Acta Derm Venereol 2016; 96: 406–407

SHORT COMMUNICATION

Diagnosis of Amelanotic Lentigo Maligna by Using *In vivo* Reflectance Confocal Microscopy

Angela Alani, Bart Ramsay and Kashif Ahmad
Department of Dermatology, Limerick University Hospital, 000 Limerick, Ireland. E-mail: angelaalani@yahoo.com
Accepted Oct 29, 2015; Epub ahead of print Nov 2, 2015

Amelanotic lentigo maligna (ALM) represents a rare subtype of lentigo maligna and there are only a few reported cases in the literature (1). Lack of melanin can lead to a diagnostic and therapeutic challenge. ALM presents as a non-pigmented erythematous patch and is often misdiagnosed (2).

Reflectance confocal microscopy (RCM) is a non-invasive imaging technique that allows the *in vivo* examination of the epidermis and papillary dermis. This provides a cellular resolution, which is particularly useful when evaluating benign and malignant lesion such as naevi and lentigo maligna.

We present herein a case of ALM initially diagnosed with *in vivo* RCM and successfully treated with 5% imiquimod cream. Clearance was noted clinically and also confirmed by *in vivo* RCM images and biopsy of the area at 9 months.

CASE REPORT

An 84-year-old lady presented with a two-year history of slowly enlarging asymptomatic lesion on her left cheek. It was treated by her general practitioner with diclofenac sodium 3% gel with no response. She had no previous history of cutaneous cancers. Clinical examination revealed a 20 × 18 mm ill-defined erythematous mildly scaly plaque on the left medial cheek (Fig. 1a). Dermoscopy findings showed a scaly surface with homogenous erythema and scattered pinhead vessels. A clinical diagnosis of Bowen's disease was made and two punch biopsies were taken from the lesion on her left medial cheek.

As a part of further assessment, *in vivo* RCM was performed, which identified multiple dendritic pagetoid cells with bright epidermis and numerous tangled lines fulfilling the criteria of lentigo maligna (Fig. 2a).

The formalin-fixed specimen of both biopsies showed proliferation of atypical single and nested melanocytes along the dermal–epidermal junction, with extension along the follicular epithelium in a background of solar elastosis (Fig. 2b). The lesion was positive for S100 & HMB45 immunostains confirming the diagnosis of lentigo maligna.

Treatment options were discussed with the patient including conventional excision, Mohs micrographic surgery and non-invasive therapy using 5% imiquimod cream. Given the size of this lesion with ill-defined edges and location in a cosmetically sensitive area of the face, our patient opted for 5% imiquimod cream. This was applied 5 times per week for 6 weeks leading to marked local inflammation, which resulted in full clinical clearance after one cycle of therapy (Fig. 1b and c). RCM was performed at 9 months post imiquimod 5% treatment showing complete resolution of ALM and this was later confirmed histologically as well.

DISCUSSION

The diagnosis of ALM is usually made on histopathological examination of the lesion. The histological diagnosis of lentigo maligna is based on the findings of lentiginously arranged atypical melanocytes within the basal layer of the epidermis, with or without involvement of the follicular epithelium, which can be characteristic. The lack of melanin and the ability to distinguish between atypical melanocytes from atypical keratinocytes as seen in pigmented actinic keratosis can be diagnostically challenging. The use of immunohistochemistry studies in this setting can be invaluable (1, 2).

In vivo RCM is a non-invasive technique for real-time, en-face imaging of the skin layers to the level of

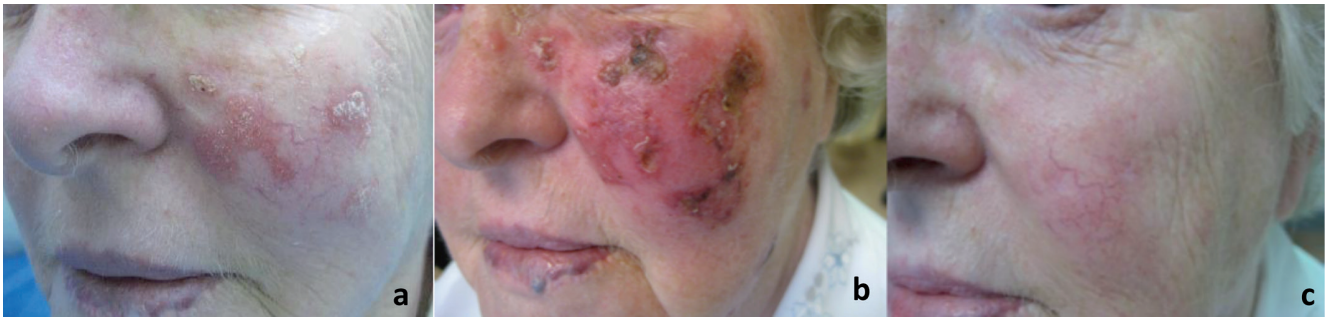

Fig. 1. (a) Amelanotic lentigo maligna before treatment (b) Treatment response during therapy (c) Complete clearance after 5% imiquimod.

 doi: 10.2340/00015555-2267
 ISSN 0001-5555

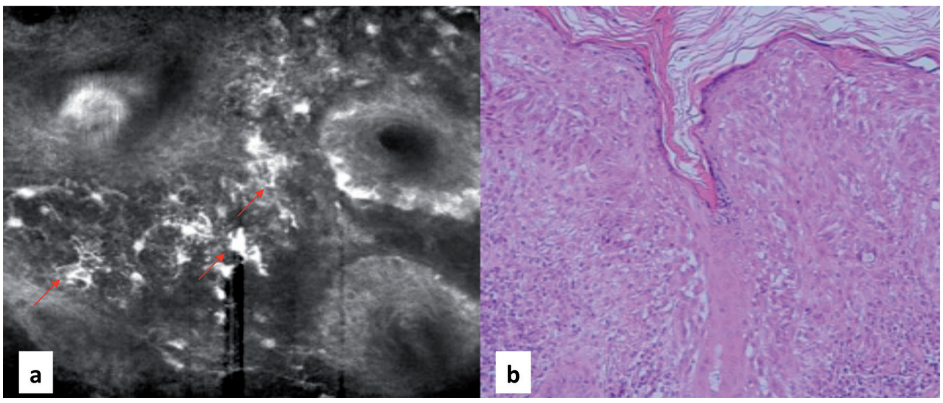

Fig. 2. (a) Dendritic pagetoid cells on confocal microscopy shown with red arrows. (b) Proliferation of single and nested atypical melanocytes along the dermo-epidermal junction seen on histology (hematoxylin-eosin original magnification ×4).

the superficial dermis with a cellular-level resolution close to conventional histopathology. It has been shown to be useful not only in the diagnosis of skin neoplasm including lentigo maligna but also to map the area involved by ill-defined lesions, and monitoring for disease recurrence (3).

Imiquimod 5% cream is a topical immunomodulator, which stimulates the innate and acquired immune response. Imiquimod has been identified as a potential candidate for off-label use in a number of dermatological conditions such as Bowen's disease, basal cell carcinoma and lentigo maligna (4, 5).

Our patient had an expected inflammatory response to imiquimod 5% resulting in complete clinical and histological clearance. As part of our patients' recent follow-up at 9 months, we obtained *in vivo* RCM images of intact skin of the left cheek in 4 radial directions for margin determination of any residual or recurrences of ALM. The RCM images confirm complete clearance of the ALM. We present this case to highlight the rare presentation of lentigo maligna but also the usefulness of RCM in helping elicit the diagnosis and for monitoring the follow-up non invasively.

The authors declare no conflict of interest.

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