

# Acral melanoma with hyperkeratosis mimicking a pigmented wart

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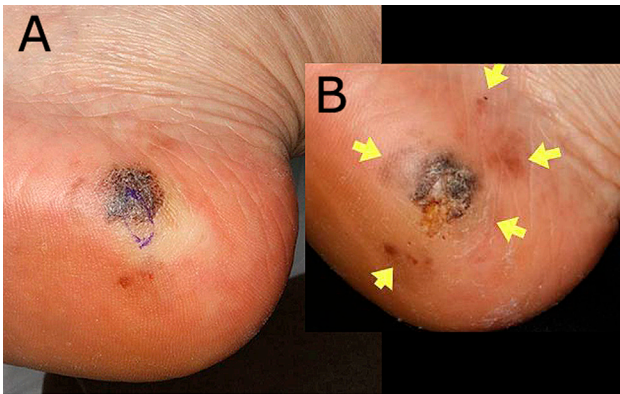
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**ABSTRACT** Acral lentiginous melanoma (ALM) of the sole sometimes has a hyperkeratotic appearance and mimics a pigmented wart. We report a case of an 81-year-old woman with an ALM on the left sole with hyperkeratosis. Due to its presentation it was difficult to make a correct diagnosis at the beginning. Finally we noticed several small, pigmented macules around the wart-like lesion with the parallel ridge pattern on dermoscopy, strongly suggesting acral melanoma. When a hyperkeratotic pigmented lesion on the sole is encountered, one should rule out melanoma by careful examination of the periphery of the lesion. Dermoscopy is a helpful adjunct for the diagnosis of an unusual case like this.

## Case presentation

An 81-year-old Japanese woman presented with a pigmented skin lesion on the left heel (Figure 1). It had been noticed for at least one to two years. She had no specific symptoms. She had a habit of rubbing her soles with pumice. Physical examination revealed a dark brown-to-black hyperkeratotic plaque of 10 mm with a sharply demarcated, symmetrical border. Dermoscopic examination demonstrated a scaly surface and regular brown-to-black dots/globules (Figure 2). At first the diagnosis of a pigmented wart was made an incisional biopsy was performed.

Histopathologically the lesion was characterized by nests of melanocytes with considerable nuclear atypia and mitoses. We thus established a diagnosis of melanoma. A detailed inspection of the remaining lesion revealed surrounding pigmented macules with different shades of brown-to-black and diffuse irregular hypopigmentation (Figure 1B). The pigmented macules showed the parallel ridge pattern on dermoscopy (Figure 2B). We performed a re-excision with a 5 mm margin from all the surrounding pigmented macules. Conventional histopathologic staining with hematoxylin and eosin of the central lesion revealed marked hyperkeratosis and proliferating nests composed of atypical melanocytes



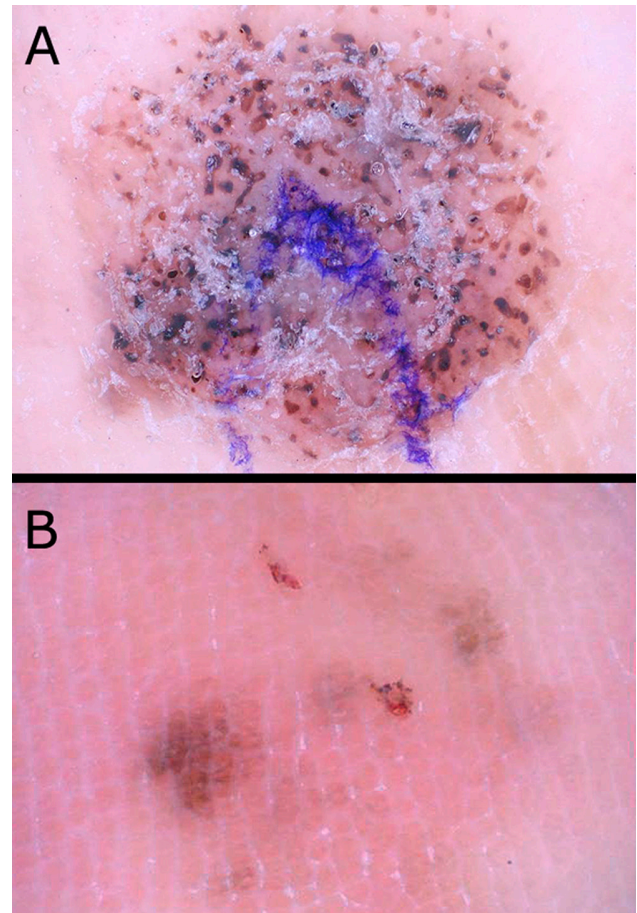
**Figure 1.** (A) A dark brown-to-black hyperkeratotic plaque measuring 10 mm in diameter on the left sole. The border was well circumscribed and symmetrical. (B) A clinical examination after biopsy revealed several pigmented macules of different shades varying from brown to black around the central hyperkeratotic lesion. [Copyright: ©2013 Ise et al.]

