



A Worrisome Case of Early *In Situ* Melanoma on the Leg: A Multicomponent Pattern in Dermoscopy Supportive of Malignancy

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Dear Editor:

Clinically, *in situ* melanoma (ISM) is a pigmented macule with an irregular border. There are often variations in color including not only tan, brown, and black, but also pink, blue, gray, and white. Dermoscopic criteria for the diagnosis of melanoma on the trunk and extremities include a multicomponent pattern, atypical pigment network, irregular dots/globules, irregular streaks, irregular pigmentation, blue-whitish veil, and regression structures¹.

A 64-year-old male presented with a 5 mm × 4 mm-sized, asymmetric, black macule, accompanied by an irregular edge on his right leg (Fig. 1A), with 2 years' duration. Dermoscopy demonstrated a multicomponent pattern with an atypical pigment network, irregular dots/globules, irregular streaks, and homogeneous areas. There were light and dark brown colors (Fig. 1B). Histological examination demonstrated an asymmetrical silhouette. The epidermis was irregularly thickened and thinned. Patterns of inflammatory infiltrates and melanin deposits were also asymmetrical. Partial fibrosis was seen in the subepidermal area. One half of the lesion did not mirror the other half (Fig. 1C). There was a contiguous proliferation of atypical pagetoid cells completely replacing the basal cells, accompanied by only a few nests (Fig. 1D). These cells had hyper-

chromatic nuclei and a few mitoses (Fig. 1E). Pagetoid spread could not be seen. Immunohistochemically, atypical pagetoid cells were positive for S-100 protein (Fig. 1F), HMB45, and melan-A. The patient was diagnosed with early ISM. Computed tomography and fluorodeoxyglucose-position emission tomography revealed no evidence of malignancies. A wide local excision with a 1-cm margin was performed three weeks after an excisional biopsy with a 1-mm margin. Neither local recurrence nor metastasis has appeared during the 7-year follow-up.

Two major patterns of ISM can be distinguished from each other: pagetoid and lentiginous. The term "pagetoid" originally connoted the spread of single melanocytes and small nests of such cells above the basal layer, as seen in mammary and extramammary Paget's diseases. However, it is also, although less often, used as a cytologic description of certain melanocytes, conveying the presence of abundant pale cytoplasm². Pagetoid spread is graphically described as buckshot scatter of melanocytes within the epidermis, the best-known pattern of superficial spreading melanoma. At the earliest time of development in ISM, exclusive single melanocytes proliferate in the basal layer. The present case corresponded to early ISM because of the lack of pagetoid cells above the basal layer. In both clinical and dermoscopic aspects, obvious characteristics of melanomas are hard to be detected in small ISMs. In the present case, melanoma might be suspected clinically by asymmetry with an irregular edge despite the small size of 5 mm. Asymmetry has been reported to be an important finding for early diagnosis of melanoma³. Furthermore, a multicomponent pattern could be detected in dermoscopy. Otherwise, Clark's nevi usually reveal regular reticular or globular patterns. Although histologic examination remains the gold standard for an accurate diagnosis of melanoma⁴, a multicomponent pattern in dermoscopy could be an important key⁵.

