

Malignant melanoma misdiagnosed as diabetic foot ulcer

A case report

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Abstract

Rationale: Acral lentiginous melanoma (ALM) does not exhibit the classic signs of malignant melanoma. ALM is frequently misdiagnosed because of its unusual sites and atypical clinical morphologies, which lead to poor prognosis.

Patient concerns: A female patient aged 78 years was presented to our center with two ulcers on her right foot. Diabetic foot ulcer was considered as the primary diagnosis. The ulcers failed to improve after 2 weeks' therapy.

Diagnoses: An incisional biopsy of the lesion revealed malignant melanoma.

Interventions: The patient received wide excision, skin grafting as well as biotherapy.

Outcomes: The lesion was healed and no other metastasis has been founded until now.

Lessons: Clinicians must maintain a high level of suspicion in distinguishing malignant melanoma from other more benign skin lesions of the foot. The need for early biopsy of ulcer, even when clinical suspicion is low, can not be overemphasized. Only in this way can we reduce misdiagnosis rate and improve survival rate in patients with foot ulcer.

Abbreviation: ALM = acral lentiginous melanoma.

Keywords: foot ulcer, malignant melanoma, misdiagnosis

1. Introduction

Malignant melanoma causes approximately 79% of all skin cancer deaths, although it takes up only 4% of all skin cancers.^[1] The morbidity of the disease is increasing faster than any other form of cancer all over the world.^[2] Acral lentiginous melanoma (ALM) as one type of malignant melanoma accounts for an estimated 7% of malignant melanomas.^[3] This type of melanoma does not exhibit the classic signs of malignant melanoma associated with "ABCD" (asymmetry, border, color, diameter).

Because of its unusual sites and atypical clinical morphologies, ALM is frequently misdiagnosed and patient may receive prolonged courses of inadequate therapy.^[4,5] Some retrospective studies demonstrated that the misdiagnosis rate of ALM was about 25% to 36%.^[5-7] ALM commonly presents as ulcer, and is probably misdiagnosed as other disease such as vasculitis, venous ulcer, diabetic foot ulcer, and so on.^[8] From January 2003 to December 2014, 1132 inpatients with diabetic foot and 177 inpatients with ALM were admitted to our hospital. However, 1 case of them was misdiagnosed as diabetic foot ulcer in this period.

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2. Case presentation

Our study was approved by Institutional Ethic Committee of West China Hospital, Sichuan University. Meanwhile, written informed consent was obtained from this patient.

A female patient aged 78 years was presented to our center with ulcers on her right foot for 6 months in September 2014. She had an 8-year history of type 2 diabetes mellitus complicated by peripheral neuropathy and peripheral arterial disease. Her diabetes was poorly controlled. When examined, two 0.5-cm diameter ulcers were on her right heel with seemingly pigmented margin and 1 of the ulcer had red granulation tissue on it. There was a lot of callus around the ulcers and no active drainage, erythema, edema, or other signs of infection (Fig. 1). She complained minor pain at the wound site. Diabetic foot ulcer was considered as the primary diagnosis. She received insulin, periodic antibiotics, wound debridement, daily dressing changes, and medications for neuropathy and peripheral arterial disease for 2 weeks. However, the ulcers failed to improve. Incisional biopsy of lesion was performed to exclude other disease. Histopathology showed tumoral cells positive for HMB45, S100 and partly positive for Ki-67 (Fig. 2), which revealed malignant melanoma with a Breslow thickness of 1.6 mm. There



Figure 1. The ulcers on the right heel.

was no evidence of metastasis. The patient received wide excision of incisal margin 2 cm, skin grafting as well as biotherapy. The lesion was healed and no other metastasis has been found until now.

