

Atypical dermoscopic presentation of an acral congenital melanocytic nevus in an adult: parallel ridge pattern and its histologic correlation

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ABSTRACT Acral melanoma is the most frequent subtype in the Asian and Mexican mestizo populations. Dermoscopy is a noninvasive diagnostic technique that helps the differential diagnosis of pigmented skin lesions on acral volar skin.

We, herein, present a case of acral congenital melanocytic nevus with a parallel ridge dermoscopic pattern. Since the parallel ridge pattern in a melanocytic lesion of the acral skin is classically ascribed to melanoma, the present case can be definitely labeled as “atypical” and worth of being elucidated in its histopathological correlates.

Introduction

Acral (lentiginous) melanoma (ALM) is the most prevalent subtype in the Asian and Mexican mestizo populations [1,2]. Acral lentiginous melanoma is most often diagnosed at an advanced stage and associated with a poor outcome [2-4]. Dermoscopy is a noninvasive diagnostic technique that allows early recognition and increases diagnostic accuracy of pigmented skin lesions on acral volar skin [1-8].

Congenital melanocytic nevi (CMN) are defined as melanocytic nevi that are present at birth or become apparent shortly after. Acral CMN tend to show a greater size and a greater variability in color and shape than acquired nevi [1,8]. Therefore, a histopathologic examination is sometimes required for differentiating acral CMN from ALM, especially when the lesion has a large diameter and/or is clinical and dermoscopically atypical. According to previous studies, acral CMN show characteristic dermoscopic features such as a

combination of the crista dotted and parallel furrow patterns [1]; interestingly they tend to fade during childhood [1,5].

Dermoscopically, the parallel ridge pattern is most commonly associated with ALM in situ showing a high sensitivity (86%) and specificity (99%) for its diagnosis [6,7]. Nevertheless, 4-8% of acral CMN do show a parallel ridge pattern [1,8]. We, herein, present a case of acral CMN nevus with a parallel ridge dermoscopic pattern along with its histopathological correlates.

Case presentation

A 37-year-old, male patient, skin phototype IV, while being hospitalized for the treatment of schizophrenia, was seen for a 12 mm, pigmented skin lesion on his plantar arch (Figures 1 and 2). According to the patient's mother, the lesion



Figures 1 and 2. A 12 mm pigmented lesion on the plantar arch. [Copyright: ©2015 Roldán-Marín et al.]



Figure 3. Polarized dermoscopy revealed a polychromatic lesion with a central blue-grey area and dark and light brown colors in the periphery. A central parallel ridge pattern blended with a peripheral lattice-like pattern associated with few asymmetric dots and globules. The furrows at the periphery were relatively devoid of pigmentation. [Copyright: ©2015 Roldán-Marín et al.]

had appeared shortly after birth and had been progressively enlarging in the course of the last years. Under polarized dermoscopy, the melanocytic lesion was polychromatic with a central blue-grey area and dark and light brown colors in the periphery; a central parallel ridge pattern blended with a peripheral lattice-like pattern associated with few asymmetric dots and globules. The furrows at the periphery were relatively devoid of pigmentation (Figure 3).

Based on the large size and the atypical dermoscopic presentation, the lesion was excised. Histologic examination revealed a very bland compound melanocytic neoplasm with clear-cut congenital-like features (Figure 4A). The central area of the lesion was mainly an intradermal combination of type C and dendritic (blue nevus-like) melanocytes (Figure 4B), with a striking acrosyringial and periductal distribution (Figure 4C); the junctional component was mainly peripheral, with regularly arranged nests without cytologic atypia (Figure 4D) and melanin columns under the surface furrows. This last histologic finding was also seen in the crista profunda intermedia (Figures 4D and 4E) under the surface ridge in accordance with the dermoscopic appearance of the lesion. The final histopathological diagnosis was acral compound melanocytic nevus with congenital features.

Discussion

Dermoscopy is a powerful, noninvasive, diagnostic tool, which helps the clinical differential diagnosis between benign and malignant melanocytic lesions on volar skin [1,6,7]. ALM is the most prevalent subtype in Mexican population [2]. It is commonly diagnosed at an advanced stage and associated with a poor outcome [2-4].

