

Case Report

Verruciform xanthoma of the scrotum in association with neurofibroma: a case report and a brief review of the literature

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Abstract: Verruciform xanthoma (VX) is a rare benign mucocutaneous lesion that typically presents as solitary asymptomatic verrucous growth. Histopathologic examination remains the cornerstone of diagnosis, which shows subepithelial lipid-laden foamy histiocytes associated with papillomatosis, parakeratosis, and dyskeratosis. Previous studies have reported oral cavity as the most common site of VX. However, extra oral cases have also been reported mainly on vulva, penis, and scrotum. Most of the previous studies of VX on scrotum have been reported in Japanese males and few in Causacian males. Here, we report a first case of scrotal VX in Chinese male occurring in a co-existence with neurofibroma of the trunk. We also present a brief review of the literature.

Keywords: Verruciform xanthoma, neurofibroma, scrotum

Introduction

In 1971, Shafer reported for the first time, the cases of verruciform xanthoma (VX) on the oral mucosa [1], which is now considered the most common site of VX. In later years, rare extra oral cases were also reported mainly on vulva, groin, penis, and scrotum. Rarely VX may arise on a preexisting lesion such as on arteriovenous hemangioma [2], or on epithelial nevus [3]. Fukuda et al [4] reported VX occurring in close association with isolated epidermolytic acanthoma. Here, we report the case of VX occurring in co existence with neurofibroma. So far as our knowledge, no study in the past has reported VX occurring with neurofibroma. Also regarding racial predilection of the disease, while studies have reported most of the cases of scrotal VX in Japanese males, this may be the first case in Chinese man.

Case report

A 69-year-old Chinese man presented in the outpatient department of our hospital with a growth in the scrotum, which appeared about 4 years. The lesion was not painful or itchy but it

was gradually increasing in size. When asked about similar growth elsewhere in the body, patient admitted to have one on the abdomen, which appeared 10 years back. Past medical history and family history were noncontributory. Laboratory evaluations were unremarkable. On physical examination, a pink colored well-circumscribed pedunculated growth with verrucous surface measuring about 6 × 4 mm was noted on the scrotum (**Figure 1A**). Another lesion measuring about 8 × 5 mm size was noted on right lower abdomen, which was a smooth surfaced brown colored pedunculated growth (**Figure 1B**). Surrounding skin of both the lesions appeared normal. Surgical excision under local anesthesia was performed for both the lesions and specimen was sent for histopathologic evaluation. The scrotal growth showed polypoid lesion with hyperkeratosis, parakeratosis, and a papillomatous proliferation of epidermal cells without atypia. Exocytosis of neutrophils into upper layer of epithelium was prominent. A dense accumulation of macrophages with foamy cytoplasm and lipid-laden vacuoles was present throughout the papillary dermis (**Figure 2A**). Orange hued parakeratosis

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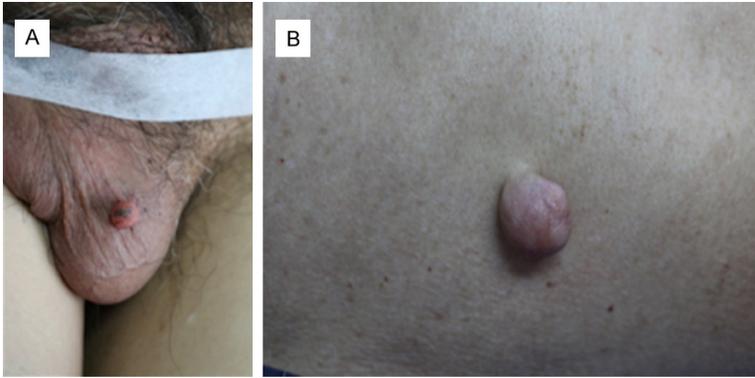


Figure 1. A. Well-circumscribed pink colored verrucous growth on scrotum, B. Brown colored pedunculated growth with smooth surface on right lower abdomen.

was seen pointing towards xanthoma cells (**Figure 2B**). The abdominal growth showed loose arrangement with pale myxoid stroma (**Figure 3A**) and haphazard spindle cells with comma shaped nuclei and few mast cells in superficial reticular dermis (**Figure 3B**). Based on these findings, a diagnosis of verruciform xanthoma on the scrotum and neurofibroma on the trunk was made. The operative site healed uneventfully and no recurrence was reported at 4 months of follow up.

Discussion

After the first case of scrotal VX reported by Kimura in 1984 [5], 16 other cases were identified by our search. The search term 'verruciform xanthoma and scrotum' was entered into a search of the National Library of Medicine's PubMed Database. These articles were published between the year 1984 and 2015. The age of patient ranges from 35-82 years. Size of lesion varies from 4 × 2 mm to 3 cm in dm. Duration of disease varies from 1 month to 20 years. The studies reported typically solitary asymptomatic lesions except one study where lesion was pruritic [6], and few studies where multiple lesions were found [5].

Most of the patients who developed scrotal VX had significant past or present medical history, such as, history of operation for cancer of the stomach, history of renal transplant, history of Parkinson disease, hypertension and hyperlipidemia, history of hepatitis C and blood transfusions when undergoing enterectomy, and patient with psoriasis under psoralen photo-

chemotherapy [2, 6, 7]. Other patients with scrotal VX who were otherwise healthy however had coexisting lesions such as, isolated epidermolytic acanthoma [4]. In the present case, patient also developed neurofibroma in the trunk, 6 years after which he developed verruciform xanthoma on the scrotum. Whether there is a correlation of VX with its associated conditions or it's just a coincidence, is yet to be established.

