 6: Conventional squamous cell carcinoma with intermediates

It is of interest that the early phase of these lesions usually exhibits an interface lymphocytic infiltrate that may have a pronounced lichenoid pattern characterized by basal vacuolar degeneration containing apoptotic cells and eosinophilic bodies, similar to types of oral lichenoid stomatitis such as lichen plan us. [15] Therefore, OPVL has no single defining histopathologic feature.

Ghazali et al., (16) established the following criteria:

1. The lesion starts as homogenous leukoplakia without evidence of dysplasia at the first visit
2. With time, some areas of leukoplakia become verrucous
3. The disease progresses to the development of multiple isolated or confluent lesions at the same or a different site
4. With time, the disease progresses through the different histopathological stages reported by Hansen et al.
5. The appearance of new lesions after treatment A follow-up period of no less than 1 year.
6. Gandolfo et al [17] establish the following criteria:
7. An initially innocuous lesion characterized by a homogenous plaque that progresses over time to an exophytic, diffuse, usually multifocal, lesion with a verrucous epithelial growth pattern
8. Histopathologically, proliferative verrucous leukoplakia (PVL) changes gradually from a simple plaque of hyperkeratosis without dysplasia to verrucous hyperplasia, verrucous carcinoma or oral squamous cell carcinoma (OSCC).

B. Cerero-Lapiedra et al., (18) established the following major and minor criteria:

Major criteria

A. leukoplakia lesion with more than two different oral sites, which is most frequently found in the gingiva, alveolar processes and palate
B. The existence of a verrucous area
C. That the lesions have spread or engrossed during development of the disease
D. That there has been a recurrence in a previously treated area
E. Histopathologically, there can be from simple epithelial hyperkeratosis to verrucous hyperplasia, verrucous carcinoma or OSCC, whether in situ or infiltrating.

Minor criteria

A. An OL lesion that occupies at least 3 cm when adding all the affected areas
B. That the patient be female
C. That patient (male or female) be a non-smoker
D. A disease evolution higher than 5 years.
E. In order to make the diagnosis of PVL, it was suggested that one of the two following combinations of the criteria mentioned before were met.
F. Three major criteria (being E among them) or
G. Two major criteria (being E among them) + two minor criteria.
H. Nevertheless, at present, there is no criterion that will allow for the early diagnosis of the disease.(17)

Management

The lesion was completely excised and sent for histopathological evaluation and confirm the clinical findings. The lesion was surgically removed and the region was sutured. The follow up was not done because patient was not report back.

Conclusion

Verrucous leukoplakia is a potentially malignant disorder which is frequently converted into carcinoma if not treated well, the homogenous type can be converted into verrucous form in some area of the affected part, hence the site of biopsy and histopathological investigation is very important in treatment plan.

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