3. Discussion

Some studies reported the poor prognosis of misdiagnosed cases of AML, which was due to the delayed diagnosis and the prolonged courses of inadequate therapy.^[9–11] Delay in diagnosis and treatment in some patients, however, could be attributed to an inappropriate and inadequate biopsy.^[12] There is no consensus about optimal timing of biopsy for a nonhealing, intractable foot ulcer because few misdiagnosed cases have been reported. Foot lesions are often entirely overlooked by both patient and clinician. Even if discovered, both patients and their health care providers may not readily think of melanoma as likely diagnosis because the incidence of AML is much lower. However, some clinical experience may remind clinicians of early biopsy. If there are not risk factors of diabetic foot ulcer, such as history of trauma, poorly controlled blood glucose, peripheral arterial disease, and diabetic neuropathy, clinicians should consider biopsy to exclude other cause of the ulcer. In addition, if the ulcer fails to improve after therapy and any cause for intractable ulcer has not been found, biopsy should be done as early as possible. Furthermore, the early biopsy is needed when atypical ulcer is present, such as the presence of granulation tissue and pigment. In conclusion, clinicians must maintain a high level of suspicion in distinguishing malignant melanoma from other more benign skin lesions of the foot to reduce the rate of misdiagnosis. Once an AML is identified, early and aggressive treatment may help increase the 5-year overall survival rate.^[13]

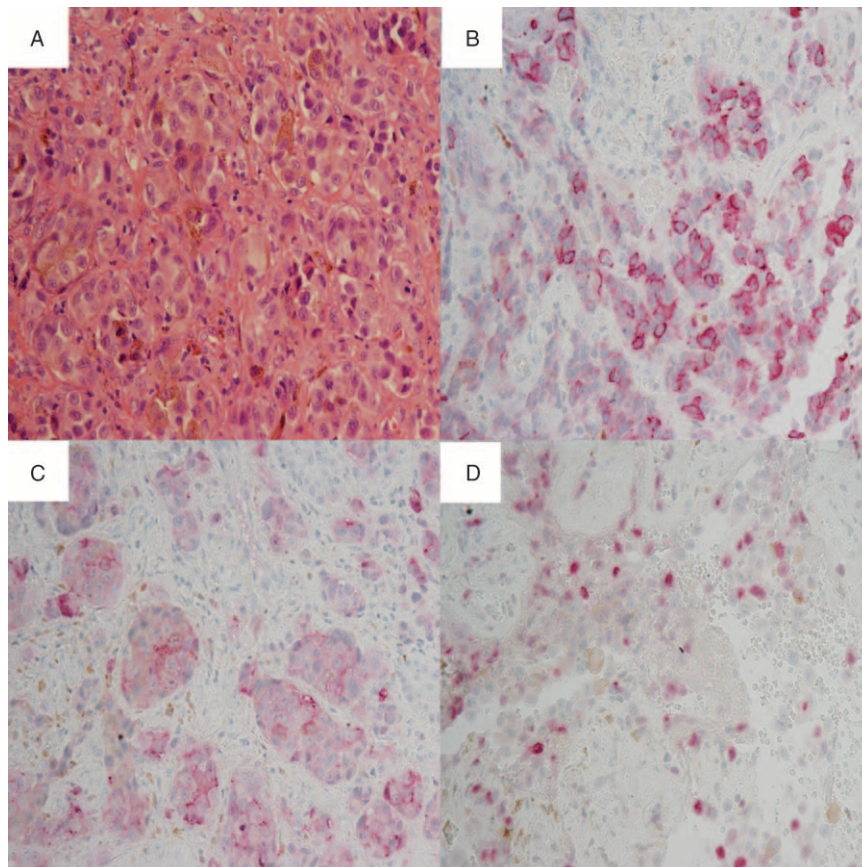


Figure 2. Pathological examination. (A) H&E stain ($\times 300$). (B) Tumor cells stain positive for HMB-45 ($\times 300$). (C) Tumor cells stain positive for S100 ($\times 300$). (D) Tumor cells stain partly positive for Ki-67 ($\times 300$).

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