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Case Report

Giant Keratoacanthoma over Unilateral Leg Secondary to Chronic Friction and Successfully Treated with Wide Local Excision and Flap: A Rare Case Report

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ABSTRACT

Keratoacanthomas (KAs) are fast-growing cutaneous tumours mostly over sun-exposed areas. Lesions with size larger than 20-30 mm are termed as giant KA. Giant KA is very rare and sometimes develops over trauma, surgical site and pre-existing dermatosis such as lichen planus hypertrophicus and prurigo nodularis. Giant KA may mimic squamous cell carcinoma (SCC) causing anxiety among patients and rarely develop into SCC, requiring prompt treatment. Here, we report a rare case of giant KA over the right leg, developing due to chronic friction. Histopathology proved to be KA without malignant changes. He was treated with wide local excision and flap reconstruction. Our case highlights how even chronic friction leads to microtrauma, which may result in the development of a giant-sized premalignant tumour like KA. Timely intervention like biopsy will help dermatologists to diagnose and manage successfully. Our case also adds to the pool of KAs treated by wide local surgical excision with flap reconstruction.

Keywords: Friction, Giant, Keratoacanthoma, Surgical excision

INTRODUCTION

Keratoacanthomas (KAs) are a solitary, fast-growing cutaneous neoplasm that undergoes spontaneous regression. Clinically, it is characterised by an umbilicated nodule with a central crater filled with keratin plugs. A KA larger than 20–30 mm is classified as a giant KA. They generally occur in sun-exposed areas of light-skinned individuals. Few cases of pre-existing dermatosis, such as lichen planus hypertrophicus, prior surgery site and underlying trauma, have been described in the literature. Herein, we report a 59-year-old male presenting with a fast-growing verrucous growth, which attained its present size over 3 months. The growth mimicked squamous cell carcinoma (SCC). The patient had a history of localised itching over that area for several years. Histopathology confirmed KA; it was diagnosed as giant KA since it was over 20 mm. He was treated with wide local excision and flap. This case is reported due to its rarity, contributing to the documented instances of giant KAs which arise due to friction and successfully treated by wide local excision.

CASE REPORT

A 59-year-old male complained of a verrucous growth of 2 years over his right leg. He gave a history of prior itching of that area, which resulted in pigmentation. The symptoms were

temporarily controlled with antihistamines and topical steroids. He developed a small papule of pea size, which enlarged and attained its present size within the next 3 months. There was occasional bleeding, pain and ulceration over the surface. He denied any history of trauma or application of contact irritants, but there was a history of chronic itching.

A solitary, well-circumscribed 8 cm × 9 cm exophytic growth with a defined hyperpigmented rim was observed in the middle of the right shin. The lesion's surface was irregular, verrucous and ulcerated with haemorrhagic crusts at the centre [Figure 1]. The lesion bled on manipulation. It was non-tender and non-indurated. Regional lymph nodes are not enlarged. All the investigations, including complete blood count, liver function tests, renal function tests, human immunodeficiency virus, hepatitis B surface antigen and hepatitis C virus, were within normal limits. Histopathology showed hyperkeratosis, acanthosis and papillomatosis of the epidermis. A focal invaginating crateriform space filled with lamellar keratin was observed, along with numerous horn cysts [Figure 2a and b]. Keratinocytes showing glassy cytoplasm along with a few dyskeratosis are also noted [Figure 2c]. Intervening papillary dermis shows dense inflammatory infiltrate comprising lymphocytes, plasma cells and eosinophils with proliferated capillaries and no atypia. Hence, KA was diagnosed. Due to the considerable size of the lesion, a diagnosis of giant KA was established. The patient underwent a wide local excision procedure with flap reconstruction [Figure 3].

