Case Report

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Nail tumor after mechanical trauma

Tumor ungueal após trauma mecânico

RESUMO

Relatado caso de paciente de 62 anos de idade que desenvolveu massa nodular erosiva no aparelho ungueal após trauma em caçada, diagnosticada como melanoma amelanótico do aparelho ungueal. Esta lesão é frequentemente diagnosticada erroneamente, permanecendo sem tratamento adequado por longos períodos. As taxas de erro diagnóstico são descritas como sendo de até 85% nos casos em que o médico não possui especialização em dermatologia.

Palavras-chaves: melanoma; melanoma amelanotico; ferimentos e lesões.

ABSTRACT

This article describes the case of a 62-year-old patient who developed an erosive nodular mass on the nail apparatus after receiving a trauma during a hunting incident. The lesion was initially diagnosed as an amelanotic melanoma of the nail apparatus, illustrating the fact that this type of lesion is often misdiagnosed – up to 85% of the time if the physician lacks dermatological expertise –and remains untreated for prolonged periods.

Keywords: *melanoma; melanoma, amelanotic; wounds and injuries.*

A 62-year-old male was referred to us with a 20-year history of a nodular, ulcerated mass on the 2nd finger of the left hand. The patient, a professional lifeguard in Marina di Ravenna, was otherwise healthy.

The mass had developed as a slowly growing nodule, the result of a hunting injury that had received multiple treatments over the years. The last therapy the patient went through before his visit to us was hyperbaric oxygen.

The lesion presented as a 2.5 × 1.7 cm highly vascularized ulcerated mass, covered with a mix of fibrotic and necrotic tissue (Figure 1).

Since an x-ray of the finger showed bone resorption, a nail bed biopsy was performed. The histopathologic results of the biopsy (Figure 2) revealed a tumor composed of cells with abundant eosinophilic cytoplasm, pleomorphic nuclei, prominent nucleoli, and abundant atypical mitotic figures infiltrating the surrounding soft tissues and the distal phalanx. Immunostaining for S-100 protein was positive, while Melan-A, HMB-45, CD 34, desmin, and myogenin were negative (Figure 3). A distal phalanx disarticulation was performed, and amelanotic melanoma with ulceration was diagnosed, with an estimated 3.1 mm Breslow depth (40; N0 M0).

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Figure 1: Clinical features of the nodular, ulcerated mass located on the 2nd finger of the left hand

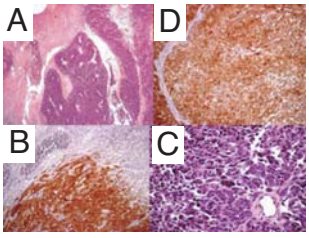

Figure 2: A, B, D Histologic aspects: Tumor composed of cells with abundant eosinophilic cytoplasm, pleomorphic nuclei, prominent nucleoli and abundant atypical mitotic figures (H&E 20X). **Figure 2C** Strongly positive immunohistochemical staining for S-100 protein indicates malignant melanoma (original magnification × 400)

The patient underwent lymph node sentinel biopsy and a whole body CT scan examination, with negative results for metastases or other locations of the disease. Twelve months after the diagnosis, the patient developed auxiliary node recurrences (40; N1; M0) and underwent auxiliary dissection. Adjuvant interferon therapy followed, with good tolerance of the drug.

Amelanotic nail apparatus melanoma (NAM) is often misdiagnosed and left untreated for prolonged periods of time. In fact, misdiagnosis rates are reported to be as high as 85% in the case of non-Dermatologist physicians.[3] Because of this delay, the survival rate of patients with NAM is significantly lower than that for other forms of melanoma, decreasing from an 80% 5-year survival rate at other sites to a 10-30% 5-year survival rate for NAM.[1,3]

We do not know, in this particular case, whether the melanoma developed in traumatized tissue or if the trauma – as reported by the patient – was unrelated. Trauma is considered a predisposing factor for the development of NAM, since the tumors are more common in the fingers most subjected to traumas, and the patient's history often refers to a trauma preceding the development of the lesion.[4] However, there are no data that prove the role of trauma in the development of NAM. As a matter of fact, NAM may develop before the trauma, thus producing a weaker nail that is less resistant to mechanical injuries. A study of 33 cases of nail melanoma could not confirm the influence of trauma on its primary pathogenesis, but concluded that trauma to the clinically apparent tumor was a significant prognostic factor for both recurrence-free survival and overall survival.[5]

Moreover, our patient had been treated with hyperbaric oxygen therapy during the year before the melanoma was diagnosed. Some studies report that hyperbaric oxygen might have cancer growth enhancing effects that lead to the proliferation of malignant cells and angiogenesis in a malignant tumor;[6] others contradict this hypothesis.[7]

We also wondered whether surgical trauma due to biopsy may have worsened our patient's prognosis, since his NAM remained dormant – without metastases – for many years, and only started to metastasize after surgery. Recent studies, however, suggest that incisional biopsies of malignant melanomas do not negatively influence prognosis; they are currently recommended for the histopathologic diagnosis of tumors in acral locations.[8]

In conclusion, clinicians should remember that an erosive nodular mass in the nail may be an amelanotic melanoma, and since early diagnosis is essential for a good prognosis,[1] a timely biopsy should be performed. ●

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