

## Case report

### A rare type and an unusual location of squamous cell carcinoma with bone invasion



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#### Abstract

Verrucous carcinoma (VC) is an uncommon, distinct type of well-differentiated squamous cell carcinoma in which metastasis is rare. It is locally aggressive and often affects deep structures such as tendons, muscles and bone in which invasion remain rare. Verrucous carcinoma is commonly misdiagnosed as a wart or chronic infection for months or years. We report a case of a 85-year-old woman with a verrucous carcinoma developing in an intertriginous area of the foot with bone invasion.

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## Introduction

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Verrucous carcinoma is a rare variant of squamous cell carcinoma (SCC). It is characterised by a locally aggressive malignancy and a low incidence of metastasis. The location in intertriginous areas of the foot is exceptional (1) and bone invasion remain rare.

## Patient and observation

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A 85-year-old woman with 2 years history of intertoe intertrigo of her right foot, presented a painful and hyperkeratotic tumor of this region that appeared 3 months ago, initially treated by oral antibiotic and antifungal treatment without improvement. The clinical examination revealed intertoe intertrigo and a tumor of 2cm, well defined with warty surface and a foul-smelling discharge, located in the last intertoe space of the right foot (Figure 1). Dermoscopy of the lesion showed papillomatous appearance, keratin deposit, peripheral linear vessels and hemorrhagic suffusion (Figure 2). No palpable lymphadenopathy was noted. After performing biopsy, the lesion was diagnosed as verrucous squamous cell carcinoma (Figure 3). Standard radiographs did not show any bony involvement (Figure 4). Laboratory test results were normal. Human papilloma virus viral typing was negative and no local or distant metastasis was detected. An amputation of the fifth right toe with excision of the lesion were performed (Figure 5). Five months after the initial surgery, outcome was marked by the recurrence of the lesion on the fourth right toe (Figure 6) with opposite bone lysis (Figure 7). An amputation of the fourth right toe was performed. Histologic examination revealed it to be a well-differentiated and infiltrant squamous cell carcinoma with bony involvement. The surgical margin was

involved by the tumor. An amputation of the right forefoot was made.

## Discussion

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Verrucous carcinoma is a low-grade variant of squamous cell carcinoma that is locally aggressive. Clinically it is manifests as a verrucous exophytic tumor, however, it may showed hyperkeratosis, ulceration or a malodorous discharge [1]. Verrucous carcinoma appears frequently in three major sites (anourgenital, oroerodigestive and planter areas) and rarely in other sites. The aetiology of verrucous carcinoma remains less clear, but it can develop in areas of chronic inflammation including ulcers, abscesses and sinuses [2]. Human papilloma virus (HPV) has been associated with this tumour and specifically HPV types 11 and 16 have been described in plantar lesions [3]. Location of verrucous carcinoma in the intertoe space still very rare and can be explained by continuous maceration [4] (as illustrated in our case). Differential diagnoses in our case include verruca vulgaris and deep mycosis, hence the interest to obtain a biopsy including deep dermis and the subcutaneous layer to determine the accurate diagnosis. Histological features of verrucous carcinoma include a papillomatous surface and broad, blunt tongues of epithelial tissue extending into the dermis, few cytological atypia, mitoses are usually limited to the basal layer and are few in number, presence of neutrophils [5], which makes difficult the distinction with psedoepitheliomatous hyperplasia and common wart [6]. The prognosis of verrucous carcinoma (VC) is often favorable but local invasiveness and metastatic potential have led to surgical excision being the recommended management [7]. Verrucous carcinoma often affects deep structures such as tendons, muscles and bone in which invasion remain rare. Ho Min Lee *et al.* reported an unusual case of VC of the foot showing bone invasion [5]. In

this case amputation is recommended to treat an aggressively invasive lesion [8].

## Conclusion

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Verrucous carcinoma is a rare entity of squamous cell carcinoma whose clinical, topographical and therapeutic characteristics must be known to allow adequate management. The location in intertriginous areas of the foot remains exceptional and we must especially think about the diagnosis when tumor develop in areas of chronic inflammation (in our case verrucous carcinoma on intertoe intertrigo).

## Competing interests

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The authors declare no competing interests.

## Authors' contributions

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All the authors have read and agreed to the final manuscript.

