CASE REPORT

Verruciform xanthoma of oral cavity: A rare case report

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Abstract
Verruciform xanthoma (VX) is a rare lesion present in the oral cavity, skin, or genital organs. It is a harmless lesion having verrucous, papillary, or flat papule mucosal surface. It is generally present in middle-aged patients having no gender predilection. The histopathology of VX reveals papillary surface changes with marked hyper-parakeratosis and keratin clefts. The rete ridges proliferate below the surface of the overlying epithelium and are thin with uniform hyperplasia. The papillary submucosa reveals foamy macrophages/xanthoma cells. Here, we present a case of oral VX on the buccal vestibule.

Keywords: Foamy macrophage, oral cavity, verruciform xanthoma

Introduction
Verruciform xanthoma (VX) is a rare benign lesion which was first reported and described by Shafer in 1971.1-2 It is a rare lesion that usually occurs in the oral cavity,1-3 but skin and genital lesion of VX have also been reported.1,2,4 According to a study published by Tamiolakis et al., 2018, the total number of reported case of VX were 429.2 The etiology of the VX is unknown.3,5 It is an uncommon lesion accounting for 0.025–0.05%5 of all pathology cases with wide age of occurrence from 2 to 89 year5 and there is no gender predilection.3,5 Histopathologically, VX reveals papillary surface epithelium with thick parakeratin layer, along with keratin filled clefts between epithelial projections. The characteristic feature of VX is present within the connective tissue papillae, which contain large macrophages with foamy cytoplasm known as xanthoma cells.4,6

Here, we report a case of VX of the left buccal vestibule.

Case Report
A 45-year-old male presented with a chief complaint of the wound on the lower left buccal vestibular area since 2 years. The patient had a 20-years history of tobacco and alcohol consumption. The patient’s medical, dental, and family histories were unremarkable.

Intraoral examination revealed a single, rough, papillomatous, or “fish egg region,” non-scrapable white lesion with irregular margin on the left buccal mucosa in relation to 34, 35. It was measured approximate 1 × 1 cm with no other associated lesion [Figure 1a]. No cervical lymph nodes were palpable. Based on habit and site, a provisional diagnosis of oral leukoplakia was made and a punch biopsy was planned.

The incised tissue was fixed in 10% neutral buffered formalin. Gross examination revealed creamish white colour soft-tissue specimen measuring approximately 0.5 × 0.3 cm in greatest dimension, firm in consistency [Figure 1b]. The specimen was sent for routine histopathological processing and embedded in paraffin.

On histopathological examination, hematoxylin and eosin-stained sections revealed papillary surface changes with marked hyper-parakeratosis and keratin clefts. The rete ridges proliferate below the surface of overlying epithelium and are thin with uniform hyperplasia. The papillary submucosa reveals foamy macrophages/xanthoma cells. The underlying connective tissue is fibrocellular with inflammatory cells infiltrate predominantly lymphocytes and plasma cells [Figure 2a-c]. Based on histopathological finding and correlating clinically, the diagnosis of VX was confirmed. The treatment was planned and the whole lesion was excised in one piece. Post-operative follow-up of 12 months showed no sign of recurrence.

Discussion
VX is a rare lesion of the oral cavity that usually involve the buccal mucosa, gingiva, alveolar ridge, and rarely the lip.5 The pathogenesis of the VX is unknown.2 In 22% skin xanthoma, a
missense mutation of 3β-hydroxysteroid dehydrogenase gene has been reported. Skin VX is associated with HPV. However, these findings are not supported in case of oral VX. The etiology of the VX is unknown, but unusual reaction or immune response to localized epithelial trauma or damage might be the cause; however, this hypothesis is true only for those VX that have developed in association with, or at the edge of disturbed squamous epithelium such as lupus erythematosus, squamous cell carcinoma, melanocytic nevus, lichen planus, epidermolysis bullosa, and epithelial dysplasia. As VX generally occurs on the masticatory mucosa; Cobb et al. supported the theory that VX is inflammatory in origin, while others feel that it is an immune-mediated process.

In general, the lesions appear as a soft, well-demarcated, sessile, painless, slightly elevated mass with a white, yellow/white, or red colour, and a papillary or roughened (verruciform) surface. The center of the lesion is described as crateriform or cup-shaped. They are generally symptom-free and encountered incidentally. The provisional diagnosis includes leukoplakia, verrucous carcinoma (VC), squamous papilloma, carcinoma in situ, verruca vulgaris, and fibroma.

Histopathologically, VX reveals parakeratinized papillary or verruciform surface changes with deep keratin filled clefts between the epithelial projections. The characteristic feature of VX is present in connective tissue papillae which contain foamy histiocytes or xanthoma cells. The xanthoma cells can be numerous and seen in papillary submucosa or maybe sparsely present. The cytoplasm of xanthoma cells may contain periodic acid-Schiff positive, diastase-resistant granules. Uniform elongation of the rete ridges with neutrophilic exocytosis in parakeratin layer, along with plasma cells and lymphocytic infiltration in connective tissue, may present.

Most investigators have concern regarding the over-diagnosis of VX as VC that can lead to aggressive surgical intervention. Microscopically, keratin filled crypts, marked acanthosis with minimum atypia, are the features shared by both VX and VC, but bulbous epidermal down growth occur in VC, while narrow rete ridges are the feature of VX. Another differentiating feature is the presence of xanthoma cells in VX, but in a superficial biopsy, scanty xanthoma cells can be missed, particularly to those eyes which are unfamiliar with the lesion.

As the WHO classified VX among the benign lesion able to mimic OSCC and VC microscopically, it is necessary to rule out theses lesion. The key feature to diagnose VX is xanthoma cells.

Conclusion

The oral VX is a rare lesion. Its clinical features are not very specific so that in case of the white, papillomatous, or verrucous lesion, the clinician should consider it as a provisional diagnosis so that chance of over diagnosis and excessive surgical procedure is avoided. The definitive diagnosis of VX is based on histopathological examination, in which presence of xanthoma cells in papillary submucosa is pathognomonic, but in a superficial biopsy, scanty xanthoma cells can be missed, particularly to those eyes which are unfamiliar with the lesion. Therefore, histopathologist must be careful while giving the diagnosis of the verrucous, papillomatous, or white lesions.

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Declaration of Patient Consent

The authors, hereby, declare that they have obtained all required patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and

Figure 1: (a) Greyish white lesion on the left buccal vestibule with “fish egg” area. (b) Punch biopsy specimen showing creamish white keratotic irregular surface of the biopsy specimen

Figure 2: (a) Photomicrograph showing papillary projections lined by stratified epithelium with keratin clefts, along with underlying connective tissue stroma (H and E Stain, 4× Magnification). (b) Photomicrograph showing papillary projections with thin epithelial rete ridges with connective tissue papillae having numerous xanthoma cells (H and E Stain, 10× Magnification). (c) Photomicrograph shows clear to eosinophilic granular cytoplasm with eccentrically placed nuclei (xanthoma cells) (H and E Stain, 40× Magnification)
due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

References