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Dermoscopy in the Evaluation of Amelanotic Skin: Two Case Reports on Its Use in the Nigerian Albino

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Authors' contributions

This work was carried out in collaboration between both authors. Author CRM designed the study, wrote the protocol, wrote the first draft of the manuscript and managed the analyses of the study. Authors CRM and EPK managed the literature searches. Both authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Dermoscopy has been widely used for evaluation of pigmented lesions and the benefits of its use have been enormous especially in the early detection of melanoma. Its efficacy in the evaluation of the albino skin is also worthy of recognition. We report two cases of persons living with albinism where the dermoscopy was very useful. The first was a 35 yr old clergy man with oculocutaneous albinism, who presented with a plaque on the temporal aspect of the face. Dermoscopy showed adherent scales in keeping with actinic keratosis. The second patient was a 25 yr old carpenter presenting with hyperpigmented macular eruptions involving both upper extremities, upper back and neck. Lesions had been present for 10 years. Dermoscopy revealed moth-eaten edges and finger print cords suggestive of solar lentigines.

Keywords: Dermoscopy; actinic keratosis; solar lentigines; albinism.

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1. INTRODUCTION

Dermoscopy is a non-invasive investigative tool which combines digital photography and light microscopy for invivo evaluation of pigmented and non-pigmented cutaneous lesions [1-2].

It is gradually becoming an adjunct to clinical examination as it allows for subtle features like vascular structures to be visualized easily which will be impossible to the unaided eye [3].

Pigmented lesions are usually less difficult to diagnose with the dermoscopic hence its use is quickly gaining grounds in boosting diagnostic accuracy for pigmented lesions like malignant melanoma [4]. The amelanotic albino skin may present a new set of challenges for the dermatologist, but nevertheless, dermoscopy is still extremely beneficial in them. We present two patients with oculocutaneous albinism who presented with cutaneous lesions that the dermoscopy was found extremely useful in diagnosis.

2. CASE REPORTS

Case 1: A 35 yr old clergy man presented to our dermatologic clinic with a lesion on the right temporal region of the face. The lesion had been present for 6months. There was no associated ulceration or pruritus. Skin examination revealed a 1cm hyperkeratotic plaque with a sand-paper feel on the left temporal region of the face. A thorough physical examination of all other systems was done and findings were essentially normal. Dermoscopy done of the lesion revealed adherent scales over the plaque with surrounding erythema in keeping with actinic keratosis. An assessment of actinic keratosis was made. Following clinical evaluation of the patient, he declined histologic confirmation of diagnosis or any therapeutic modality primarily for the marked financial constraint. He was counselled on the need for treatment, sun-protection and was offered free sun screens with high sun-protection factor (>50%). He subsequently presented 2 yrs later, with the lesion now ulcerated measuring about 2x2 cm in widest dimension. The ulcer had poorly defined edges with poor granulation tissue. An initial assessment of actinic keratosis with a probable malignant transformation was made. He was then referred to the plastic surgeons for an excisional biopsy. The patient again declined for the financial constraint.

Case 2: A 25 yr old carpenter with oculocutaneous albinism presented to us with extensive wide spread hyperpigmented macules involving the trunk, extremities and neck. Lesions had first appeared about 10 yrs prior to presentation. He claimed they were initially few in number but gradually increased over time. There was a history of significant exposure to the tropical sunshine. Dermoscopy revealed finger print cords and moth eaten edges suggestive of solar lentigines. He was subsequently counselled on sun-protection (use of sun protective clothing, use of sunscreens and avoidance of sun peak hours). Free sun-screens were given and topical isotretinoin cream administered. Patient has since been lost to follow up.

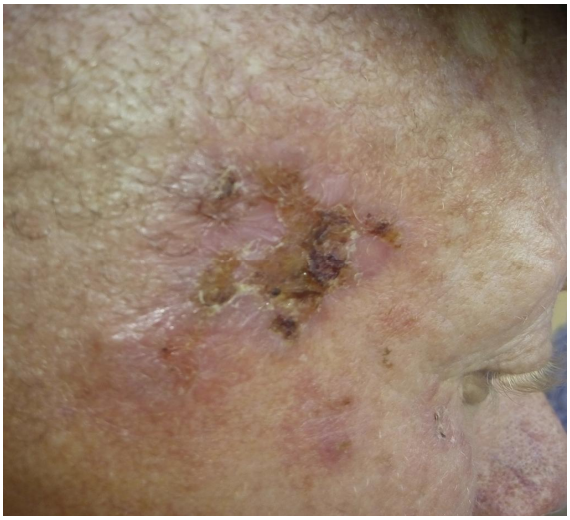

Fig. 1a. A 35 yr old Clergy with actinic keratosis. The lesion had been present for 6 months. Examination revealed a 1 cm plaque with a sand paper feel

