

Congenital Melanocytic Naevus with Atypical Pigment Network on Dermoscopy

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Accepted May 20, 2008.

Sir,

Congenital melanocytic naevi (CMN) are pigmented skin lesions that are present at birth (1). CMN are divided into giant and non-giant types. Those measuring more than 20 cm in maximal diameter are defined as giant CMN (2). The non-giant types are divided into medium-sized and small naevi. Small CMN measure less than 1.5 cm in maximal diameter. The lifetime incidence of melanoma in giant CMN is estimated to be between 6.3% (3) and 12% (2). The incidence of melanoma in medium-sized CMN is currently under discussion, although it is probably greater than that in a comparable area of normal skin. Some authors insist that the risk is related to lesion size (4), while other investigators disagree (5). It is supposed that melanomas rarely arise from small CMN (5, 6).

Dermoscopy is a well-established method for improving the clinical diagnosis of pigmented skin lesions. There are various dermoscopic algorithms for the distinction between benign naevi and malignant melanoma. Widely used methods are the three-point checklist (7), CASH algorithm (8), ABCD rule (9), Menzies method (10), 7-point checklist (11), etc.

CASE REPORT

A 23-year-old woman presented with a black nodule on her right upper arm. It had been present since birth and had grown gradually. There had been no antecedent trauma to the lesion. The pigmented macule was asymmetrical, irregularly bordered,



Fig. 1. The pigmented macule was asymmetrical, irregularly bordered, colour-variegated, and measured 9 × 7 mm (clinical view).



Fig. 2. Target structures (left), blue-white structures (centre) and atypical pigment network (right) (dermoscopy).

colour-variegated, and measured 9 × 7 mm (Fig. 1). Dermoscopic findings showed a reticular pattern with typical pigment network (PNW) in addition to dots/globules. Network meshes centred on a dot corresponded to target structures. Atypical PNW was seen partially at the margin of the lesion (Fig. 2). Blue-white structures were also present. Using various dermoscopic algorithms, the dermoscopy scores were 3 on the three-point checklist, 10 on the CASH algorithm, 6.3 on the ABCD rule, and 4 on the 7-point checklist. All of these algorithms, including the Menzies method, suggested the presence of melanoma. Based on these findings, we diagnosed this case as having malignant melanoma arising from a small CMN.

The haematoxylin and eosin (H&E)-stained specimen demonstrated bland naevus cells from the dermo-epidermal junction to the dermis (Fig. 3A). Some congenital pattern features were seen. Namely, the naevus cells showed a tendency to arrange around the skin appendages and there was a clear space in the subepidermal area. Typical PNW on dermoscopy corresponded to regular elongation of rete ridges with basal hyperpigmentation. Atypical PNW on dermoscopy corresponded to irregular elongation of rete ridges with basal melanocytosis (Fig. 3B). These melanocytes were not atypical, but pyknotic. Pagetoid spread was not seen. Blue-white structures corresponded to intradermal nodule of pigmented naevus cells. There were no melanoma cells even though serial sections were inspected.

DNA was extracted from paraffin-embedded tissue sections for genetic analysis. Mutation was detected in BRAF V600E by polymerase chain reaction (PCR) direct sequence analysis. Multiplex ligation-dependent probe amplification (MLPA) analysis did not confirm methylation of the tumour genes (0/50) or multiple genetic aberrations (1/80). There was no apparent copy number loss of the CDKN2A gene on chromosome 9p21. These data were consistent with the presence of melanocytic naevus, not melanoma.

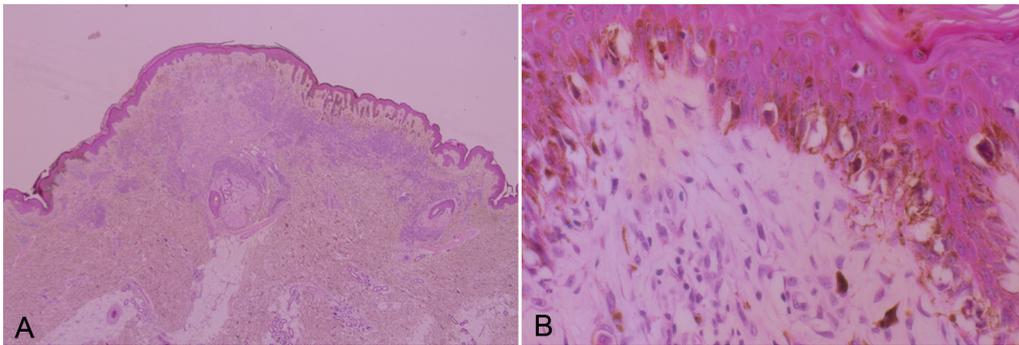


Fig. 3. (A) Bland naevus cells from the dermo-epidermal junction to the dermis (haematoxylin and eosin (H&E) $\times 5$). (B) Atypical PNW on dermoscopy corresponded to irregular elongation of rete ridges with basal melanocytosis (H&E $\times 33$).

DISCUSSION

The present case showed atypical PNW on dermoscopy, with all dermoscopic algorithms suggesting the presence of malignant melanoma. At first, we diagnosed this case as having malignant melanoma arising from a small CMN on dermoscopy. However, histological and genetic analysis did not detect malignant melanoma (12). The present case was thought to be a small CMN due to the size and the patient's statements regarding its developmental history. Target structures on dermoscopy is a feature of non-giant CMN (13). The so-called "congenital pattern features" were partially seen histologically (14).

Atypical PNW showed a black, brown, or grey network with irregular meshes and thick lines, which is a major criterion of the 7-point checklist (11). It is an important finding for the diagnosis of melanoma. Although focal thickening of network lines is a characteristic feature of non-giant CMN, it is not like that in atypical PNW (13). The frequency of the various morphological features in congenital and acquired naevi significantly differs for many parameters, such as target structures, focal network line thickening with superimposed dots, small globules and small polygonal areas, dots, hyperpigmented areas, perifollicular and skin furrow hypopigmentation, vessels, target vessels, hair follicles, and satellite areas, which were more frequently encountered in congenital lesions (13). However, atypical PNW is not recognized as a feature of CMN. We should be aware of the tendency to atypical PNW on dermoscopy in CMN.

In conclusion, CMN could show atypical PNW on dermoscopy. Atypical PNW and a high score on dermoscopic algorithms for CMN do not necessarily indicate the development of malignant melanoma.

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