Dermoscopy revealing an amelanotic subungual melanoma masked as contact dermatitis

Sir,

An otherwise healthy 62-year-old woman presented with an acute itchy eruption on her right (dominant hand) middle finger after using a gel nail. There was a history of nail trauma two years back, following which she observed alterations of the nail plate for which she filed her nail regularly. She used an artificial nail for the same reason and developed skin lesions a few days later. Cutaneous examination revealed erythema, desquamation and yellow to red crusts on the finger tip and periungual region along with small vesicles on the dorsum of the middle finger. There was loss of central part of the nail plate [Figure 1]. Dermoscopic examination showed a combination of milky white and pinkish structureless areas (milky-red areas), hemorrhages, patchy white scales, yellow crusts and multiple well-demarcated round/oval yellowish structures (clinically corresponding to small vesicles) [Figure 2]. A real-time herpes simplex virus polymerase chain reaction was negative. Based on the history and examination a clinical diagnosis of contact dermatitis was considered. Topical treatment with betamethasone dipropionate 0.5 mg/g and gentamicin sulfate 1 mg/g cream was prescribed. Patient was followed up to ensure that the dermatitis was responding to therapy and to rule out underlying tumor as a cause of nail plate destruction. Two weeks later, it was observed that though the eczema resolved, the absence of nail plate persisted. On dermoscopic examination, there were helical (corkscrew), polymorphous (helical/corkscrew, looped/hairpin and linear-irregular/serpentine) vessels, milky-red and yellowish-orange structureless areas [Figure 3]. A nail matrix biopsy was performed and revealed the presence of an amelanotic subungual acral lentiginous melanoma [Figure 4]. Regional lymph nodes were normal. Subsequently, the distal phalanx was amputated. An imaging staging with positron emission tomography – computed tomography (PET-CT) scan and a selective sentinel lymph node biopsy performed resulted in a diagnosis of stage IIIB (T2bN2aM0) subungual melanoma according to the eighth edition of the American Joint Committee on Cancer.[1]

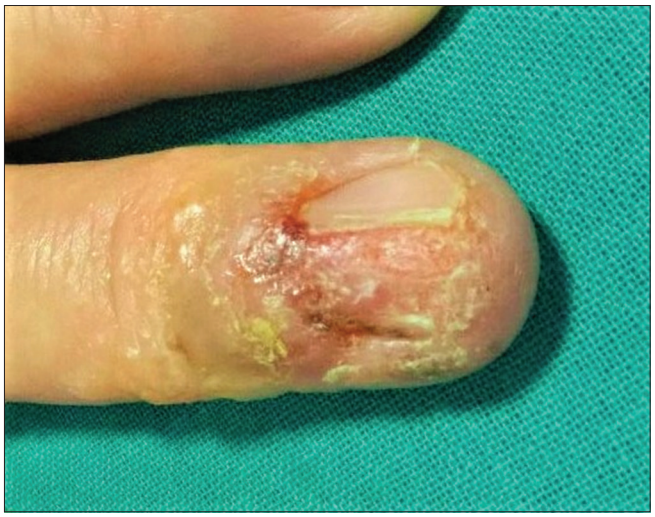

Figure 1: Erythema, desquamation and yellow to red crusts on the finger tip and periungual region along with small vesicles on the dorsum of the middle finger and absence of central part of the nail plate.

Subungual melanoma is a rare subtype of melanoma arising within the nail matrix which represents approximately 2% of cutaneous non-sun-induced melanomas in the western world and up to 75% in Africans, 10% in Japanese and 25% in the Chinese.[2] No specific figures are available from the Indian subcontinent.[2] Almost two out of three subungual melanoma are lentiginous acral melanoma; however, other melanoma variants may be observed.[3] Subungual melanoma is often associated with *c-KIT* mutations, contrasting with other types of melanoma which are linked to *BRAF* mutations. The mean age of onset is at least ten years later than common melanomas.[3,4]

Diagnosing subungual melanoma in its early stages is a challenge for dermatologists, which may lead to a late diagnosis resulting in a poor prognosis.[4] Subungual melanoma is usually defined as an acquired, broad, triangular melanonychia with the presence of nail plate fissuring and extension of pigmentation to periungual skin (Hutchinson's sign).[2-4] Dermoscopic examination may show a brown band with irregular longitudinal lines of different color and thickness as well as loss of parallelism.[4] The presence of a parallel ridge pattern

