A red scaly patch diagnosed as hypomelanotic melanoma

Tim Aung, Cliff Rosendahl, Damien Foong

ABSTRACT

Early detection of melanoma is important and the diagnosis of amelanotic/hypomelanotic melanoma (AHM) is challenging. Nevertheless, dermatoscopy has been shown to improve diagnostic accuracy for non-pigmented skin lesions as well as pigmented lesions, and several algorithms for cutaneous neoplasms evaluation are available. We present a hypomelanotic melanoma detected on an asymptomatic patient at routine skin examination utilising a dermatoscopic decision algorithm. General practitioners, also known as primary care practitioners, are likely to be the first practitioners to encounter a skin cancer on a patient with further necessary actions.

An asymptomatic 70-year-old male bus driver with phototype-2 skin was offered a total body skin examination following treatment of two keratinocyte carcinomas of the face. He had a history of a targeted skin examination of a leg elsewhere, two years previously, and had no significant co-morbidities.

Examination discovered an ordinary scaly dermatosis-like erythematous patch, but it was solitary, measuring 14mmx10mm with no clinically evident pigment, on the abdomen in the context of surrounding angiomas together with some naevi and seborrhoeic keratoses (Figure 1). Dermatoscopically (Figure 2), it was not possible to render a confident diagnosis of any common benign lesion (naevus, benign keratinocytic lesion, haemangioma, dermatofibroma or dermatosis) by pattern recognition. Although there was very subtle structureless brown pigmentation visible dermatoscopically on one section of the periphery, the lesion was regarded as essentially amelanotic, and was assessed by the "prediction without pigment" decision algorithm (Figure 3).[1,2] There was no evidence of ulceration (the first assessment in the algorithm) but white clues (polarising-specific white lines) and also polymorphous vessels with patterns of both linear and dot were present. According to "prediction without pigment", any of these described features in a lesion of concern, mandate histological assessment. An excisional biopsy with 2mm peripheral margins undermined in the fat layer was performed as per published guidelines.[3,4] Specifically, a polymorphous vessel pattern including both linear-irregular vessels, along with a pattern of dot vessels in the background of milky red, pointed to melanoma as a possible diagnosis.[2]

Dermatopathological examination revealed an invasive superficial spreading melanoma, Clark level IV, Breslow thickness 1.5mm. The patient was referred to a tertiary facility for further management.

Discussion

Amelanotic/hypomelanotic melanoma (AHM) is descriptive term for melanomas, in which amelanotic means absence of melanin and hypomelanotic melanoma implies low levels of melanin that may extend to the entire lesion. In addition, a partially pigmented melanoma has pigmentation occupying less than 25% of the lesion.[5,6] The prevalence of AHM is estimated to be 2–8% of all melanomas.[6,7] AHM can present with wide range of deceptive appearances such as of inflammatory dermatoses and various skin neoplasms (see Box 1), and therefore, it is called sometimes "the great masquerader".[7] As a result, it poses diagnostic challenges, typically, as in the current case, with delayed presentation, diagnosis and treatment.[5–7]

The current case demonstrated some unexpected features such as the presence of scales while other features such as location in a sun-protected area were typical for superficial spreading melanoma. Being hypopigmented, the lesion did not fulfil the criteria of ABCD (asymmetry, border, colour, and diameter) apart from being greater than 6mm in diameter, or the EFG criteria (elevated, firm and growing). However, dermatoscopic features of white lines and polymorphous vessels (including both linear and dot patterns) on a background of structureless milky red, led for suspicion, as specified in several publications,[2,5–7] although they are not pathognomonic signs for AHM.[8] While there is lack of well-established criteria to detect AHM early, it would be prudent to have a low

threshold for biopsy of hypopigmented lesions when a confident specific benign diagnosis cannot be made by dermatoscopic pattern recognition. This case also highlighted the important tool of the dermatoscope (dermoscope, surface microscope, epiluminescence microscope) and the utility of decision-making algorithms in early detection of skin cancers including difficult AHMs, and the minimisation of unnecessary biopsies of benign lesions.

A variety of algorithms to assist in the diagnosis of pigmented malignancies have been published, but one of relevancies to the current case is a decision algorithm designed specifically for non-pigmented lesions, "prediction without pigment" (Figure 3). For overview and details of this method, we recommend this resource: https://dermoscopedia.org/Prediction_without_Pigment.

