

Verrucous Carcinoma of the Nail Bed: A New Case

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Established Facts

- Verrucous carcinoma of the nail bed is a rare variant of squamous cell carcinoma. Its association with human papillomavirus (HPV) infection has rarely been reported. The HPV subtypes identified were mainly HPV16, 2, 11, 18, 26, 31, 34, 35, 56, 58, and 73.

Novel Insights

- We here report a case of verrucous carcinoma of the nail bed associated with HPV53.

Keywords

Verrucous carcinoma · Nail bed · HPV53

Abstract

Verrucous carcinoma (VC) of the nail bed is a rare variant of squamous cell carcinoma that is often misdiagnosed as a benign condition. The clinical presentation of this tumor is very similar to that of warts or onychomycosis hence the delayed appropriate treatment. Its association with human papillomavirus (HPV) infection has rarely been reported. The treatment of VC of the nail unit depends on the extent of the lesion and the presence or the absence of bone. We here report an unusual case of VC of the nail bed of the left big toe in a man associated with HPV53 infection that had been mistaken for a wart for 1 year. The condition was treated by ray amputation.

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Introduction

First described by Lauren V. Ackerman [1] in 1948, verrucous carcinoma (VC) is a highly keratinizing variant of squamous cell carcinoma (SCC) of the skin or mucosae. Its location on the nail unit has rarely been reported and in most cases the diagnosis is missed or delayed. When diagnosed and treated early, it is fully curable but late intervention often leads to bone invasion and need of extensive excision that may result in amputation. Thus, we here present an unusual case of VC of the nail bed of the left big toe in a man that had been misdiagnosed as a wart for 1 year.



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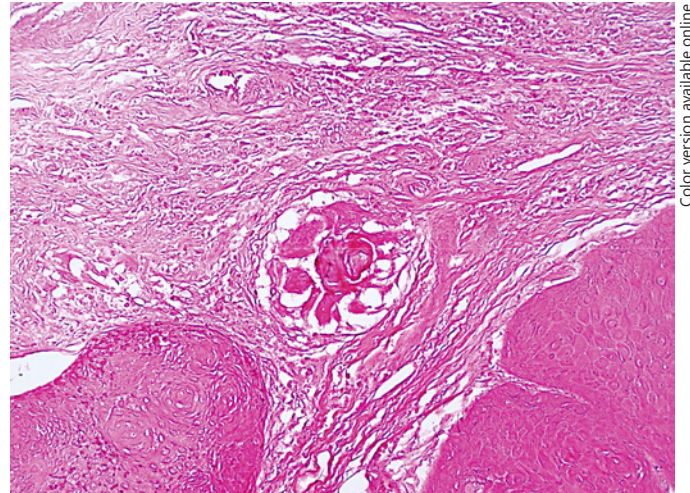
Fig. 1. Thick warty plaque overtaking all the nail bed of the left big toe.

Observation

A 70-year-old man with no medical history presented to our department due to a verrucous tumor of the nail bed of his left big toe evolving for 1 year. Physical examination showed a thick warty plaque overtaking 100% of the nail bed (Fig. 1). The diagnosis of wart was made and the patient was treated with cryotherapy several times for 3 months without any improvement. Then, the tumor was treated as a fungal infection with terbinafine (250 mg daily), but no improvement was noted after 8 months. Histological examination of the plaque showed orthokeratotic hyperkeratosis, verrucous epidermal hyperplasia with a few scattered mitoses limited to the basal layer (Fig. 2, 3). Human papillomavirus (HPV) subtyping using polymerase chain reaction was positive for HPV53. The X-ray of the big toe showed bone erosion, hence the indication of amputation (Fig. 4).

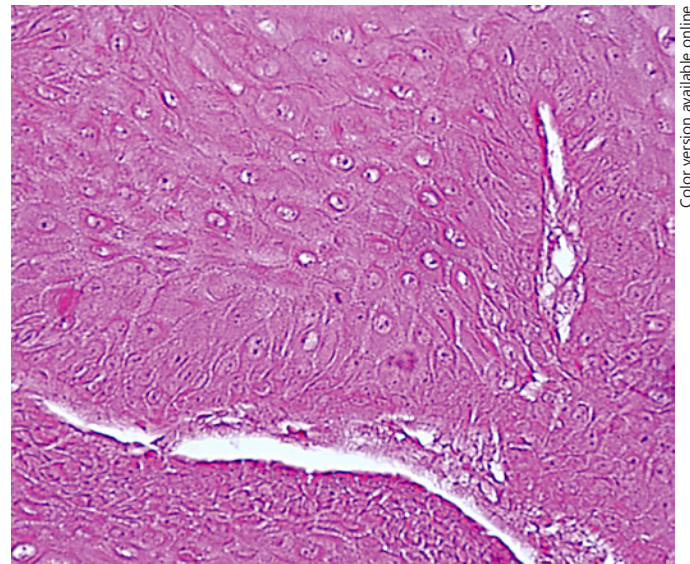
Discussion

VC was first described by Lauren V. Ackerman [1] in 1948 as a highly keratinizing variant of SCC of the skin or mucosae [2]. Different forms of the disease may occur in the oral and perioral region (oral florid papillomatosis), anal and genital regions (giant condylomata acuminata), and on the sole or heel (epithelioma cuniculatum) [3]. Its location in the nail bed is rare and the diagnosis is usually missed or delayed. To our knowledge, there are 13 reported cases of VC [4, 5]. Usually, the tumor involves a single-digit lesion, most commonly the big toe, but can also be seen in other digits. The duration of the lesion before diag-



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Fig. 2. Broad masses of squamous endophytic development with some cells infiltrating the dermis. HE. $\times 250$.



