

POST TRAUMATIC SQUAMOUS CELL CARCINOMA OF THE NAIL BED

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ABSTRACT

Squamous cell carcinoma of the nail bed is a rare malignant tumor. The highest incidence occurs in the fingernails of the hand, but involvement of the toenails is also possible. Subungual squamous cell carcinoma often resembles to other more common benign lesions, such as fungal infections, onychomycosis, or viral warts, which explains the frequently delayed diagnosis of this tumor. We report the case of a mason with a subungual squamous cell carcinoma of the right hallux that had developed in a chronic post-traumatic lesion, without bone invasion. Treatment consisted of toe amputation. Further attention to chronic non-healing nail bed lesions is needed.

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1. Introduction

Squamous cell carcinoma of the nail bed is a rare malignant tumor observed among men above 50 years old [1]. It affects mostly the fingers rather than the toes [1]. Multiple predisposing factors, including chronic paronychia, HPV infection, radiation or sun exposure, trauma, and congenital ectodermal dysplasia, have been identified in the literature [2]. Its resemblance to various common nail diseases and the lack of specific clinical signs or symptoms often lead to a wrong diagnosis [3]. Delayed diagnosis or inappropriate management may increase the likelihood of disease progression. We report a case of post traumatic SCC of the nail bed of the toe treated with amputation.

2. Case report

A 61-year-old man, a former builder, presented with a non-painful but non-healing sub-ungual ulceration over the right big toe, since 6 months.

He gave a history of gastric non-Hodgkin lymphoma that was treated with gastrectomy and chemotherapy, in remission for 28 years, and Hodgkin's lymphoma treated with chemotherapy 7 years ago.

He was treated with topical antibiotics and antifungal drugs, several times, but there was no improvement.

Two years back, the patient had a trauma to the right big toe by a sharp object following an unreported occupational injury which led to an unhealed ulcer.

Cutaneous examination revealed an ulcer of 1 cm × 0.7 cm size over the right hallux nail bed with onycholysis and subungual hyperkeratosis (Figure 1).

A biopsy of the subungual lesion revealed a proliferation of atypical keratinocytes, organized in cords and nests and twisting around horn pearls, suggestive of a squamous cell carcinoma of the nail bed of the right big toe (Figure 2, 3). There was no bone involvement on radiography. The clinical and radiological staging did not show a satellite lymph node or any secondary location. The patient underwent complete excision of the tumor with an inter-phalangeal amputation of the big toe.

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The pathological examination of the surgical specimen confirmed the diagnosis of squamous cell carcinoma with infiltrative pattern and deep extension. There was neither bone invasion nor tumoral emboli. Surgical margins were tumor free. The postoperative course was marked by a rapid healing (Figure 4).



Figure 1. Ulcer of the nail bed of the right big toe with onycholysis and subungual hyperkeratosis

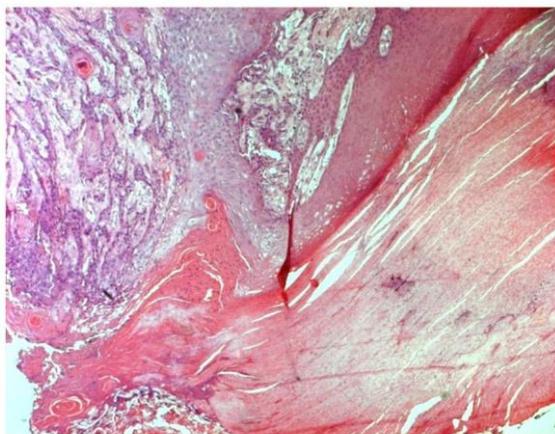


Figure 2. Lesion of the nail plate made with epidermal proliferation massively infiltrating the dermis. (HEx50)