Despite no evidence base for mass skin cancer screening, in general, people with high risks of developing melanoma and non-melanoma skin cancers should be encouraged to perform 3–4 monthly self skin check with 12 monthly full skin examination by a trained professional.[9] Risk factors for skin cancers include skin phototype 1 and 2, past and family history of skin cancers, multiple naevi (>100) or large/atypical naevi (>5), solar keratosis (>20), immunocompromised patients and occupations with high UV index exposure.[9–11] In terms of screening age, there are no universally defined guidelines. Generally, skin cancer is rare in younger age, and a US study (2017) recommended risk-stratified screening for persons aged 35 to 70 years.[12] Recommendations are not prescriptive, and the clinician should exercise discretion and regular screening should be offered routinely to those with a history of previous skin malignancy and no patient requesting a skin examination should be denied.

The ideal method of biopsy for a suspected melanoma is a complete excision with 2mm peripheral margin including fat layer in order to avoid a false negative report, as specified in the Australia and New Zealand guidelines.[3,4] Sometimes, partial biopsy (punch, shave or incisional biopsy) may be employed for larger lesions, those on acral sites or other difficult locations where an excisional biopsy may have unwanted functional or cosmetic outcomes, or in patients with significant comorbidities.[3,4]

Summary lessons or key points:

- AHM can present with scaly dermatosis-like erythematous patch or plaque, in addition to nodular appearance with or without ulceration, but an unusual solitary lesion should draw a proper evaluation with histology assessment.
- Diagnosis of AHM remains challenging, and late presentation and misdiagnosis are not uncommon.
- Dermatoscopic polarising-specific white lines and polymorphous vessels including both linear and dot patterns on the background of milky red, are helpful for suspicion of melanoma.

Figure 1: A red patch of abdomen wall.

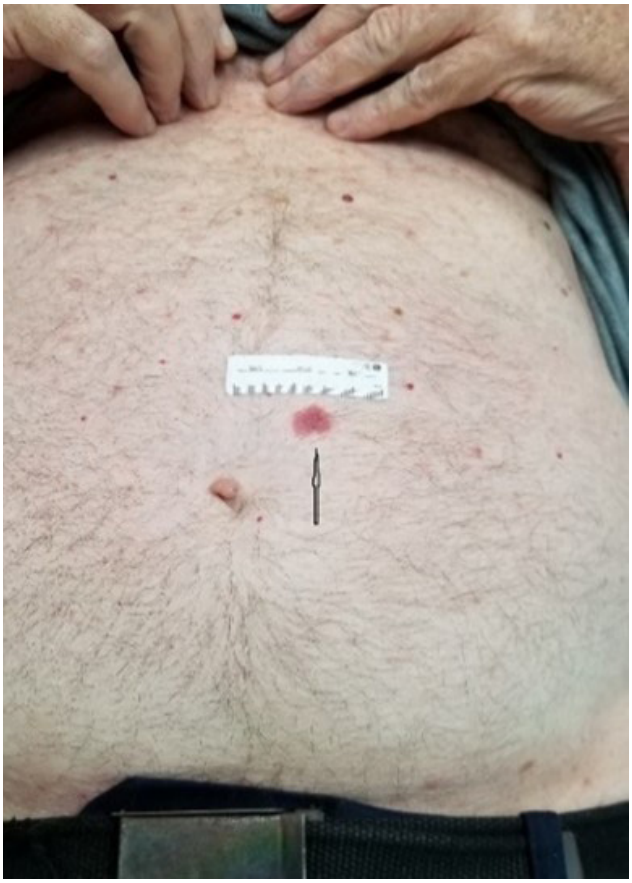
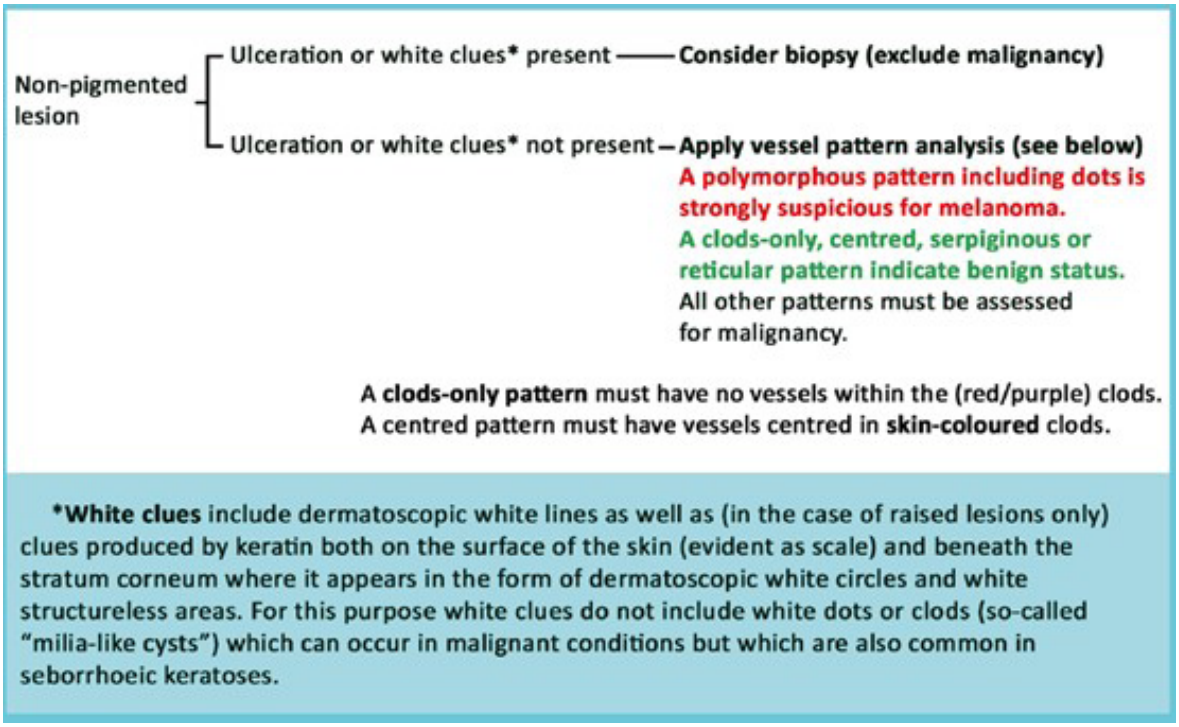