DISCUSSION

KA is solitary, rapidly growing, painless skin tumour. It arises from the infundibular epithelium of the hair follicle.[1,2] The classical lesions start as a small papule that rapidly proliferates into dome-shaped plaque over a period of 6–10 weeks, following a period of stabilisation for a few months and spontaneous regression within 6 months with a few larger lesions taking up to 2 years to resolve mostly without any treatment.[3] Clinically, they are characterised by well-defined tumours with keratinous plugs looking like central craters. According to Schwartz, the stages include proliferative (rapid growth), mature (development of central keratinous core) and involution (necrosis and scarring).[4]

The most common presentation sites are over the sun-exposed hair-bearing areas such as the face, head, neck and dorsal aspect of extremities. However, uncommon areas such as mucosa, subungual and perianal areas have also been reported. In our case, the lesion measured 8 cm × 9 cm and was diagnosed as giant KA. It was located on the shin, an uncommon site for such a presentation.

Figure 1: Large verrucous plaque with well-defined margin and central ulceration and crusting.

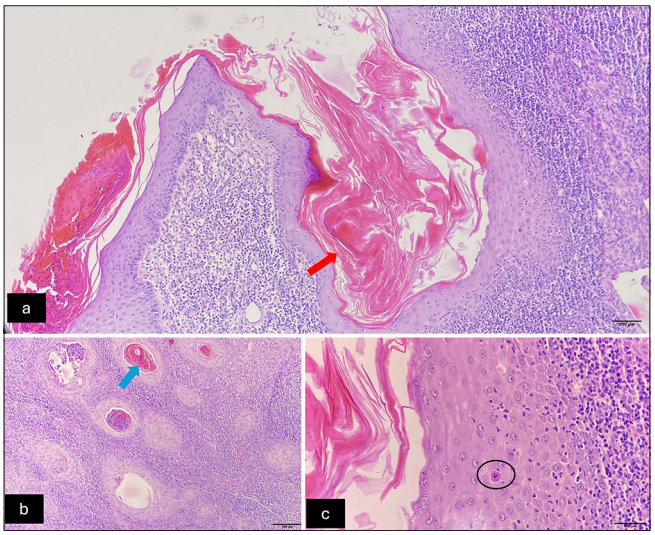

Figure 2: (a) Histopathology showing focal invaginating crateriform space filled with lamellar keratin (red arrow) (H & E ×100). (b) Dermis showing numerous horn cysts (blue arrow) (H & E ×400). (c) Keratinocyte with ground glass cytoplasm and dyskeratosis (black circle)(H & E ×400). H&E: Haematoxylin and eosin.

Figure 3: Post-treatment after wide local excision with flap, with the crusting showing post-surgical healing.

The common aetiologies of KAs include chronic ultraviolet exposure, chemical carcinogens, HPV virus infection or trauma. Most of the cases leading to giant KAs or KA centrifugum marginatum presenting over the lower leg have been associated with traumatic events[4,5] or pre-existing dermatological conditions such as lichen planus hypertrophicus, prurigo nodularis, lichen simplex chronicus[6,7] and previous surgical sites,[8] which are characterised by chronic and vicious itch-scratch cycle. In our case, the patient has a history of recurrent and persistent itching for years before the onset of the KA, which suggests that friction leading to microtrauma may have resulted in the development of the lesion.

Although in most of the cases, the KA lesions tend to resolve spontaneously, but the progression of giant KA to SCC is seen in as high as 25% cases as per available literature.[9] Furthermore, KA is considered a less aggressive subtype of SCC in few studies,[10] so all KA cases should be treated without waiting for spontaneous resolution to avoid progression to malignancy. Multiple treatment modalities such as intralesional injections of bleomycin, methotrexate, corticosteroids and 5-fluorouracil have been used regularly for KAs with variable success.[6,10] Topical podophyllin, topical and systemic retinoids and radiation therapy have also been found useful.[10,11] However, in cases of giant KAs, wide local surgical excision or Moh's micrographic surgery is considered due to the risk of malignant transformation.[3,11] In our case, a wide local excision with closure and flap is done. The incidence of recurrence post-surgery is reported to be around 4–8%, so close follow-up is being done in our case.[12]

CONCLUSION

Giant KA is a rare skin tumour, and its occurrence over an area of chronic friction is a rare phenomenon. It is prone to undergo malignant transformation and has high chances of recurrence post-treatment. Hence, regular follow-up is essential in these cases.

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