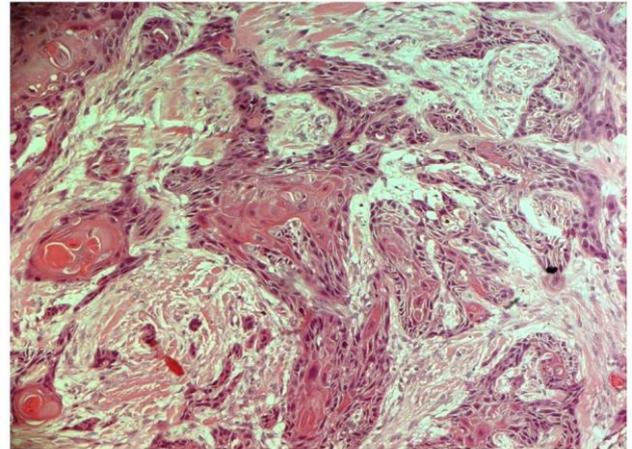


Figure 3. The tumor is formed of cords and clusters composed of atypical keratinocytes, wrapped around horny globes. (HEx100)



Figure 4. Clinical aspect of the right toe after interphalangeal amputation

3. Discussion

SCC of the nail bed is a relatively rare disease with little documentation [1]. Trauma, chronic paronychia, chronic solar irradiation, X-irradiation, burn scars, and chemical or viral exposure are considered risk factors for the development of SCC [2]. Our patient had a trauma to the big toe due to an occupational injury leading to an unhealed ulcer, which was suspected to be a predisposing factor.

It is, therefore, important to report any work-related injury, even a minor one, to be eligible for compensation in case of a subsequent complication. Trauma has previously been suggested as one of the aetiological factors for SCC [4]. Numerous types of trauma have been identified in connection with subsequent basal cell carcinoma formation [5]. Noodleman and Pollack reported a 7.3% incidence in a study of 1,774 patients in which burns, sharp and blunt trauma, chicken pox, and vaccine scars were designated as trauma [5].

There have been some suggestions about the mechanism of squamous cell carcinoma developing from a scar or after trauma. It has been accepted that continuous irritation was a predisposing factor and repeating ulceration of scars, particularly in joints, could result in neoplastic changes [6].

Unlike Bowen's disease and SCC of the fingernails, a causative role of human papillomavirus (HPV) infection in the development of in situ and invasive subungual SCC of the toe seems unlikely [7].

Clinical manifestations are non-specific including chronic intermittent pain, nail deformity, subungual hyperkeratosis, ulcers, and complicated infections [1]. Therefore, it can be often misdiagnosed as onychomycosis, pyogenic granuloma, subungual wart, glomus tumour, ingrown nail, subungual exostosis and kerato acanthoma [8].

Forty years ago, it was reported that the delay in diagnosis of SCC of the nail bed was 4 years on average, which is a considerable hazard for a patient's well-being [3].

Although conditions may be improved nowadays, practitioners must remain vigilant to avoid delayed diagnosis. Thus, a detailed medical history and adequate physical examination should constantly be performed when dealing with suspicious malignant lesions.

Biopsy of recurrent and persistent lesions and non-healing ulcers evolving for more than one month is important for early diagnosis of SCC and to preserve the maximal function of the foot [9].

Treatment modalities depend on the involvement of the tumor. Amputation can be avoided and conservative surgery may be sufficient if malignancy is detected early. Mohs micrographic surgery is an ideal model, providing a high possibility of curing the disease and maximally preserving the surrounding healthy tissue [10]. However, this technique is not always available due to practical limitations in its performance. As for our patient, despite the absence of bone and nodal involvement, an amputation was performed because of the residual tumor in depth after a first surgical removal of the lesion.

4. Conclusions

We present this case of a rare occurrence of a post-traumatic SCC of the nail bed of the toe, secondary to an occupational injury in a patient with a history of neoplasia, who was treated by amputation despite the relatively early diagnosis and the absence of bone and nodal involvement. This case report highlights the need to perform a biopsy in all patients with chronic nail disease that fails to respond to conventional treatment for a reasonable period of time as an underlying malignancy can mimic benign nail pathology, and emphasizes the importance of reporting even minor work-related injuries.

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