within the epidermis (Figure 3A). Nests ascending into the stratum corneum were also seen (Figure 3B). Atypical melanocytes forming nests demonstrated substantial nuclear atypia and mitoses (Figure 3C). Eosinophilic structures resembling Kamino bodies were also seen. The surrounding pigmented macules revealed atypical melanocytes proliferating singly or forming small nests. These atypical melanocytes were hardly observed in the hypopigmented areas that were characterized by lymphocytic infiltration, aggregated melanophages and sparse papillary dermal fibrosis. A hemorrhage in the stratum corneum or epidermis that could induce black or brown dots/globules in dermoscopic observation was not seen histologically. The tumor cells stained positively for S-100 protein and HMB-45 antigen. We confirmed by melan-A staining that melanoma cells were confined to the epidermis both at the central and surrounding lesions. A diagnosis of acral lentiginous melanoma (ALM) in situ was eventually made.

Computed tomography scan of the abdomen and thorax revealed no obvious metastasis. Serum 5-S-cysteinyldopa level was normal. A full thickness skin graft from her abdomen was placed on the operative wound. The patient has been free of disease for eight months since the operation.

## Discussion

ALM is the most common type of melanoma in the Japanese population. In Japan about one-half of cases of cutaneous melanoma affect acral skin and approximately 30% of them occur on the sole [1]. ALM on the sole sometimes can be hyperkeratotic [2,3,4]. In previous reports, hyperkeratotic lesions were seen at sites on which acute pressure was exerted. Our case was not necessarily at a site of acute pressure, but the patient had been habitually rubbing it. This might have caused hyperkeratosis in our case. Another rea-



