Dermoscopic changes to a melanocytic naevi from intense pulse light therapy

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DESCRIPTION

Dermoscopic changes in the appearance of melanocytic naevi have been increasingly reported following laser or intense pulsed light (IPL) hair epilation. This may subsequently lead to incorrectly diagnosed melanocytic tumours, especially in individuals at high risk of melanoma. We report a patient presented with dermoscopic changes of their naevi after photoepilation.

A male in his 40s with Fitzpatrick skin type III and multiple melanocytic naevi, known to the dermatology department for more than 2 years, presented for a skin examination. He had a personal history of two melanoma in situ and a family history of invasive melanoma. On sequential digital dermoscopy, two melanocytic naevi displayed several blotches of brown pigment within a reticular network, which was not evident previously (Figure 1).

On further history, he had received two sessions of hair epilation with IPL approximately 2 weeks prior to review in clinic. The patient was followed up 3 months later, where the previously described dermoscopic changes had resolved. This confirmed the dermoscopic changes to the melanocytic lesion were due to IPL and not a developing melanoma.

In comparison with the single wavelength emitted by lasers, IPL delivers many wavelengths of energy. Hair epilation devices act via selective photothermolysis and target melanin as the chromophore. They take advantage of the higher density of melanocytes and larger melanosomes in the hair follicle to preferentially remove hair.

Melanocytic naevi with junctional nests of heavily melanised melanocytes may also absorb energy emitted from hair epilation devices, leading to damage of melanosomes and the surrounding cells, as well as the stromal matrix. Dermoscopic features of affected melanocytic naevi include heterogeneously sized globules, superficial blotches of brown pigment and loss of pigment network. Through confocal microscopy, Yamashita et al demonstrated that IPL photothermolysis of melanocytic lesions caused denaturation of melanin caps-containing cells and increased keratinocyte differentiation. The clinically evident blotches of brown pigment are ‘microcaps’, consisting of cellular debris admixed with melanosomes and necrotic keratinocytes, which have risen to the epidermis. Interestingly our patient only had two of the twenty monitored melanocytic naevi demonstrate dermoscopic change from photoepilation. We theorise this is due to the different energy settings used to target hair on the legs and back compared with the upper limbs and abdomen.

The described dermoscopic changes to melanocytic naevi from hair epilation devices may be concerning for melanoma, especially in an individual at high risk of melanoma, and therefore bring about the need for a biopsy. In the context of treatment-modified melanocytic naevi, this has been termed pseudomelanoma due to their similarities on histological examination. Complicating this however, are reports in the literature where malignant melanoma was diagnosed after laser treatment of presumed benign naevi, although it is likely that these lesions were initially misdiagnosed.

A thorough history is integral in a dermatological consultation to elicit pertinent and important information to help differentiate diagnoses. Clinicians should be aware of the clinical and dermoscopic changes to melanocytic naevi post laser therapy, especially in patients with multiple risk factors, to reduce patient anxiety and unnecessary biopsies.
Learning points

► Melanocytic naevi may absorb energy emitted from hair epilation devices such as intense pulse light.
► Patients with concerning changes to their melanocytic naevi should always be asked whether they have recently had laser hair removal.
► Pseudomelanoma describes treatment-modified melanocytic naevi which may demonstrate dermoscopic and histological similarities to melanoma.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

References