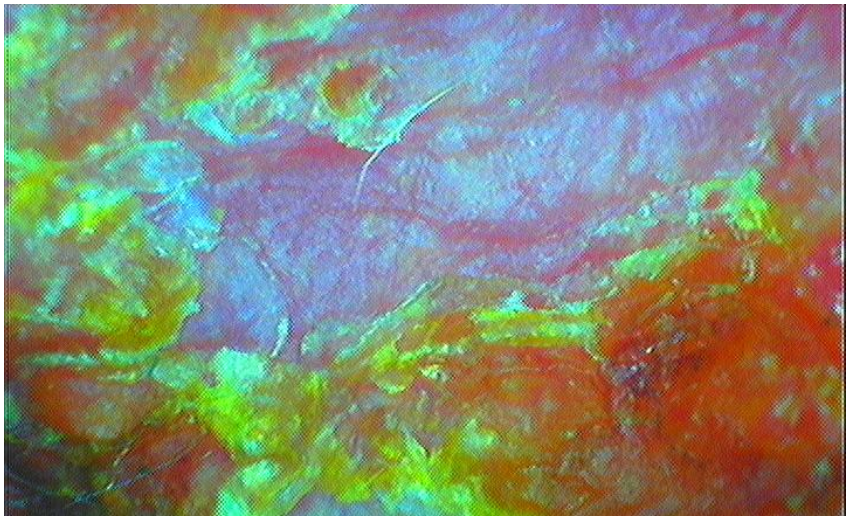

Fig. 1b. Dermoscopic examination revealed adherent whitish-yellow scales with marked hyperkeratosis in the above patient with actinic keratosis

Fig. 2a. A 25 yr old carpenter with oculocutaneous albinism presenting with solar lentigines involving both upper extremities, upper back and neck. Lesions had been present for 10 years. (See arrows showing solar lentigines)

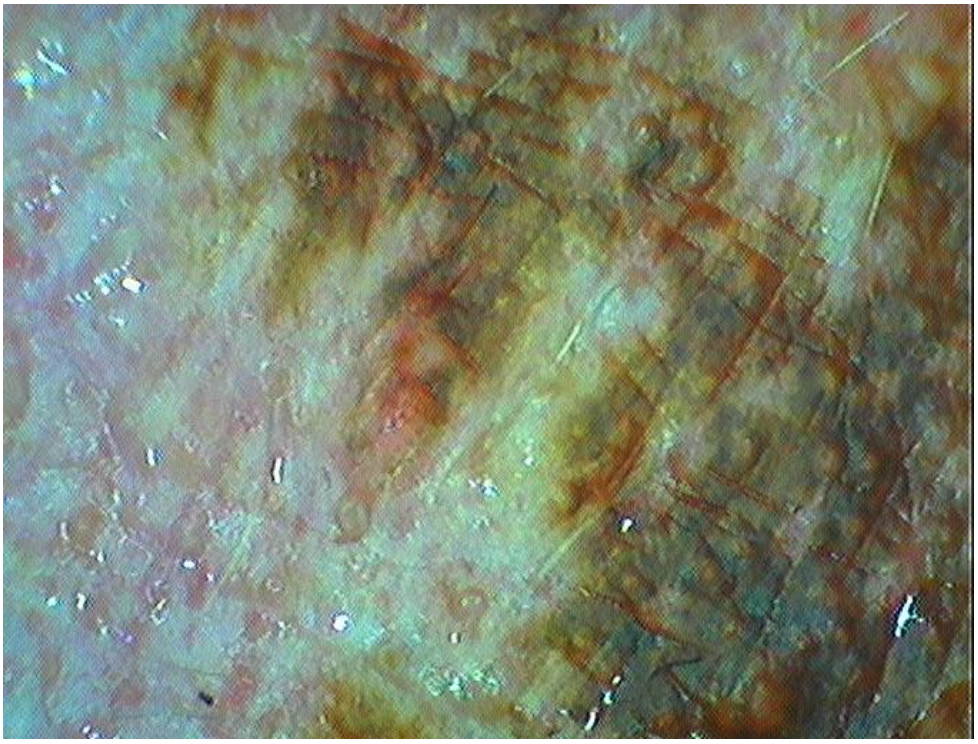

Fig. 2b. Dermoscopy in a 25 yr old carpenter with solar lentigines showed moth eaten edges and finger print cords

