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Locally Invasive Amelanotic Melanoma of the Nail Apparatus: Report of an Exuberant and Rapidly Evolving Case

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Dear Editor,

A 72-year-old female patient was referred for dermatological evaluation due to a tumoral lesion located on the nail of the right first finger, which had grown over a period of 3 months and was initially diagnosed as onychomycosis and local trauma. Upon examination, an exophytic, erythematoviolaceous lesion with a friable and bleeding surface was observed, completely substituting the nail unit (FIG. 1). Ipsilateral palpable adenomegaly was also identified in the cubital fossa.

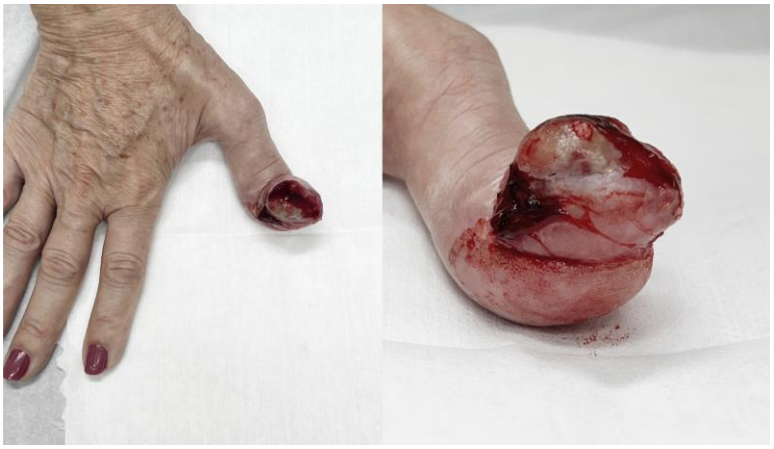

FIG. 1. **Clinical presentation of the lesion on the nail unit, from different angles.**

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An incisional biopsy was taken, revealing an invasive non-pigmented epithelioid melanoma in the vertical growth phase, with a Breslow thickness of 2.7 mm.

Radiographic imaging of the affected hand demonstrated slight bone remodeling of the distal phalanx. Ultrasound of the nail unit showed an expansive infiltrative and exophytic lesion measuring approximately 2.6 cm × 2.5 cm × 1.9 cm, with significant radiating arterial flow within.

The patient underwent an amputation of the distal phalanx and the middle third of the proximal phalanx of the right first finger. Histopathology showed an ulcerated subungual invasive melanoma, acral pattern, in the vertical growth phase, invading the dermis, subcutis, and cortical and trabecular bone of the distal phalanx, measuring 19 mm in thickness, with a mitotic index of 11/mm² and mild peritumoral and intratumoral lymphocytic infiltrate. The lesion had no signs of regression, satellitosis, perineural or vascular invasion. Surgical margins were free (FIG. 2A). Immunohistochemistry was negative for cytokeratins (AE1/AE3/PCK26) and positive for SOX10, MelanA, PRAME1, S100, and HMB45 (FIG. 2B, 2C & 2D). The sentinel lymph node biopsy in the right cubital fossa and axilla revealed lymph nodes with no evidence of metastasis and immunohistochemistry was negative for S100 and MelanA.

