

Letter to the Editor

“The ominous ridge:” Dermoscopic diagnosis of acral nodular melanoma

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Dear Sir,

Melanoma constitutes a spectrum of malignant neoplasms originating from melanocytes. It is considered the most aggressive form of skin cancer. Although it is rare in India, early detection is crucial, as identifying the disease before metastasis dramatically improves the prognosis. In this report, we present a case of acral melanoma (AM), diagnosed at an early stage with the aid of a dermoscope.

A 56-year-old woman presented with multiple painful black, friable nodules with irregular margins and induration on her left heel for 6 months [Figure 1]. The lesions began as a single black nodule over the left heel. It then quickly progressed in both size and number with accompanying oozing of serous fluid. Dermoscopy revealed asymmetry of structures and color, irregular blotches, blue-white veil, and the parallel-ridge pattern (PRP) [Figure 2a and b]. The X-ray and magnetic resonance imaging of the left foot showed no underlying bony invasion. There was no regional lymphadenopathy. Excisional biopsy followed by histopathological examination demonstrated dermal tumor cells arranged in the form of nests and diffuse sheets. Immunohistochemistry showed positivity for HMB-45 and Melan-A, confirming the diagnosis of AM [Figure 3a-c]. The positron emission tomography-computed tomography scan revealed no metastasis elsewhere. The patient was referred to the department of onco-surgery for further management.



Figure 1: A 56-year-old female with multiple friable nodules on her left heel with erosion.

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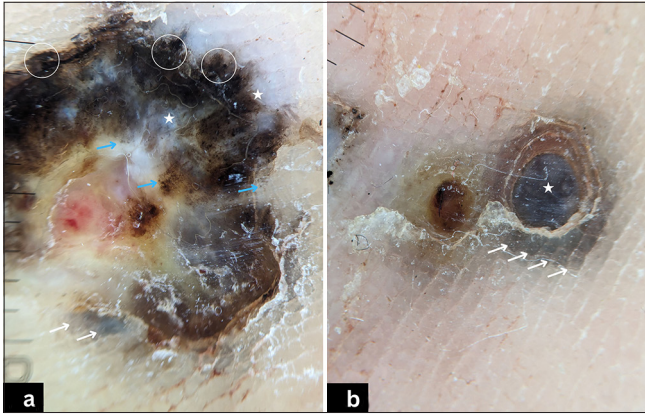


Figure 2: (a and b) Dermoscopic image showing asymmetry of colors, irregular dots/globules (blue arrows), irregular blotches (white circle), blue-white veil (white star), and parallel ridge pattern (white arrows) (DermLite DL5, polarized, contact, wet, $\times 10$).

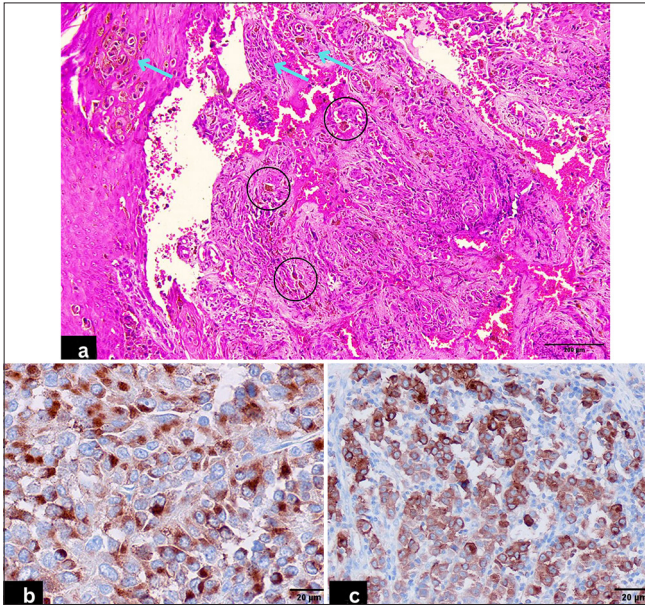


Figure 3: (a) Histopathological image showing nests blue arrows and diffuse sheets of atypical melanocytes in the dermis with scattered melanin black circles pigment (Hematoxylin & Eosin; $\times 100$) and (b and c) HMB-45 and Melan-A immunostaining showing diffuse positivity ($\times 400$).