3. DISCUSSION

Dermoscopy allows for the visualization of skin structures with polarized light at a 6- to 100-fold magnification, reaching the depth of the papillary dermis [5]. The usefulness of dermoscopy in differentiating melanocytic from non-melanocytic pigmented skin lesions, both benign and malignant,is widely recognized [6-7]. In the non-melanized albino skin, the dermoscope is also very useful in the diagnosis of various cutaneous morbidities especially photodermatoses.

Actinic keratosis is a pre-malignant cutaneous disorder which is quite common in albinos. It represents the earliest manifestation of non-melanoma skin cancer.

Because of their risk of progression to invasive squamous cell carcinoma, an earlier diagnosis and treatment are mandatory. This malignant transformation is what we believe occurred in our patient who declined therapeutic management after an initial diagnosis of actinic keratosis was made 2 years prior. The diagnosis sometimes could represent a challenge even for expert dermatologists, hence the dermoscope becomes a necessary tool in boosting diagnostic accuracy. Skin damage results from ultraviolet exposure through several mechanisms, including the formation of sunburn cells as well as thymine and pyrimidine dimers, collagenase production, and the induction of an inflammatory response. Sunburn cells, or UV-induced apoptotic cells, have long been used as markers by which to evaluate skin damage caused by sun exposure. UV-induced apoptosis is mediated by caspase-3, high levels of which are thought to be good indicators of the presence of cellular apoptosis [8]. There are three clinical grades of Actinic Keratosis(AK) which correspond dermoscopically to three different patterns [7,9]: Grade 1 AKs are typified by red pseudo-network pattern and discrete white scales; grade 2 corresponds to an erythematous background intermingled by white to yellow, keratotic, and enlarged follicular openings (reminiscent of the surface of a strawberry this pattern has been termed “strawberry pattern”); and grade 3 AKs exhibit either enlarged follicular openings filled with keratotic plugs over a scaly and white-yellow-appearing background or marked hyperkeratosis seen as white-yellow structureless areas [9]. The sensitivity and specificity of dermoscopy in

AK diagnosis have been reported to reach 98% and 95%, respectively [9].

Solar lentigines usually occur as numerous lesions on the severely sun-damaged skin in the albino skin. They are mainly found on the extensor surfaces of the forearms, and the face. The lesions may vary in size up to a few cms in diameter and are characterized by markedly irregular outlines with various shades of colouration ranging from light brown to dark brown [10].

Dermoscopy of solar lentigines on the dorsum of the hands, extensor surfaces of the arms, and the back, reveal a delicate, sharply demarcated reticular pattern with regular meshes, finger print cords and thin lines [10].

The dermoscopy of facial solar lentigines, however, is complicated by the particular anatomy of the facial skin. In some cases, a classic pseudo network and a delicate pigment network inherent to solar lentigo may be found closely associated. More frequently, a homogeneous pattern is combined with a delicate, light brown, typical pseudo network. In other instances so-called “moth-eaten edge” is recognizable as a non-uniform concave area resembling a “bite” at the periphery of a lesion [11]. Zalaudek and colleagues described a different dermoscopic finding for melanocytic skin tumours which may be a differential for solar lentigines and this they described as a comma, dotted and linear irregular vessels [12].

4. CONCLUSION

Dermoscopy is a key tool useful in the evaluation of photodermatoses in the albino skin and may be a simple method to reduce unnecessary biopsy, and improve clinician diagnostic certainty especially in low resource countries like ours where patients usually bear the brunt of their health care management.

5. LIMITATION OF STUDY

Histological confirmation was not done for both patients due to the marked financial constraint. This is a major challenge is resource-poor countries like ours.

CONSENT

As per international standard or university standard, the patient’s written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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