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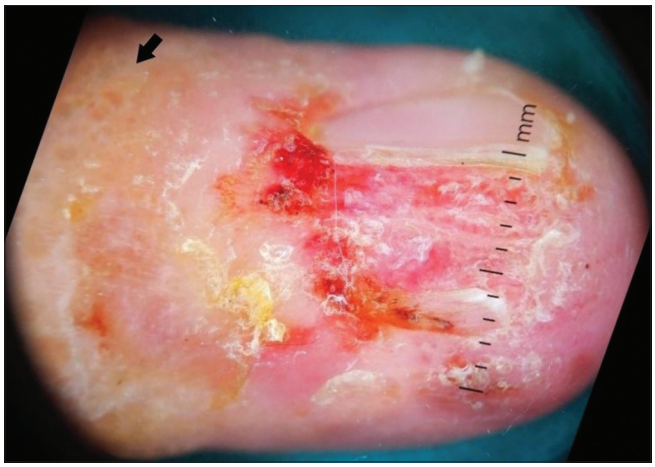

Figure 2: Polarized dermoscopy examination (×10) of acute eczema of the fingertip at the first medical examination: Milky white and pinkish structureless areas (milky-red areas), hemorrhages, patchy white scales and yellow crusts, well-demarcated round/oval yellowish structures (clinically corresponding to small vesicles)* and absence of the central part of nail plate. *Arrow

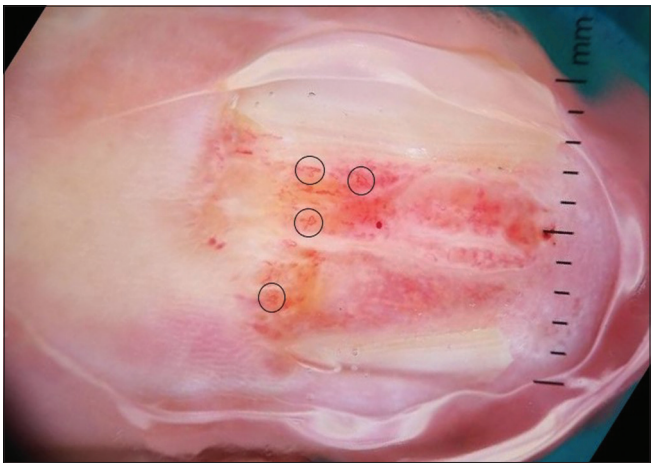

Figure 3: Polarized dermoscopy examination (×10), two weeks later showing helical (corkscrew)*, polymorphous (helical/corkscrew, looped/hairpin and linear-irregular/serpentine) vessels, a combination of milky white and pinkish structureless areas (milky-red) and yellowish-orange structureless areas and absence of the central part of the nail plate. *Circles

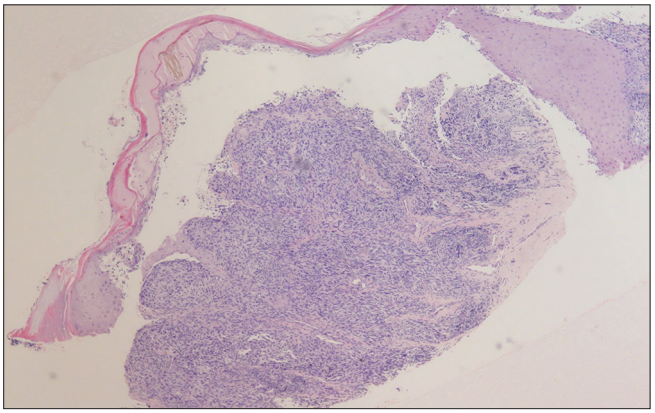

Figure 4a: Spindle-shaped, atypical melanocytic cells proliferation infiltrating the dermis (H and E ×100)

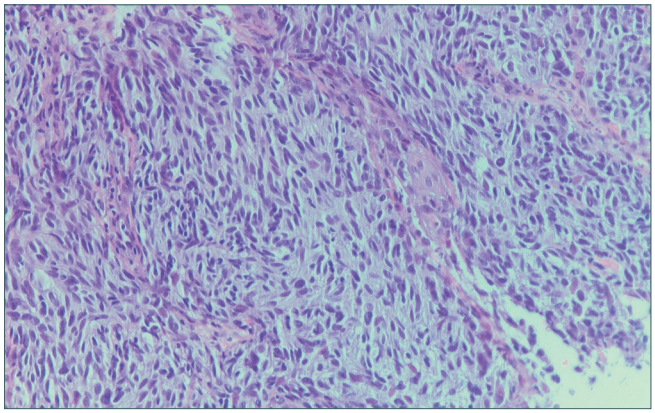

Figure 4b: Spindle-shaped, atypical melnocytic cells proliferation infiltrating the dermis (H and E x200)

