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PHOTOLETTER TO THE EDITOR

Exogenous pigmentation of the sole mimicking *in situ* acral melanoma on dermoscopy

Francesco Lacarrubba, Federica Dall'Oglio, Franco Dinotta, Giuseppe Micali

Dermatology Clinic, University of Catania, Italy

Corresponding author:
Giuseppe Micali, MD, Dermatology Clinic, University of Catania, Italy, Azienda O.U. Policlinico-Vittorio Emanuele, Via Santa Sofia, 78 - 95123, Catania, Italy. E-mail: *cldermct@nti.it*

Abstract

The *parallel ridge pattern*, characterized by a parallel band-like pigmentation of the ridges of the surface skin markings, represents the most important dermoscopic feature of *in situ* acral melanoma. A case of a young girl who showed a plantar pigmented brown macule likely due to prolonged contact with black rubber shoes, revealing a *parallel ridge pattern* on dermoscopy, is reported and discussed. Although *parallel ridge pattern* is highly suspicious of early melanoma, exogenous pigmentation should be considered as differential diagnosis in case of rapid onset acral pigmented macules. (*J Dermatol Case Rep*. 2012; 6(3): 100-101)

Key words:

dermoscopy, dermatoscopy, pigmentation, melanoma, plantar, videodermatoscopy

Dermoscopy is an *in vivo* non-invasive technique useful for differential diagnosis of several pigmented and non-pigmented lesions, including those located in the palmo-plantar regions. In particular, the so-called *parallel ridge pattern*, characterized by a parallel band-like pigmentation of the ridges of the surface skin markings, represents the most important dermoscopic feature of *in situ* melanoma localized in acral volar skin.[1,2] Histopathologically, this pattern corresponds to proliferation of atypical melanocytes in the crista profunda intermedia, an epidermal rete ridge situated under the surface ridge.[1] Dermoscopy sensitivity and specificity of the *parallel ridge pattern* in melanoma *in situ* were found to be 86% and 99%, respectively.[1] However, this pattern has been reported in other benign conditions, such as occupation-related pigmentation due to para-phenylenediamine, acral pigmented macules associated with Peutz-Jeghers syndrome, hyperpigmentation due to 5-fluorouracil, acral subcorneal hemorrhage and

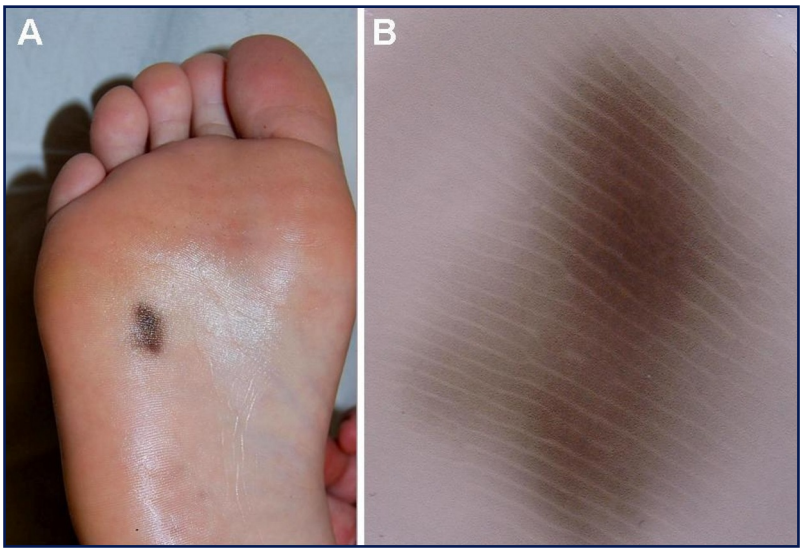

Figure 1

Clinical (A) and dermoscopic (B) aspect of the pigmented macule localized on the right sole.

pigmented warts.[3,4] We report a case of a young girl who presented with an exogenous pigmented plantar macule revealing a *parallel ridge pattern* on dermoscopy, mimicking an *in situ* acral melanoma.

An 8-year-old Caucasian female came to our observation for the evaluation of an asymptomatic pigmented macule of the right sole. The child and her parents where unable to identify when the lesion first appeared. Clinical examination revealed the presence of an ovalar brown macule, measuring approximately 1.4 x 0.9 cm in diameter, with blurred margins (Fig. 1A). Dermoscopy showed the presence in the entire lesion of a brown pigmentation localized along the ridges of the superficial skin markings (Fig. 1B). Neither vigorous cleaning with alcohol nor 1-week application of 50% urea ointment resulted in any change of the lesion. Histopathology of a punch biopsy showed a normal epidermis with no evidence of atypical melanocytic proliferation (Fig. 2A). HMB-45 and S-110 staining were negative. A more accurate medical history revealed the use, during the summer, of black rubber sandals (flip-flop type), therefore a diagnosis of exogenous pigmentation was suspected. The child was told to suspend the use of the sandals and a 1-month follow-up showed complete resolution of the lesion. A 1-year follow-up did not reveal any change (Fig. 2B).

To our knowledge, this is the second case of exogenous pigmentation showing a *parallel ridge pattern* on dermoscopy; the other case regards a patient working for a chemical company involved handling para-phenylenediamine.[5] In our case, the macule was likely due to exogenous pigmentation of the epidermis caused by prolonged plantar contact with the black rubber shoes. Interestingly, the pigmentation was localized in a foot pressure point. Although histopathologic examination did not reveal the presence of any exogenous pigment, likely dissolved during tissue processing, the diagnosis was based on several factors including past medical history revealing the use of black sandals, absence of melanocytic proliferation in the biopsy specimen and spontaneous disappearance of the macule after 1-month, with negative 1-year follow-up.

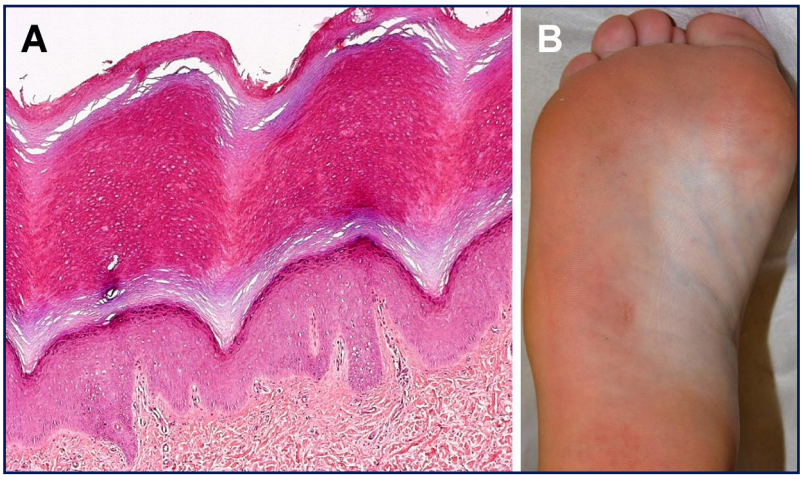

Figure 2

(A) Histopathology of the pigmented macule with no evidence of atypical melanocytic proliferation. (B) Clinical aspect at a 1-year follow-up.

In conclusion, although *parallel ridge pattern* is highly suspicious of early melanoma, exogenous pigmentation should be considered as differential diagnosis in case of rapid onset acral pigmented macules.

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