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CASE REPORT

Recurrent verrucous carcinoma of the foot: A case report

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Abstract: Verrucous carcinoma is an uncommon, locally invasive and slow growing squamous cell carcinoma of the skin and mucous membrane. The proposed causative agent for verrucous carcinoma is human papillomavirus (HPV). It has low metastatic potential compared to squamous cell carcinoma. This is a report of a 75-year-old male admitted with history of growth over the forefoot. Histopathological examinations confirmed verrucous carcinoma and the patient underwent forefoot amputation with 2 cm clear surgical margin. During the 4th month of follow-up, the patient developed a lesion at the post-operative site which was proven as a recurrence. Even though it carried low metastatic potential, it needed repeated resection or amputation because of high local recurrence.

Keywords: forefoot; recurrences; amputation

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Introduction

Verrucous carcinoma is an uncommon, low grade squamous cell carcinoma affecting the skin and mucous membrane[1]. The reported incidence of verrucous carcinoma varies, mostly affecting males in their fifties. Among the numerous proposed causes for verrucous carcinoma, the most prominent is the human papillomavirus (HPV). Verrucous carcinoma has a favorable prognosis because of its low risk of distant metastasis. There are multiple variants of verrucous cell carcinoma. It can occur in the oropharynx, perianal region and lower limb, including the foot[2].

Case report

A 74-year-old male was admitted with complaints of growth over the plantar aspect of the left foot for 5 months. The patient had a history of occasional bleeding in the growth for 5 months. There was no history of loss of appetite and weight loss. The patient was a non-alcoholic and non-smoker with no previous history of papilloma or wart excision. Local examination showed proliferative growth of 3 × 2 cm in the plantar aspect of the left foot, in between the great toe and the third toe. Palpation growth was hard in consistency and tenderness was present (**Figure 1**). Lymph node examination showed no inguinal lymphadenopathy.

An edge biopsy from the ulcer showed squamous cells with papillary projections. The supporting stoma was non-reactive with the appearance of benign keratinocytes (**Figure 2**). High quality magnetic resonance imaging (MRI) showed a lesion of 3 × 2 cm located on the plantar aspect of the left foot with deep tissue involvement without bony invasion. Pre-operative diagnosis was made as verrucous carcinoma with deep tissue involvement and the patient underwent forefoot amputation with 2 cm clear margin. Histopathology of resected specimen confirmed verrucous carcinoma with clear margin. During the fourth month of follow-up, patient developed proliferative lesion on the forefoot amputation site (**Figure 3**). Biopsy from the lesion showed recurrent

verrucous carcinoma. Patient underwent below knee amputation because of the recurrence.

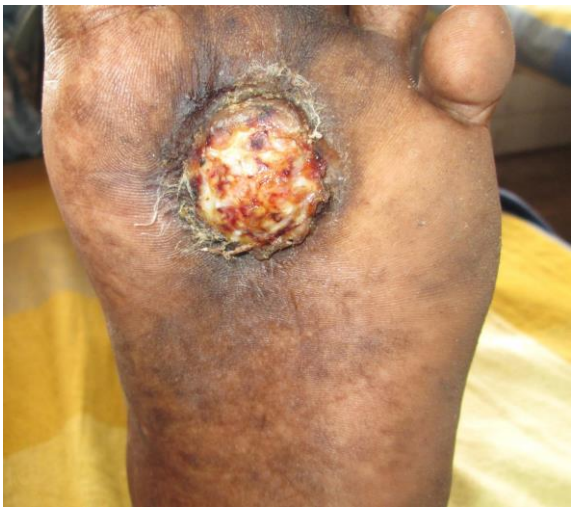

Figure 1. Proliferative growth of 3 × 2 cm in the plantar aspect of the left foot, in between the great toe and the third toe

