

Clinicopathological Features of a Lower Lip Verruciform Xanthoma: A Rare Case Report

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ABSTRACT

Verruciform Xanthoma (VX) is an uncommon, benign, asymptomatic lesion of the oral cavity. The incidence rate of VX is 0.025%, with the most common location reported to be the gingival margin, followed by the tongue, hard palate, buccal and labial mucosa. It may also present on the skin and genitals. VX can manifest as a solitary or multiple lesion with well-defined margins. It appears as a papule or plaque with verrucous or papillary growth, exhibiting variable colours ranging from reddish-pink and yellow to grey. While the lesion typically appears verruciform, it may also have a polypoid, papillomatous, or sessile nature. In the present case report, the authors present a 45-year-old male patient with a history of tobacco use, who exhibited a reddish-pink papillomatous growth on his labial mucosa for a duration of three months. The growth was surgically excised, and histopathological evaluation confirmed the characteristic features of VX. The lesion healed without complications, and no recurrence was observed. Clinically, VX may be mistaken for various malignant or premalignant lesions such as papilloma, verrucous carcinoma, or proliferative verrucous leukoplakia. Therefore, it is crucial to differentiate VX from these conditions to avoid inappropriate intervention. Histopathological evaluation is necessary for the definitive diagnosis of the lesion, which reveals the pathognomonic presence of foamy histiocytes within the elongated dermal papillae. The present case report highlighted the diverse clinical features of VX and discusses its histological findings along with the differential diagnosis.

Keywords: Foam cells, Histopathology, Surgical excision, Xanthomatosis

CASE REPORT

A 45-year-old male patient presented with a chief complaint of a reddish patch on the lower lip for 2-3 months. The patient had no relevant medical history but had been chewing tobacco for one year, 2-3 times daily. Intraoral examination revealed a well-demarcated, solitary plaque on the lower labial mucosa with a surface texture resembling cauliflower-like projections. The plaque was pinkish-red in colour and measured approximately 1.5×1.5 cm in size [Table/Fig-1]. The lesion was surrounded by multiple leukoplakic patches and inflamed minor salivary gland openings. On palpation, it was sessile, non scrapable, non tender, firm in consistency, but non indurated. There was no bleeding on provocation. A provisional diagnosis of proliferative verrucous leukoplakia was given, with a localised area of verruciform hyperplasia. The lesion was advised for excisional biopsy, and squamous papilloma and verrucous cancer were considered as differential diagnoses.



[Table/Fig-1]: Intraoral image showing well-defined plaque showing cauliflower-like projections.

Serological investigations were negative for Human Immunodeficiency Virus (HIV) and hepatitis A, B, and C. Excisional biopsy was planned and performed under Local Anaesthesia (LA). The lesion was completely excised, and the sample was sent for histopathological examination [Table/Fig-2].

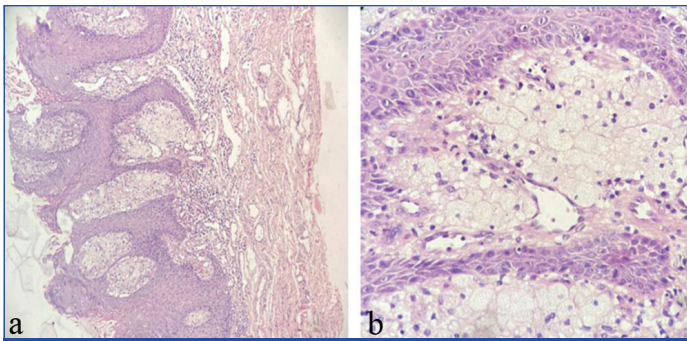


[Table/Fig-2]: Multiple bits of gross specimen measuring approximately 0.8×0.5 cm.

On histopathological analysis, parakeratinised stratified squamous proliferative epithelium with parakeratin plugging was observed in the lesional tissue. The upper spinous layers showed infiltration by several neutrophils aggregated on the surface, while long dermal papillae were filled with foamy histiocytes displaying central nuclei and finely vacuolated cytoplasm. The subepithelial region displayed numerous plasma cells. Based on the aforementioned characteristics, a histopathological diagnosis of VX was given [Table/Fig-3a,b]. The healing of the lesion was uneventful, and after one year of follow-up, the patient showed no evidence of recurrence and is under observation for the remaining leukoplakic lesions [Table/Fig-4].

DISCUSSION

The VX is a rare lesion first described by Shafer in 1971. It involves the oral mucosa and its aetiology and nature remain uncertain,



[Table/Fig-3]: a) Section showing epithelium with rete ridges elongated to a uniform depth and connective tissue clefts filled with parakeratin and accumulation of macrophages just below the epithelium (H&E, 10X). b) Section showing accumulation of multiple large macrophages with foamy cytoplasm just beneath the epithelium which is the distinct diagnostic feature (H&E, 10X).



