Dermatology Practical & Conceptual

Sub-Ultraviolet Light Dermatoscopy for Surgical Margin Definition in Lentigo Maligna Melanoma

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Case Presentation

A 62-year-old man presented with a progressively enlarging pigmented lesion on the scalp for over five years. Physical examination revealed an intensely pigmented patch, 8 x 5 mm in diameter, surrounded by severe photodamage with multiple solar lentigines and field cancerization (Figure 1A). Polarized light dermatoscopic examination showed an atypical pseudonetwork, rhomboids, structureless blue pigmentation, and streaks. Additionally, there was a subtle peripheral light brown pigmentation, clinically similar to other solar lentigines on the scalp, in which some "isobar" (circle within a circle) structures were visible (Figure 1B).

Using 405-nm light dermatoscopy (dermatoscope DZ-D100, Casio Computer Co, Ltd, Tokyo, Japan), we were able to better define the true extension of the lesion (Figure 1C). Histopathological examination of the complete excision of both components revealed a 18 x 5 mm in diameter, non-ulcerated lentigo maligna melanoma (LMM), with a Breslow thickness of 0.5 mm (Figure 1D-E).

Teaching Point

The definition of surgical margins in lentigo maligna/LMM can be challenging due to its frequent subclinical extension and poor peripheral demarcation. Dermatoscopy with 405 nm sub-ultraviolet (UV) light can help to better define these margins in comparison with naked eye examination or conventional polarized dermatoscopy [1,2]. The 405 nm sub-UV light highlights melanin distribution in a dark gray color due to its higher absorption by melanin. Furthermore, this technique has shown to enhance the observation of some dermatoscopic criteria in comparison with conventional dermatoscopy, such as ulceration, crusts, comedo-like openings, milia-like cysts, multiple aggregated yellow globules, and fissures and ridges [1,2].

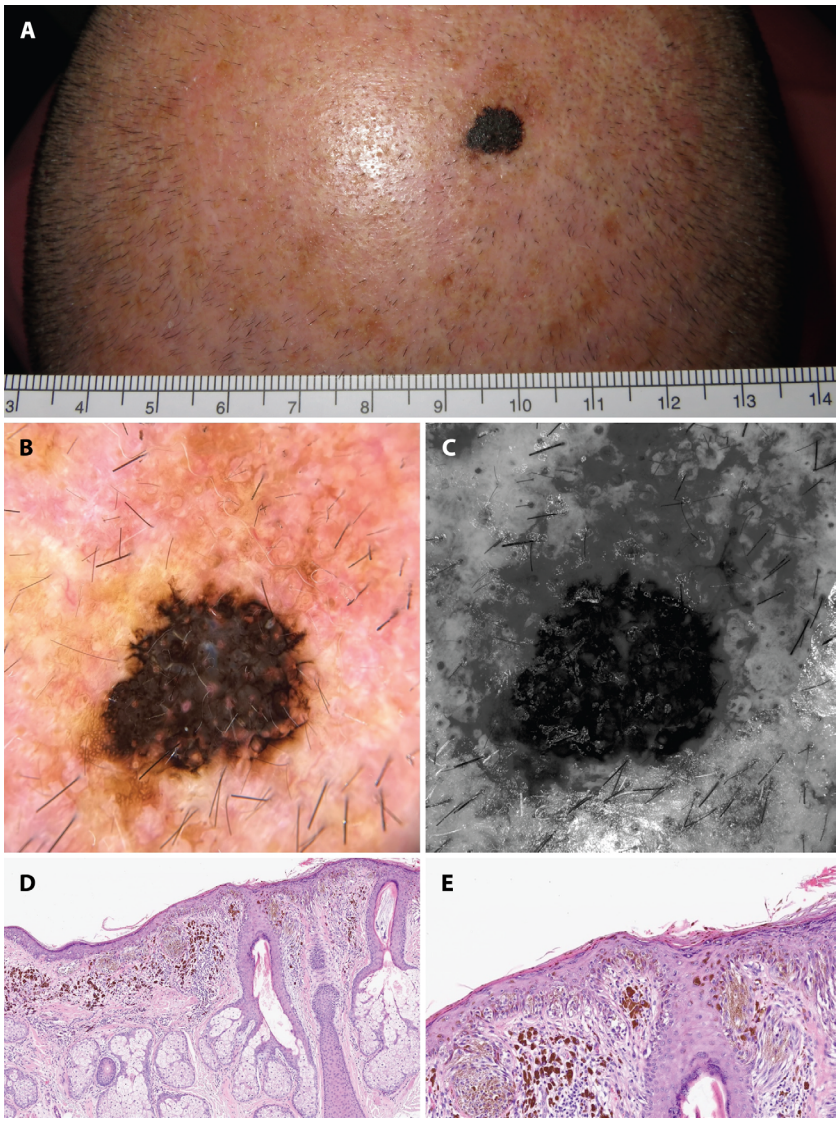

Figure 1. (A) Intensely pigmented lesion located on the scalp surrounded by severe photodamage and field cancerization. (B) Polarized light dermatoscopy showed an atypical pseudonetwork, rhomboids, structureless blue pigmentation, and streaks. Moreover, circle within a circle structures, also called "isobars", were present in the subtly pigmented periphery of the lesion. (C) Sub-UV dermatoscopy showed a more precise delimitation of the lesion beyond the clinically and dermatoscopically evident margins. (D) Proliferation of single and nested atypical melanocytes along the basal epidermis, with an invasive component and involvement of adnexal epithelium (H&E, x4). (E) At higher magnification, cytologic atypia, follicular involvement, and pagetoid spread were clearly visible (H&E, x10).

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