AMs are rare, constituting 2–3% of all malignant melanomas (MM).^[1] Nevertheless, they are the most common subtype of MM among Asians. AM carries a poor prognosis due to the advanced stage at diagnosis. AM commonly involves the volar surfaces of palms and soles and may present as acral lentiginous or amelanotic melanoma.^[2] The nodular type of AM, as in our case, represents an advanced stage. The diagnostic efficiency can be greatly enhanced by the use of a dermoscope. The PRP on dermoscopy, described as pigmentation along the ridges of skin markings, is considered a hallmark of AM [Figure 4]. In contrast, a common melanocytic nevus demonstrates a parallel furrow pattern on dermoscopy, where the pigment deposition is along the furrows of skin markings. This corresponds to nests of melanocytes located within the crista profunda limitans on histopathology, which lies immediately beneath a furrow. On the other hand, a melanoma has broad proliferation of atypical melanocytes predominantly centered around crista profunda intermedia, which lies beneath a ridge. This gives rise to PRP.^[3] The reported sensitivity and specificity of PRP in early AM are 86% and 99%, respectively.^[4] Some AM cases may not have the classical PRP. In such cases, a BRAAFF checklist may be used, which has 93% sensitivity and 86% specificity for the diagnosis of melanoma.^[3] In addition to PRP, the checklist includes irregular blotches, asymmetry of colors, and structures as positive features for diagnosing AM. Any suspicious lesion suggestive of melanoma should be excised and sent for histopathological evaluation. Histology is the gold standard in diagnosis and shows atypical melanocytes arranged linearly along the dermoepidermal junction. The spread of melanocytes into the dermis as nests and sheets, and the pagetoid spread are the tell-tale signs of a late lesion of melanoma.^[5] The depth of involvement (Breslow's thickness) determines the surgical margins required while excising a MM lesion and the prognosis.^[4] Other non-surgical modalities include radiotherapy, chemotherapy, cryosurgery, targeted therapies like BRAF inhibitors, anti-PD-1 monoclonal antibodies, and tyrosine kinase inhibitors. In our case, the lesion manifested as a *de novo* nodular melanoma without any preceding pigmented patch in the acral area. The reason for this rapid evolution to nodular variant in the acral region, where the

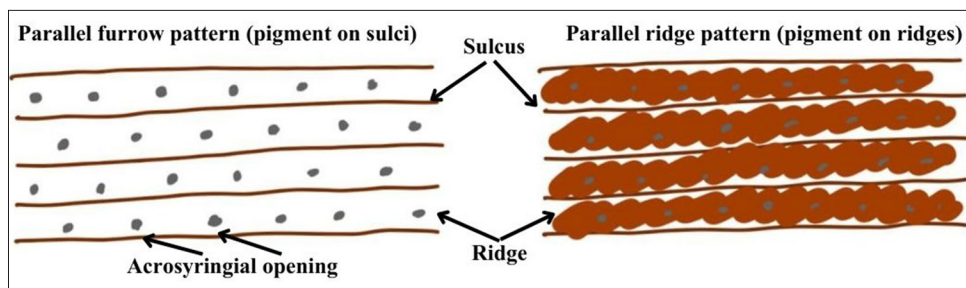


Figure 4: A diagrammatic representation of parallel ridge and parallel furrow patterns seen on dermoscopy.

lentiginous variant is common, has been postulated to be due to a short radial growth phase.

AM is the most common subtype of MM reported in our country. It is essential to recognize the characteristic dermoscopic patterns of AM for early diagnosis, as timely detection significantly impacts patient prognosis.

Ethical approval: The Institutional Review Board approval is not required.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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