

## Missed Diagnosis

# Subungual amelanotic melanoma: a diagnostic pitfall

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**Summary:** A 35 year old female presented with a persistent amelanotic lesion of the nail bed of the left great toe for 1 year, associated with destruction of the overlying nail. Incision biopsy revealed a nodular malignant melanoma and the toe was amputated. There is no sign of recurrence at 18 month follow-up. As prognosis is related to local disease extent, any persistent nail bed lesion should be biopsied to exclude the possibility of malignant melanoma.

### Introduction

The prognosis of malignant melanomas is directly related to the extent of local disease. A delay in treatment or inappropriate management may adversely affect survival. This report presents a case of an amelanotic subungual melanoma in which appropriate treatment was delayed. This case emphasizes the importance of considering the diagnosis of malignant melanoma in any persistent nail bed lesion, irrespective of whether pigmentation is present. An incisional biopsy should be performed in all suspected cases.

### Case report

A 35 year old female presented to the Casualty Department with a proliferative infected pale lesion which had replaced the medial two-thirds of the left hallux with loss of the overlying toenail. The toe had been normal until one year prior to presentation when her daughter had accidentally stood on it. Since then it had been chronically inflamed with excess soft tissue proliferation and destruction of the nail. She had received two courses of antibiotics with no benefit. She was referred to the Accident and Emergency Department with a diagnosis of ingrowing toenail for avulsion of the remaining nail.

On examination, an infected 3 × 2 cm raised pearly lesion had replaced the medial aspect of the nail bed with associated nail loss (Figure 1). The absence of nail made the diagnosis of ingrowing toenail unlikely. An incision biopsy was performed under ring-block anaesthesia. The lesion was

reported to be an invasive nodular malignant melanoma and the toe was subsequently amputated through the first metatarsophalangeal joint. Histology revealed a nodular malignant melanoma Clarks level IV, Breslow thickness, an independent prognostic variable, defined as the point of maximal thickness in millimetres, was 5 mm (Figure 2). The lesion extended near to bone



**Figure 1** The nail bed. The amelanotic nature of the lesion is partially obscured by bruising after nail avulsion.

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**Figure 2** Cross-section of the amputated toe showing depth of invasion.

and demonstrated Pagetoid spread which suggested it may have arisen in an acral lentiginous melanoma *in situ*. The patient remains well at 18 months follow-up with no evidence of local recurrence or distant metastases.

### Discussion

As the maximal primary thickness has been shown to be the most important single prognostic variable for a malignant melanoma in terms of nodal status and ultimately 5 years survival,<sup>1,2</sup> a delay in diagnosis may result in a worsening of the prognosis.

Although it has been suggested that a pigmented

subungual lesion is more often malignant than benign,<sup>3</sup> a delay in the diagnosis of malignant melanoma is almost invariable and is frequently contributed to by both the patient and doctor.<sup>4,5</sup>

Subungual melanomas may be confused with a haematoma, paronychia or pyogenic granuloma. An early diagnosis may be further hampered by the fact that subungual melanomas may be swollen, painful and discharge<sup>3</sup> and frequently are associated with a history of initial trauma.<sup>6,7</sup> Furthermore, not all melanomas are pigmented at an early stage of development<sup>8</sup> and even in the mature form 20% may remain amelanotic.<sup>8-11</sup> Such lesions invariably look inflammatory and are almost never diagnosed clinically.<sup>12,13</sup> Signs that may aid diagnosis include pigmentation on the eponychium (Hutchinson's sign),<sup>14</sup> rapid change in a pre-existing mole, or a nail lesion that fails to heal. Malignant melanoma may also begin as a brown-black discolouration in the nail bed that may result in bands or streaks of pigmentation. It should be remembered, however, that subungual melanotic bands unrelated to malignant melanoma are not unusual in Blacks and Orientals but are rarely seen in Whites.<sup>11</sup>

In all cases, however, an accurate diagnosis can only be made after performing a biopsy which should include a portion of the proximal terminus of the nail matrix, the nail bed and nail plate. Such a procedure may require excision of the entire nail and the excision should extend down to near the periosteum.<sup>11</sup>

The delay in diagnosis of malignant melanoma may be as long as two years in 40% of cases<sup>15</sup> with associated inappropriate treatment in 60–80% of cases.<sup>3,15</sup> Gibson *et al.*<sup>13</sup> reported that only half of the patients presenting to the Mayo Clinic had been diagnosed within two years of the tumour appearing, 30% had metastases on first presentation, and two-thirds had been improperly treated prior to diagnosis.

The case presented (in which the lesion was amelanotic, associated with initiating trauma and had the appearance of an ingrowing toenail) highlights some of the diagnostic pitfalls of a subungual malignant melanoma. The prognosis in this condition would only be improved by a high index of suspicion with incisional biopsy of any persistent nail bed lesion, irrespective of whether pigmentation is present or not.

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