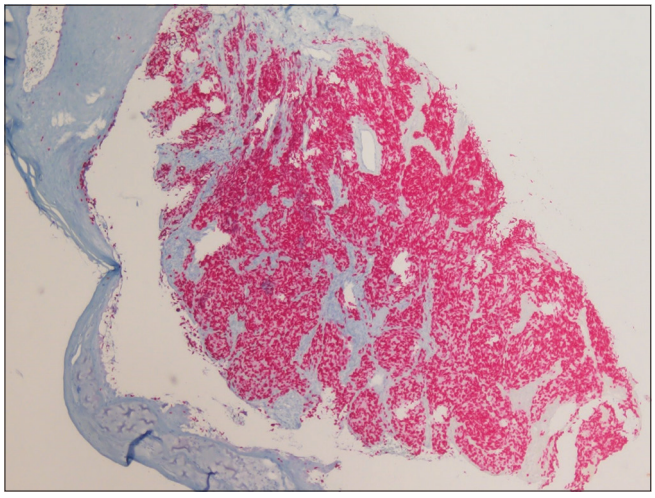

Figure 4c: SOX10 immunohistochemical staining of the invasive acral melanoma showing strong nuclear positivity (SOX10 ×100)

in the hyponychium is an additional clue which increases the suspicion of melanoma. However, between 25% and 33% of subungual melanoma are amelanotic which complicates the diagnosis even further.[3] Absence of melanonychia has been associated with longer diagnostic delay in patients with subungual melanoma. Dermoscopic features of amelanotic melanoma are blue-white veil, scar-like depigmentation, multiple blue-gray dots, irregularly shaped depigmentation, irregular brown dots/globules, five–six colors and predominant central vessels.[5] Guidelines giving specific dermoscopic clues for amelanotic subungual melanoma are lacking. Dermoscopic features of normal nail include a non-pigmented nail bed and plate and a nail fold with a homogeneous capillary (hairpin-shaped vessels) distribution without morphological atypia.[6] In the present case, features like corkscrew and polymorphous vessels together with milky-red areas, which are diagnostic of amelanotic melanoma at other locations, led to suspecting the

diagnosis.[5] Although these findings are not seen frequently, but when present, they are highly suggestive of melanoma.[7] Milky-red areas correlate with a positive predictive value of 77.8%.[7] However, they can also be seen in basal cell carcinoma, Spitz nevus, pyogenic granuloma and even in inflammatory lesions. Cutaneous melanoma metastasis and non-melanoma skin cancer should be considered in the differential diagnosis of polymorphous and corkscrew vessels.[7] In our opinion and experience, dermoscopic features described in amelanotic melanoma at other locations are noted to be present in amelanotic subungual melanoma also. However, more reports are necessary to substantiate this finding. Dermoscopic examination is of utmost importance in diagnosing early stages of subungual melanoma.

Onychomycosis, trauma, subungual hematoma, onychodystrophy and pyogenic granuloma are other differentials that can cause delay in the diagnosis and worsening of the prognosis. In the present case, the patient consulted for a contact dermatitis which masked the subjacent subungual melanoma hidden by the use of artificial nails. In recent years, there has been an increase in the use of artificial nails resulting in a higher incidence of contact dermatitis.[8]

In conclusion, subungual melanoma is a diagnostic challenge with crucial prognostic implications. A considerable proportion of cases are amelanotic which makes the diagnosis even more difficult. Dermoscopic examination, showing polymorphic and irregular vessels, may be extremely helpful. Contact dermatitis mask its presentation, particularly in users of artificial nails and it is of vital importance to make the general population aware that any destruction of the nail plate should be evaluated by a dermatologist before covering it with an artificial nail.

Declaration of patient consent

The patient's consent is not required as the patient's identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

Ignasi Marti-Marti, Ramon Pigem, Maria Margarita Narvaez, Llúcia Alós[1], Susana Puig

Departments of Dermatology, [1]Pathology, Melanoma Unit, Hospital Clínic, Universitat de Barcelona, Barcelona, Spain

Corresponding author:
Prof. Susana Puig,
Department of Dermatology, Hospital Clínic de Barcelona, Carrer de Villarroel, Barcelona, Spain.
spuig@clinic.cat/susipuig@gmail.com

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Dermoscopic features of clofazimine-induced pigmentation in a borderline tuberculoid leprosy plaque

Sir,

A 30-year-old male diagnosed with borderline tuberculoid Hansen disease presented with a new-onset redness over the preexisting lesion since one month. It was not associated with pain or any other systemic complaints. He was on multibacillary multidrug therapy, consisting of rifampicin, dapsone and clofazimine, for the past three months. Cutaneous examination showed a solitary, well-defined, dusky erythematous non-tender

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