

# Amelanotic malignant melanoma: a case study demonstrating pitfall of frequently missed opportunity for early diagnosis

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## Abstract

Malignant melanoma is the most common primary malignant tumor of the foot. Amelanotic/hypomelanotic melanoma is characterized by either little or no pigmentation and account for 2-8% of all primary melanomas. Amelanotic/hypomelanotic can often be misdiagnosed and this leads to delaying the diagnosis until advanced ulcerations depths resulted in metastases. In this report, we highlight a case of primary amelanotic melanoma of the foot treated by digital amputation.

**Keywords:** Amelanotic, melanoma, tumor, skin lesion

## Introduction

Malignant melanoma is the most common primary malignant tumor of the foot and occurs in three different forms: superficial spreading, nodular, and acral lentiginous [1]. Amelanotic/hypomelanotic melanoma is a non-pigmented or only slightly pigmented type of cutaneous melanoma. These cutaneous lesions are characterized by either little or no pigmentation and are defined as hypomelanotic or amelanotic, and account for 2-8% of all primary melanomas [2,3]. Amelanotic melanoma may present as a frequently eroded exophytic nodule simulating a pyogenic granuloma or haemangioma, or it can mimic a skin-colored dermal plaque, leading to delayed diagnosis until advanced depth of ulcerations results in metastases [4,5]. Here, we highlight a case of primary amelanotic melanoma of the foot treated by digital amputation.

## Case report

A 57-year-old female presented with an 11-month-old painful ulcer of the 5th toe of the right foot (Figure 1). Topical and systemic antibiotic was prescribed but the patient's complaints were undiminished. Examination revealed a painful ulcerated swollen toe. Wound culture samples were taken from the patient. In subsequent wound culture *Klebsiella oxytoca* was isolated, but a regimen of Ceftriaxone in accordance with antibiotic susceptibility results only improved the patient's pain symptoms but failed to resolve the ulceration. Enlarged inguinal lymph nodes were detected in a systemic examination of the patient and so an incisional biopsy sample was taken from the patient. The pathology showed an amelanotic melanoma and subsequently the patient was referred to plastic surgery (Figure 2). The patient's toe was amputated and right inguinal

lymph node dissection was performed (Figure 3). Lymph nodes metastases were detected in microscopic examination (Stage III). Whole-body [18F] fluorodeoxyglucose-positron emission tomography (FDG-PET) scans were performed but pathological accumulation of FDG was not observed. Subsequently, a total dose of 50 Gy in 20 fractions 3D conformal radiotherapy was performed. Eventually, interferon-alfa2b was added for adjuvant therapy. After treatment, the patient was in complete clinical and radiological remission and there was no evidence of recurrence in follow-up visits for 12 months.

## Discussion

Amelanotic malignant melanoma tends to occur in sun-exposed skin of elderly individuals [4]. Amelanotic melanomas comprise only 2% of melanomas and clinical features of amelanotic melanoma mimic a variety of benign and malignant skin conditions and therefore are commonly mis-diagnosed [2,6]. Amelanotic melanoma not only presents to dermatologists, but to other medical practitioners and represents an important diagnostic pitfall for clinicians as early diagnosis is vital [3,6]. Amelanotic melanoma is most commonly subungual, localized and appearing like an exophytic papular or plaque-like reddish lesion and is often ulcerated [6,7]. Despite the lack of pigmentation of these lesions special stains, such as the Fontana-Masson stain and immunohistochemistry such as Melan-A will confirm the melanocytic nature of the lesion [7,8]. Common clinical misdiagnoses of amelanotic melanoma were naevus, basal cell carcinoma, seborrhoeic keratosis, verruca vulgaris, dermatitis, actinic keratosis, Bowen's disease, keratoacanthoma, dermatofibroma and pyogenic granuloma [4]. A new or changing skin lesion is the most common warning sign for melanoma



Figure 1. Ulcer of the 5<sup>th</sup> toe of the right foot.

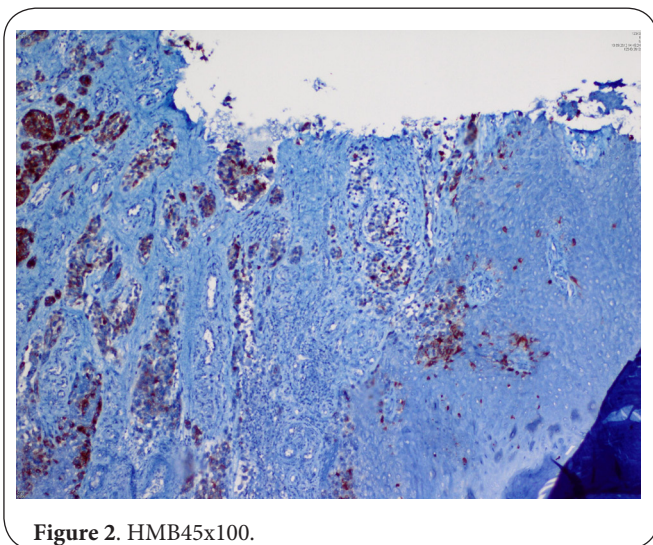


Figure 2. HMB45x100.



Figure 3. The patient's toe after excision.

but amelanotic lesions may not be as easily recognized as malignant melanoma [9]. In approximately 50% of cases the clinical differential diagnosis ranges from inflammatory to benign neoplastic entities as in our patient who was followed for a long time (8 months) as a pyogenic granuloma in different centers [3]. In summary, though amelanotic melanoma of the foot is a rare clinicopathological entity, we recommend non-healing foot ulcers should engender a suspicion of malignancy and demand early biopsy. This case report emphasizes the importance of early diagnosis of amelanotic melanoma for medical practitioners.

**Competing interests**

The authors declare that they have no competing interests.

**Authors' contributions**

Authors' contributions	ND	ARD	YS	IS
Research concept and design	✓	✓	--	--
Collection and/or assembly of data	--	--	--	✓
Data analysis and interpretation	--	--	✓	--
Writing the article	✓	--	--	--
Critical revision of the article	--	--	--	--
Final approval of article	✓	--	--	--
Statistical analysis	--	--	--	--

**Acknowledgement**

We acknowledge the patient who provided consent to have her case reported.

**Publication history**

Editors: Marna Elise Ericson, University of Minnesota, USA.  
 Received: 13-Jan-2014 Revised: 20-Jan-2014  
 Re-Revised: 05-Feb-2014 Accepted: 10-Feb-2014  
 Published: 15-Feb-2014

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**Citation:**

Dilek N, Dilek AR, Saral Y and Sehitoglu I. **Amelanotic malignant melanoma: a case study demonstrating pitfall of frequently missed opportunity for early diagnosis.**

*Dermatol Aspects.* 2014; 2:2.

<http://dx.doi.org/10.7243/2053-5309-2-2>