Although etiology and pathogenesis of disease remains poorly understood, this disorder is considered to be reactive, characterized mainly by the histological finding of lipid-laden histiocytes filling the papillary dermis. Lara et al [8] mentioned in their study that severe cutaneous trauma and chronic inflammation may induce epithelial keratinocytes to respond aberrantly leading to epidermal hyperplasia and foamy cell formation characterizing the VX lesion. However, there is paucity of evidence to support this theory. Due to verrucous appearance of VX lesions, HPV infection has been suggested as a triggering factor. While some studies have shown the presence of HPV in VX [9], numerous studies have failed to detect HPV DNA by electron microscopy, immunocytochemical analysis, and in situ hybridization [10].

As the name implies, the lesion of VX is verrucous, which should be differentiate from other verrucous lesion such as, condyloma acuminata, condyloma lata, verrucous carcinoma, and squamous cell carcinoma. It needs to be differentiated from other xanthomas as well. Histopathology of VX shows hyperkeratosis, focal parakeratosis, acanthosis without atypia, papillomatosis, and accumulation of characteristic xanthoma cells. In contrast to other xanthomas, foam cells in VX are notably localized to the papillary dermis. Also, in contrast to other xanthomas, VX is not associated with dyslipidemia. Owing to its benign nature, therapy is generally not necessary for VX. Studies have reported successful cure of these lesions following shave biopsy or surgical excision requiring no additional intervention.

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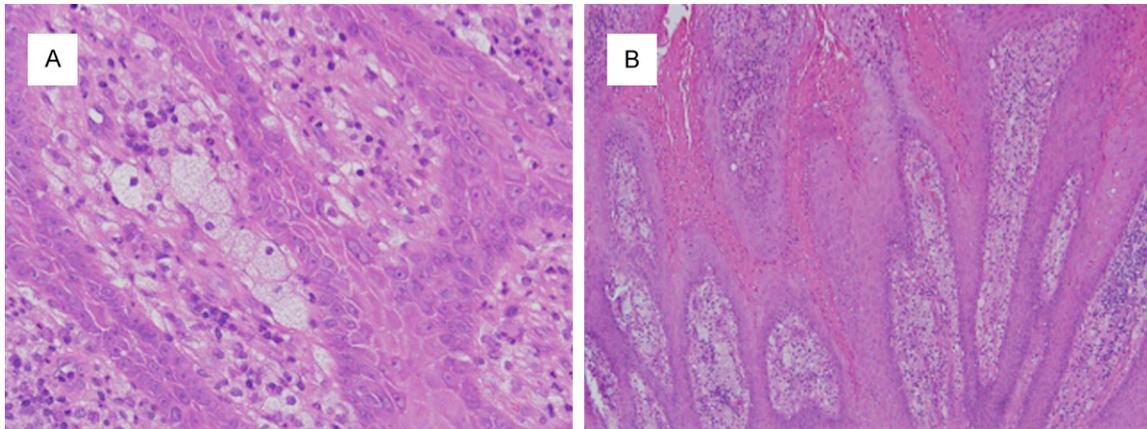


Figure 2. A. Exocytosis of neutrophils into upper layer of epithelium and dense accumulation of macrophages with foamy cytoplasm and lipid-laden vacuoles (hematoxylin and eosin; $\times 40$). B. Orange hued parakeratosis pointing towards xanthoma cells (hematoxylin and eosin; $\times 100$).

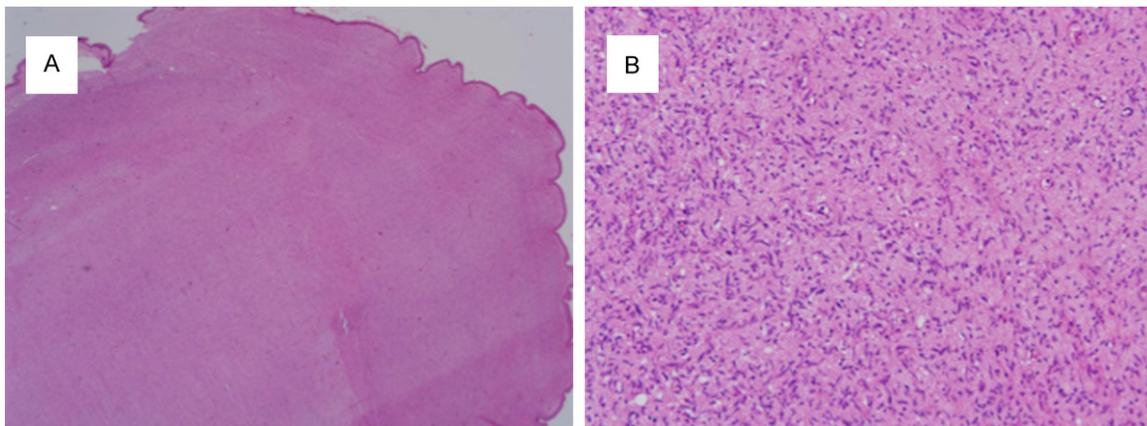


Figure 3. A. Loose arrangement with pale myxoid stroma (hematoxylin and eosin; $\times 20$). B. Haphazard spindle cells with comma shaped nuclei and scanty mast cells (hematoxylin and eosin; $\times 200$).

Conclusion

Owing to the occurrence of VX lesions in the setting of other cutaneous conditions, patients should be carefully assessed for other concurrent diseases. Since VX lesions are benign in nature, aggressive surgical treatment should be avoided but diagnosis should not rely on clinical grounds and biopsy should be performed because few VX lesions have been associated with epidermal atypia and invasive squamous cell carcinoma.

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Disclosure of conflict of interest

None.

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