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Fig. 3. Mitotic squamous cell in the basal layers. HE. $\times 400$.

nosis varies from months to many years [4]. On histopathological examination, VC presents as a highly keratinizing variant of SCC with an overall architecture resembling that of a normal epidermis. The tumor may show invasive characteristics without cellular atypia. The etiology of VC of the nail unit is still unknown; HPV infections, trauma, other chronic infections, radiation exposure, and immunosuppression have been proposed as possible causes [6]. The association of HPV with SCC in the unguinal and periungual skin is less well recognized than in other sites, especially the genital region [7]. The HPV subtypes identified were

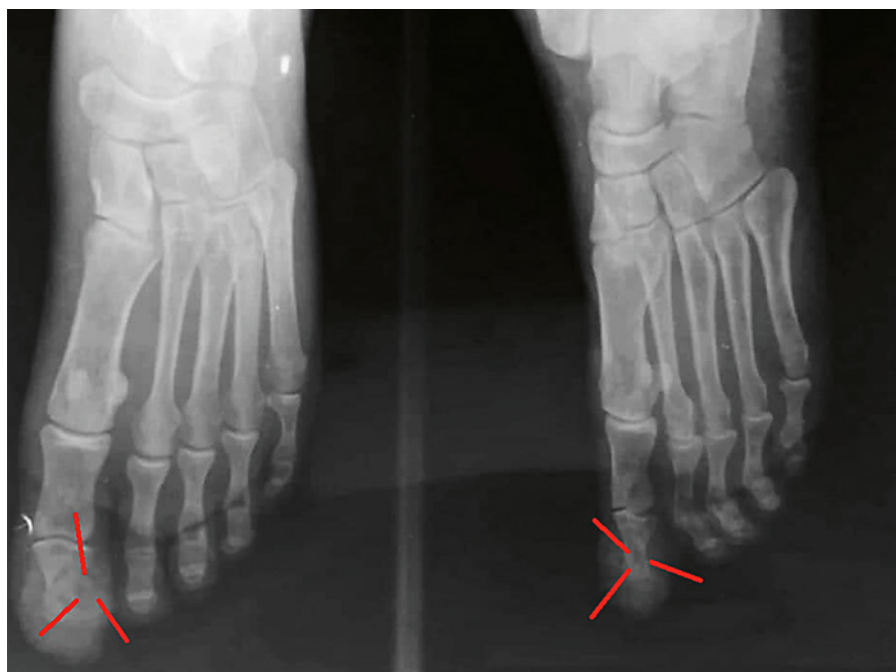


Fig. 4. Geotc osteolysis with indistinct borders (Lodwick type 1c) and cortical bone lysis of the medial edge of the distal big toe phalanx and thickening of the surrounding soft tissues.

mainly HPV16, 2, 11, 18, 26, 31, 34, 35, 56, 58, and 73 [7]. To our knowledge, we here report the first case of VC of the nail bed associated with HPV53.

The main differential diagnoses of VC of the nail bed are verruca vulgaris, onychomycosis, SCC, amelanotic melanoma, or deep fungal infection [4]. Treatment of VC of the nail unit depends on the extent of the lesion and the presence or the absence of bone involvement. Local treatment of the tumor by excision and grafting, electrodesiccation, curettage, and cryotherapy often fails. Mohs micrographic surgery is widely defended, but deep surgical excision seems to be the best treatment to prevent recurrence [8]. Amputation is indicated in case of involvement of the bone. More therapeutic options can be proposed like imiquimod cream and intra-arterial infusion of methotrexate (every 24 h for 10 days) as it was proposed by Sheen et al. [9]. There are also reports that recommend external radiotherapy before considering amputation and as a salvage therapy for all unresectable VC [10].

Conclusion

In summary, we here presented an unusual case of VC of the nail bed associated with HPV53 infection that had been misdiagnosed and treated first as a wart and then as a fungal infection for over a year. The delayed adequate treatment of this condition led to the destruction of the

nail unit and the involvement of the bone which indicated the amputation of the big toe.

Acknowledgement

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Statement of Ethics

The authors have no ethical conflicts to disclose. The patient has given his consent to publish photos and details of the case.

Disclosure Statement

The authors have no conflicts of interest to declare.

Author Contributions

Dr. Meryam Chaabani: is the guarantor of the content of the manuscript, including the data and analysis. Dr. Kahena Jaber: contributed to data collection, data analysis and interpretation, and drafting of the manuscript. Dr. Nejib Doss: contributed to data collection and interpretation of the manuscript. Dr. Mohamed Raouf Dhaoui: contributed to interpretation of data and revision of the article. Dr. Issam Msakni: histopathological examination. Dr. Wissal Abdelli: contributed to data collection. Dr. Soumaya Youssef: contributed to data collection. Dr. Faten Rabhi: contributed to data collection.

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