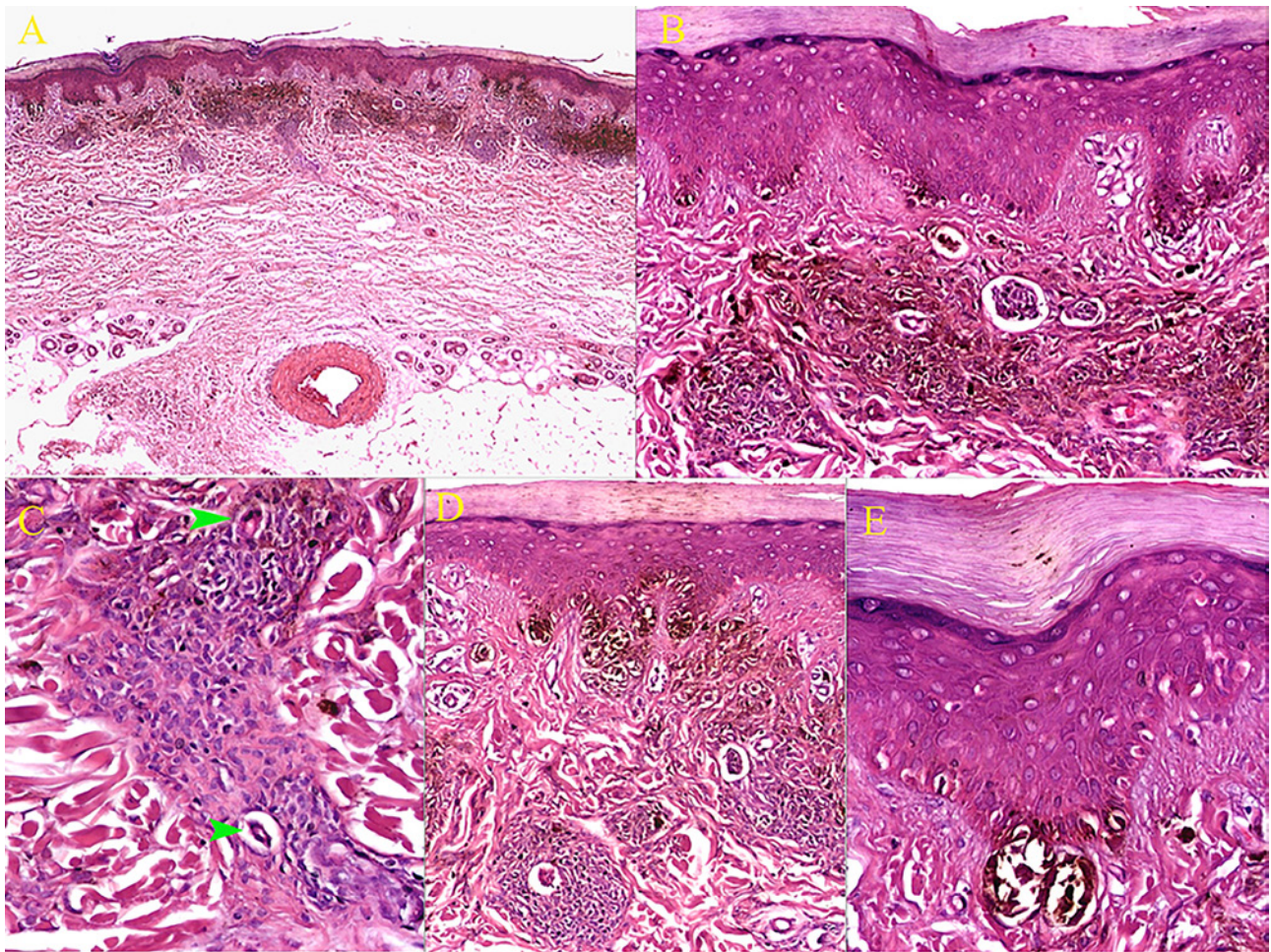


Figure 4. (A) Histopathology (10x hematoxylin & eosin [H&E] stain) revealed a very bland compound melanocytic neoplasm with clear-cut congenital-like features. (B) (40x H&E stain) An intradermal combination of type C and dendritic (blue nevus-like) melanocytes. (C) (40x H&E stain) Striking acrosyringial and periductal distribution. (D) (20x H&E stain) Mainly peripheral regularly arranged melanocytic nests at the dermo-epidermal junction, but areas with melanin columns from melanocytes located in the crista profunda intermedia. (E) (40x H&E stain) Columnar melanin depositions (melanin columns) arrayed under the surface furrow. [Copyright: ©2015 Roldán-Marín et al.]

Dermoscopically, the parallel ridge pattern is highly specific of ALM. However, it has also been described to occur in acral CMN as a relatively rare finding [1,8]. In the latter occurrence, anamnestic data and stable clinicodermoscopic features on digital follow-up support the diagnosis of benignity.

In our case, the lesion was reported as “congenital,” but seemed to have been enlarging even in recent times. This was interpreted as an atypical feature, inasmuch as CMN on acral volar skin commonly tend to fade over years [1,5] or, at least, do not commonly reveal a parallel ridge pattern. Dermoscopically, the pattern was atypical also because it was characterized by pigmentation along the ridges. Furthermore, the patient suffered schizophrenia and could not commit with follow-up evaluation. For these reasons, the final decision was to excise.

Histopathologically, a dermal dendritic cell component was found as responsible for the central bluish area; the striking growth of melanocytes surrounding the ductal compartment of the eccrine sweat glands might be considered as a further histopathological correlate for the central pigmentation

along the ridges (where acrosyringia emerge). It has been recently proposed by some authors that eccrine melanocytic precursor cells may be the source of acral melanomas [8,9]. The junctional component was mainly peripheral and responsible for the lattice-like pattern, a quite common finding in melanocytic nevi of the plantar arch.

Recently, Chuah et al. [10] confirmed that acral congenital melanocytic nevi tend to be larger and more asymmetrical than acral acquired melanocytic nevi. Furthermore, they tend to be polychromatic and approximately 50% have a blue-grey coloration in the central portion of the lesion, which may be associated with the intradermal component [1,10]. Other authors have also recorded a parallel ridge pattern in other benign conditions such as lentiginosis, racial melanosis, melanocytic nevi, drug-induced hyperpigmentation, subcorneal hemorrhage and dye-related pigmentation, particularly in darker skin phototypes [11,12].

Our case is an example of acral CMN with a parallel ridge pattern observed in an adult. Acral CMN may be larger and

more asymmetrical and polychromatic than acral acquired melanocytic nevi, but tend to fade or to become architecturally organized in adulthood. Thus, if the patient is uncertain whether the lesion has recently changed/enlarged and/or if follow-up cannot be completed, histopathological examination may be required. In the final dermoscopic-pathologic evaluation of the case, one must remember that the dermoscopic features of an acral melanocytic lesion are best evaluated at its periphery.

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