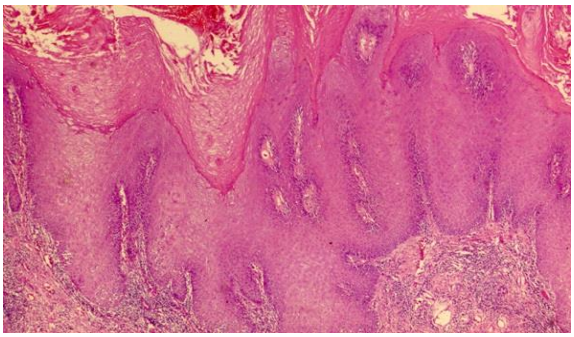

Figure 2. An edge biopsy from the ulcer showed squamous cells with papillary projections. The stoma is mostly non-reactive with benign keratinocytes (H and E, ×400)

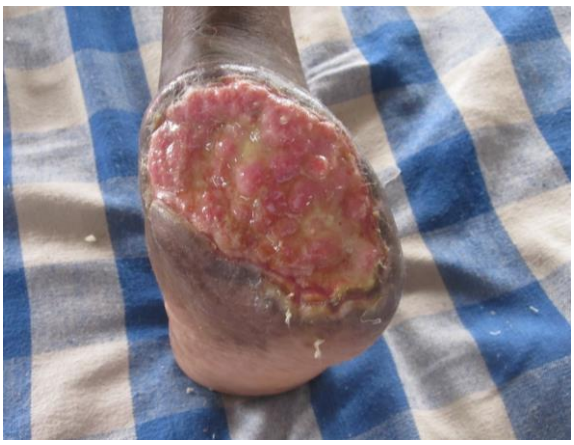

Figure 3. During follow-up, patient developed proliferative lesion on the forefoot amputation site

Discussion

Verrucous carcinoma usually appears as a raised, white cauliflower-like mass. It usually occurs in the oral cavity and genital region. When lesion occurs on the foot, it mostly occurs in the forefoot[3]. As the tumor grows, it invades locally and involves the plantar fascia or the destruction of the metatarsal bones[4]. DNA of HPV serotypes 6, 11, 16 and 18 have been identified in verrucous carcinoma specimens[5].

Histopathology shows squamous cells with papillary projections. The stoma is usually non-reactive. Keratin pearls are uncommon in verrucous carcinoma compared to squamous cell carcinoma[2]. Sometimes it may show infiltration of inflammatory cells[6]. Multiple deep biopsies are mandatory for proper diagnosis because superficial biopsy could produce false negative results. There are numerous differential diagnoses for verrucous carcinoma including both benign and malignant conditions. It is mandatory to differentiate other differential diagnoses because treatment differs for each diagnosis[6].

The lower limb is a rare site for cancerous lesions. It is very difficult to differentiate between benign and malignant lesions when it occurs in the lower limb. Preoperative imaging is mandatory in order to decide the extension of resection or amputation because verrucous carcinoma has high propensity for recurrence. For soft tissue invasion of the foot, MRI is the best investigative method. However, in suspected bony invasion or high risk cases, computed tomography (CT) scores better compared to MRI[7].

The accepted treatment for verrucous carcinoma is local excision with clear margin. It is very difficult to determine the exact macroscopic margin during surgery because of the destruction of adjacent tissues by the growth[8]. Amputations are only indicated when there is extensive deep tissue involvement, aggressive invasive disease, limb with compromised blood supply, massive wound defect, secondary wound infections, and tumor recurrences secondary to incomplete excision[9,10]. Electrodessication, cryotherapy and laser ablation mostly cause recurrences.

Conclusion

Verrucous carcinoma is an uncommon, highly invasive and slow growing squamous cell carcinoma. Even though it rarely metastasizes, it has high local recurrence. Patients may require amputation because of the local recurrence. Amputations are more likely to be preferred when there is soft tissue or bone involvement. This case

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report highlights an important feature of verrucous carcinoma–that local recurrence can occur in verrucous carcinoma when there is soft tissue involved even with amputation.

Conflict of interest

The authors declared no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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