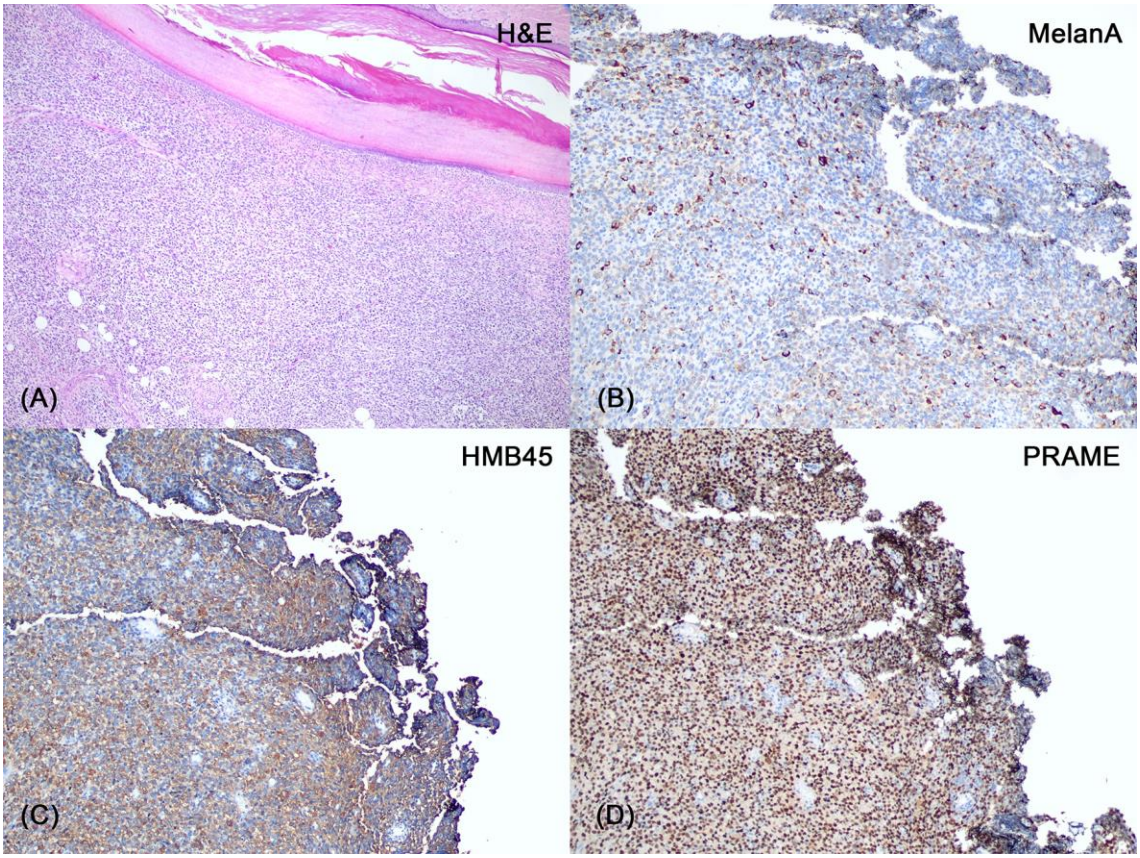

FIG. 2. **(A): histopathology, 40x, hematoxylin and eosin. (B), (C) and (D): immunohistochemistry, 200x, MelanA, HMB45 and PRAME markers, respectively.**

Imaging staging showed no cranial, thoracic, abdominal, or pelvic lesions. The patient had a satisfactory postoperative recovery and continued to be monitored by Dermatology and Oncology services for follow-up.

1. Discussion

Melanoma is the most severe form of skin cancer, and its incidence increases with age, particularly among the white population [1]. The amelanotic variant is a rare subtype, often confused with benign lesions such as pyogenic granulomas and hemangiomas [2]. Its diagnostic difficulty is partly due to the variable histopathological features and the absence of typical pigmentation, often leading to errors and delays in diagnosis [3].

Nail melanoma accounts for 0.7%-8% of all melanoma cases. Among these, 15%-25% are amelanotic, and approximately 90% of cases occur in the first digit of the hands or feet [4].

Wide surgical excision is the first-line therapy for primary melanoma, resulting in a 90% cure rate [5]. Therapeutic lymph node dissection (TLND) is recommended for local or regional metastases to reduce the probability of recurrence; however, its significance remains uncertain as no significant difference was noted for those who did not undergo TLND [6].

This case illustrates the exuberant presentation of an amelanotic nail melanoma with locally aggressive behavior and rapid growth, demonstrating the importance of considering melanoma among the differential diagnoses of non-pigmented acral lesions.

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