Figure 2: Non-compressed polarised dermatoscopic features prior alcohol swab emersion. Black arrows=scales; Black circles=linear-irregular and hairpin vessels; Yellow rectangles=dotted and comma vessels.

Figure 3: Prediction without pigment: a decision algorithm.



Adapted from "Dermatoscopy and Skin Cancer: a handbook for hunters of skin cancer and melanoma" Rosendahl and Marozava. 2019. Scion publishing (used with permission).

Box 1: Conditions which can mimic amelanotic/hypomelanotic melanoma.

Benign conditions:	**Malignant conditions:**
• Naevus	• Basal cell carcinoma
• Angioma	• Bowen's disease
• Dermatofibroma	• Squamous cell carcinoma
• Pyogenic granuloma	• Keratoacanthoma
• Seborrhoeic keratosis	• Merkel cell carcinoma, etc.
• Actinic keratosis	
• Wart	
• Inflammatory dermatosis, etc.	

COMPETING INTERESTS
The authors have no conflicts of interest. Cliff Rosendahl is a co-author of "Dermatoscopy and Skin Cancer: a handbook for hunters of skin cancer and melanoma" for which he receives royalties.

AUTHOR INFORMATION
Dr Tim Aung FRNZCGP, FRACGP, Dip in Gen Derm & Skin Cancer Surgery, Certificate in Dermatoscopy: Star Medical Centre and Logan Skin clinic, Brisbane, QLD, Australia. ORCHID: orcid.org/0000-0001-9067-2203
Prof Clifford Omer Rosendahl MBBS PhD: Primary Care Clinical Unit, Faculty of Medicine, The University of Queensland, Brisbane, QLD, Australia. ORCHID: orcid.org/0000-0001-5182-2969
Dr Damien Peng Sung Foong MBBS, M. Med. (Skin Cancer), FSCCA: Logan Skin Clinic. QLD, Australia. ORCHID: orcid.org/0000-0002-8340-5753

CORRESPONDING AUTHOR
Dr Tim Aung: FRNZCGP, FRACGP, Dip in Gen Derm & Skin Cancer Surgery, Certificate in Dermatoscopy: Star Medical Centre and Logan Skin clinic, Brisbane, QLD, Australia. ORCHID: orcid.org/0000-0001-9067-2203. timaung@hotmail.com

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