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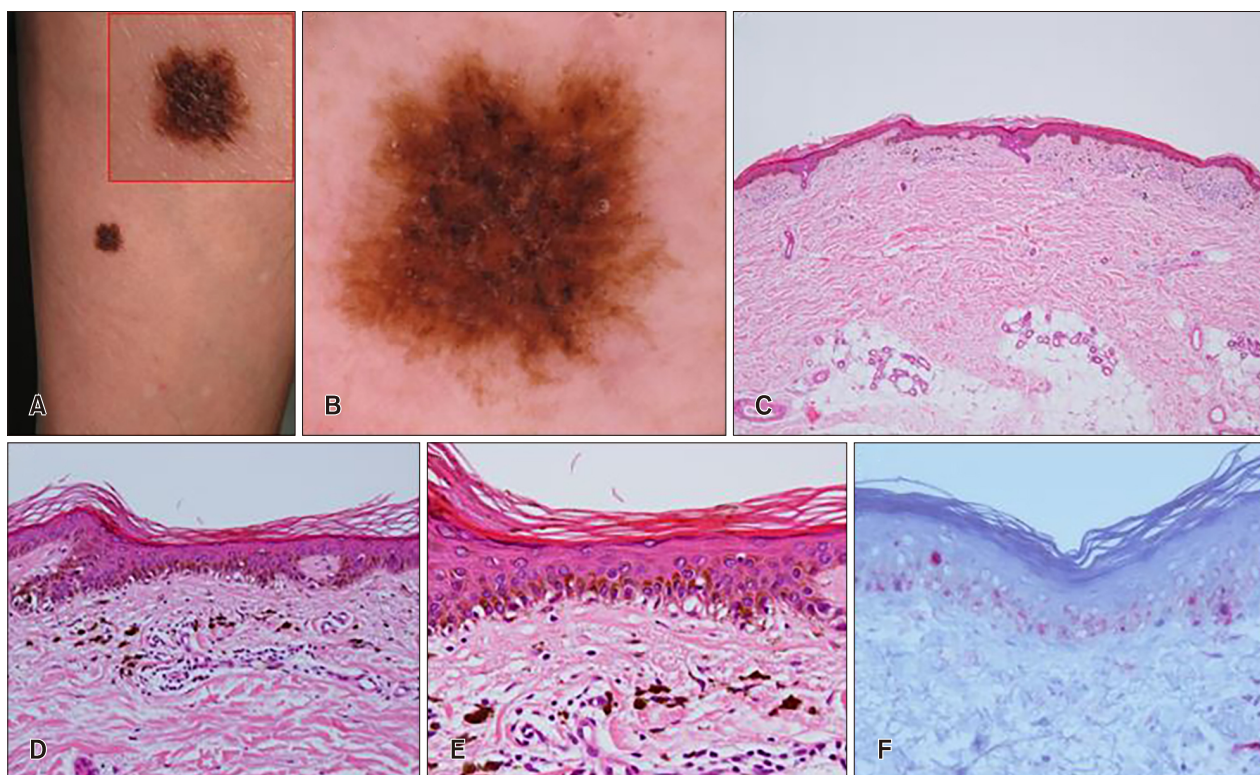


Fig. 1. (A) A black macule without a variegation of color, measuring 5 mm×4 mm on the right leg (clinical view). (B) A multicomponent pattern with atypical pigment network, irregular dots/globules, irregular streaks, homogeneous areas, and multiple colors (dermoscopy). (C) An asymmetrical silhouette (H&E, original magnification ×40). (D) A contiguous proliferation and a few nests in the basal layer (H&E, original magnification ×200). (E) Atypical pagetoid melanocytes with hyperchromatic nuclei (H&E, original magnification ×400). (F) Positive reactivity for S-100 protein (immunohistochemistry, original magnification ×400). We received the patient's consent form about publishing all photographic materials.

In conclusion, we described a worrisome case of early ISM, accompanied by an important key of a multicomponent pattern in dermoscopy.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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REFERENCES

1. Neila J, Soyer HP. Key points in dermoscopy for diagnosis of melanomas, including difficult to diagnose melanomas, on the trunk and extremities. *J Dermatol* 2011;38:3-9.
2. Ackerman AB, Troy JL, Rosen LB, Jerasutus S, White CR, King DF. *Differential diagnosis in dermatopathology II*. Philadelphia: Lea & Febiger, 1988:102-117.
3. Argenziano G, Albertini G, Castagnetti F, De Pace B, Di Lernia V, Longo C, et al. Early diagnosis of melanoma: what is the impact of dermoscopy? *Dermatol Ther* 2012;25:403-409.
4. Malvey J, Puig S, Argenziano G, Marghoob AA, Soyer HP. Dermoscopy report: proposal for standardization. Results of a consensus meeting of the International Dermoscopy Society. *J Am Acad Dermatol* 2007;57:84-95.
5. Arevalo A, Altamura D, Avramidis M, Blum A, Menzies S. The significance of eccentric and central hyperpigmentation, multifocal hyper/hypopigmentation, and the multicomponent pattern in melanocytic lesions lacking specific dermoscopic features of melanoma. *Arch Dermatol* 2008;144:1440-1444.