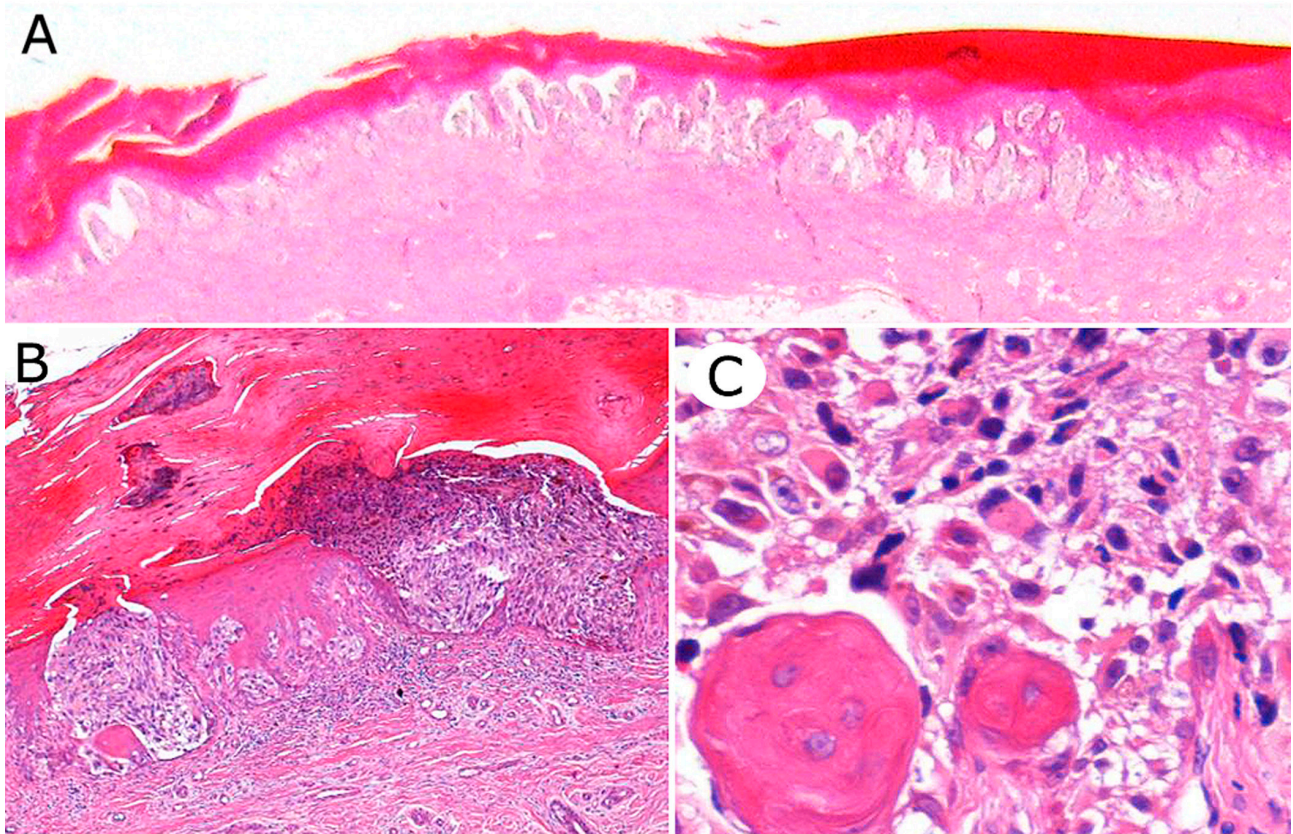
**Figure 2.** Dermoscopic examinations of: (A) A hyperkeratotic lesion—scaly surface and regular brown-to-black dots/globules. (B) Surrounding macules—many brown-to-black macules. Most of them showed parallel ridge pattern. [Copyright: ©2013 Ise et al.]

son for hyperkeratosis might be that our patient had tinea pedis. Coexistence of tylosis, clavus, human papilloma virus (HPV) infection, or other hyperkeratotic disorders may have an influence on keratinization of melanoma. We performed anti-HPV staining of the specimen but with a negative result. Furthermore, similar to previous cases [2,4], hyperkeratosis was conspicuous since melanoma cells mainly proliferated in the epidermis rather than the dermis. Melanoma cells may directly affect overlying epidermis and induce keratinization.

Hyperkeratotic cases of melanoma have often been misdiagnosed. For example, two cases [2,4] in Japan showed amelanotic melanoma, one of which was diagnosed as a hematoma at first. An additional two cases [3] were diagnosed as warts at first and treated by curettage or cryotherapy. Since misdiagnosis and inadequate treatment may lead to dissemination of the disease, it is essential to diagnose melanoma correctly without any delay.

Dermoscopic findings were very helpful for a correct diagnosis in this case. Aggregated dots/globules strongly indicate melanocytic lesion. Their color depends on the amount and depth of melanin. Therefore we estimated that black dots/globules correspond to aggregated nests in the stratum





**Figure 3.** (A) Hematoxylin and eosin staining revealed remarkable hyperkeratosis and many large nests of atypical melanocytes at the dermo-epidermal junction. (B) Nests of atypical melanocytes ascending into the stratum corneum. (C) The nests are composed of atypical cells, and mitoses were also observed. Eosinophilic structures resembling Kamino bodies were also seen. [Copyright: ©2013 Ise et al.]

corneum and brown dots/globules to nests in the epidermis. Furthermore, surrounding pigmented macules exhibited the typical parallel ridge pattern, which played a key role in the correct diagnosis of this melanoma.

## Conclusion

ALM on the sole sometimes shows the feature of hyperkeratosis. Whenever we encounter a hyperkeratotic, pigmented macule on the sole, we should observe carefully not only the main lesion but also the circumference of the lesion so as not to miss subtle pigmentation with parallel ridge pattern on dermoscopy. Dermoscopy often plays an important role in the diagnosis of pigmented skin lesions.

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