[Table/Fig-4]: Follow-up image after one year showing no recurrence of the lesion.

although the most widely accepted theory suggests it is a reactive process rather than a true neoplasm [1]. The incidence rate of VX is 0.025% [2]. In the present case, the lesion was found on the labial mucosa, which accounts for a total incidence of 1.89% as observed by Belknap AN et al., [3]. VX is considered to have an equal gender predilection [2]. However, Philipsen HP et al., discovered, in a large survey, that OVX is more common in men under the age of 50 [2]. In this particular case, the patient was a 45-year-old male with a history of chewing tobacco.

The VX may cause clinical and histopathological resemblance to lesions caused by the human papillomavirus; however, no evidence of association was noted [4,5]. These lesions are commonly associated with inflammatory conditions such as pemphigus vulgaris, discoid lupus erythematosus, warty dyskeratoma, lichen planus, dystrophic epidermolysis bullosa, epidermal nevus/CHILD nevus, and seborrheic keratosis, as well as graft versus host disease [6-8].

Clinically, it presents as a papillary, cauliflower-like, or verrucous exophytic lesion predominantly observed on the oral mucosa [9]. It is generally a benign, asymptomatic, slowly growing lesion that may appear yellow, white, or red in colour [10]. The most common intraoral sites are the alveolar ridge and gingiva, while the buccal mucosa, palate, tongue, floor of the mouth and lip are less common locations [2].

The incidence of VX in the lower lip is rare, with only a few cases reported in the literature. Cebeci F et al., reported a case of oral VX on the cutaneous surface of the lower lip in a 61-year-old non smoker [11]. Pereira T et al., reported a similar case involving the lower lip in a 56-year-old male patient with a history of smoking and tobacco chewing [12]. The lesion was excised, and no evidence of recurrence was observed, similar to the present case. Kale Tejraj P et al., also reported a case of oral VX involving the lower lip in a 42-year-old male patient, presenting as an irregular white plaque [13]. Histopathology and immunohistochemistry were performed to confirm the diagnosis, which showed strong cytoplasmic Cluster Differentiation 68 (CD68) positive immunohistostaining.

Oral VX is commonly observed at a size of approximately 1.5-2 cm, similar to what was observed in the present case [2].

However, Balasundaram T et al., reported a case of oral VX with diffuse involvement of the gingiva and alveolar mucosa, measuring approximately 6x3 cm in size [14].

Only a few cases of extraoral VX have been reported. Extraoral sites include the genital mucosa, skin of the thigh, and perineum [15]. These are usually associated with other conditions such as lymphoedema, epidermal nevi, congenital hemidysplasia and limb defect syndrome [16]. Additionally, VX has been documented in patients with hypercholesterolemia, hepatitis C virus carriers, and immunocompromised patients [17].

Due to its clinical variations and similarities to the aforementioned lesions, VX cannot be definitively distinguished clinically from papilloma, verruca vulgaris, verrucous carcinoma, and rarely squamous cell carcinoma [1]. Even in the present case, squamous papilloma and verrucous carcinoma were considered as differential diagnoses.

Several concepts have been proposed to describe the aetiology of VX, including local trauma, inflammation, carcinoma in situ, candida infection, viral infection, and local immunological disorders [18]. However, the presence of foam cells in the submucosa and dermis, which is associated with chronic inflammatory phenotypes, suggests a chronic inflammatory mechanism [16].

The final diagnosis of VX is based on histopathological features. Oral VX is characterised by elongated rete pegs that are relatively uniformly deep, a squamous epithelial surface with variable shape coated in parakeratin, and the presence of giant swollen foam cells or xanthoma cells filling the connective tissue papilla between the epithelial pegs, as observed in the present case [2]. Small Periodic Acid-Schiff (PAS) positive granules may be observed in the cytoplasm of many xanthoma cells before and after diastase digestion, as shown by PAS [19].

Surgical excision is the treatment of choice for VX. Recurrence of VX is extremely rare, although a few cases of palatal VX have reported recurrence [20-22]. In the present case, no evidence of recurrence was noted after one year.

CONCLUSION(S)

The VX is a rare condition that affects the oral mucosa and is often unfamiliar to clinicians. The clinical characteristics of the lesion are nonspecific and can potentially lead to misdiagnosis. The key to diagnosing VX is confirming the presence of xanthoma cells to differentiate it from verrucous carcinoma, thus avoiding overtreatment and unnecessary surgery. Accurate detection and diagnosis, both clinically and pathologically, are crucial. The present case report aimed to raise awareness of this intriguing lesion, enabling a differential diagnosis of benign papillary and verrucous lesions.

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