## Figures

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**Figure 1:** tumor of 2cm, with warty surface located in the last intertoe space of the right foot

**Figure 2:** dermoscopy showing papillomatous appearance (red arrow), hemorrhagic suffusion (green arrow), yellowish appearance (yellow arrow) peripheral linear vessels (blue arrow)

**Figure 3:** microscopic features of verrucous carcinoma: (A) epithelial tumor with hyperkeratosis and parakeratosis (HES G

x 50); (B) basal mitotic figures (HES G x 400); (C) minimal atypia of the basal cell (HES G x 200)

**Figure 4:** radiography showing no bony involvement

**Figure 5:** amputation of the fifth right toe with excision of the lesion

**Figure 6:** recurrence of a warty lesion on the fourth right toe

**Figure 7:** radiography showing a bone lysis of the proximal phalange of fourth right toe

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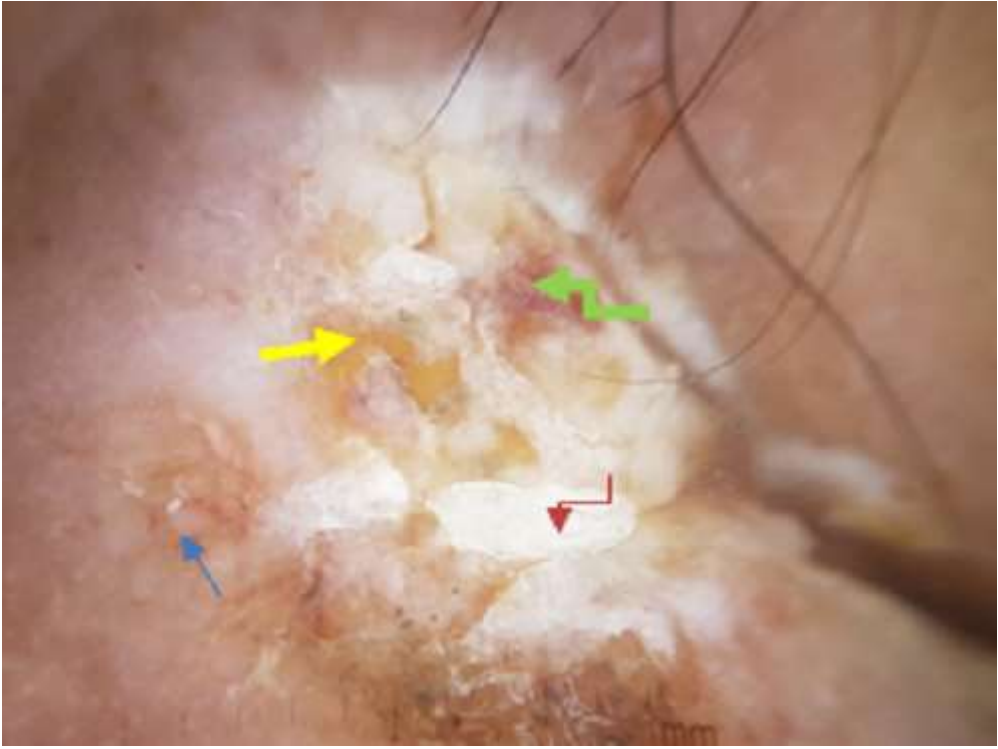
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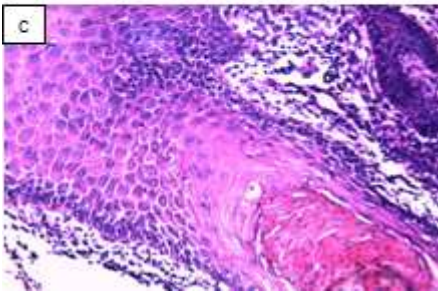
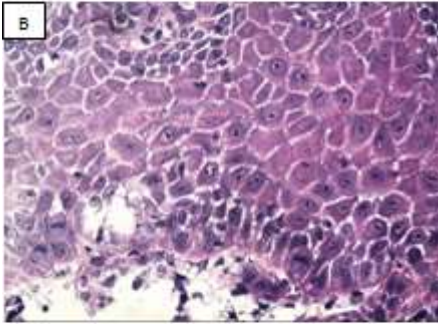
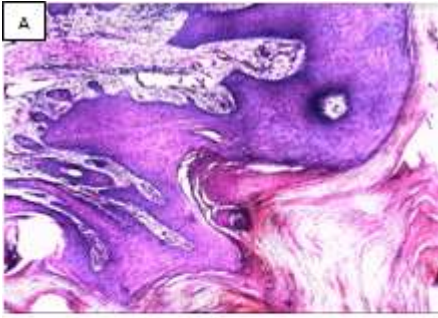
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**Figure 1:** tumor of 2cm, with warty surface located in the last intertoe space of the right foot



**Figure 2:** dermoscopy showing papillomatous appearance (red arrow), hemorrhagic suffusion (green arrow), yellowish appearance (yellow arrow) peripheral linear vessels (blue arrow)



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**Figure 4:** radiography showing no bony involvement



**Figure 5:** amputation of the fifth right toe with excision of the lesion



**Figure 6:** recurrence of a warty lesion on the fourth right toe



**Figure 7:** radiography showing a bone lysis of the proximal phalange of fourth right toe