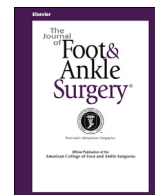




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## Case Reports and Series

## Primary Melanoma of the Third Metatarsal

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## ABSTRACT

Melanoma is a well-known malignant neoplasm of the skin, although it can also arise from other structures. Bone metastasis is not an uncommon event associated with melanoma, although primary osseous melanoma is very rare. In the present report, we describe a case of primary melanoma arising from the left third metatarsal in an adult male. The lesion was treated with surgical excision without adjunct chemotherapy, and recurrence developed approximately 12 months after the foot surgery. The patient died of the cancer 34 months after it had been identified. Primary melanoma arising in a metatarsal is rare, and we wished to highlight this unusual presentation.

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Melanoma is a common malignant neoplasm of the skin. However, it can also arise from other anatomic structures, including bone. Bone metastasis is not an uncommon event associated with melanoma; however, primary osseous melanoma is rare. To the best of our knowledge, only 12 cases of primary melanoma of the bone have been reported in English-language studies to date. In the present report, we describe a rare disease—primary melanoma arising from the left third metatarsal in an adult male treated, in part, with limb-salvage surgery.

## Case Report

A 41-year-old male presented with swelling over the dorsal aspect of his left foot of 6 months' duration. He was a dark-skinned individual who worked as an enforcement officer for the local council and spent most of his time outdoors in the sun. On examination, a focal swelling measuring 5 cm wide by 6 cm long was localized to the dorsal aspect of left foot (Fig. 1). The swelling was indurated and fixed to the deep tissues. The ipsilateral inguinal and popliteal lymph nodes were not palpable. A detailed physical examination did not reveal any other grossly evident lesions elsewhere in that extremity or anywhere else in his body. Moreover, plain radiographs obtained at presentation showed no significant abnormalities of the bones of his left foot. In contrast, magnetic resonance imaging (MRI) scans showed abnormal

marrow activity in the third metatarsal in association with adjacent abnormal soft tissue activity extending from the third metatarsal dorsally about the second and third metatarsals (Fig. 2). The MRI findings were interpreted as tumor arising from the third metatarsal with soft tissue extension. Based on the MRI findings, sarcoma was suspected. Subsequently, computed tomography of the thorax, abdomen, and pelvis failed to reveal any evidence of tumor or ipsilateral inguinal lymph node enlargement or distant metastasis. The clinical laboratory findings were essentially normal, with the exception of an elevated total protein level (91 g/L [normal laboratory levels, 64 to 82 g/L]) and an elevated globulin level (45 g/L [normal laboratory levels, 23 to 45 g/L]) and a decreased lymphocyte count ( $0.68 \times 10^9/L$  [normal laboratory levels,  $1.00$  to  $3.00 \times 10^9/L$ ]). The staging studies showed localized disease.



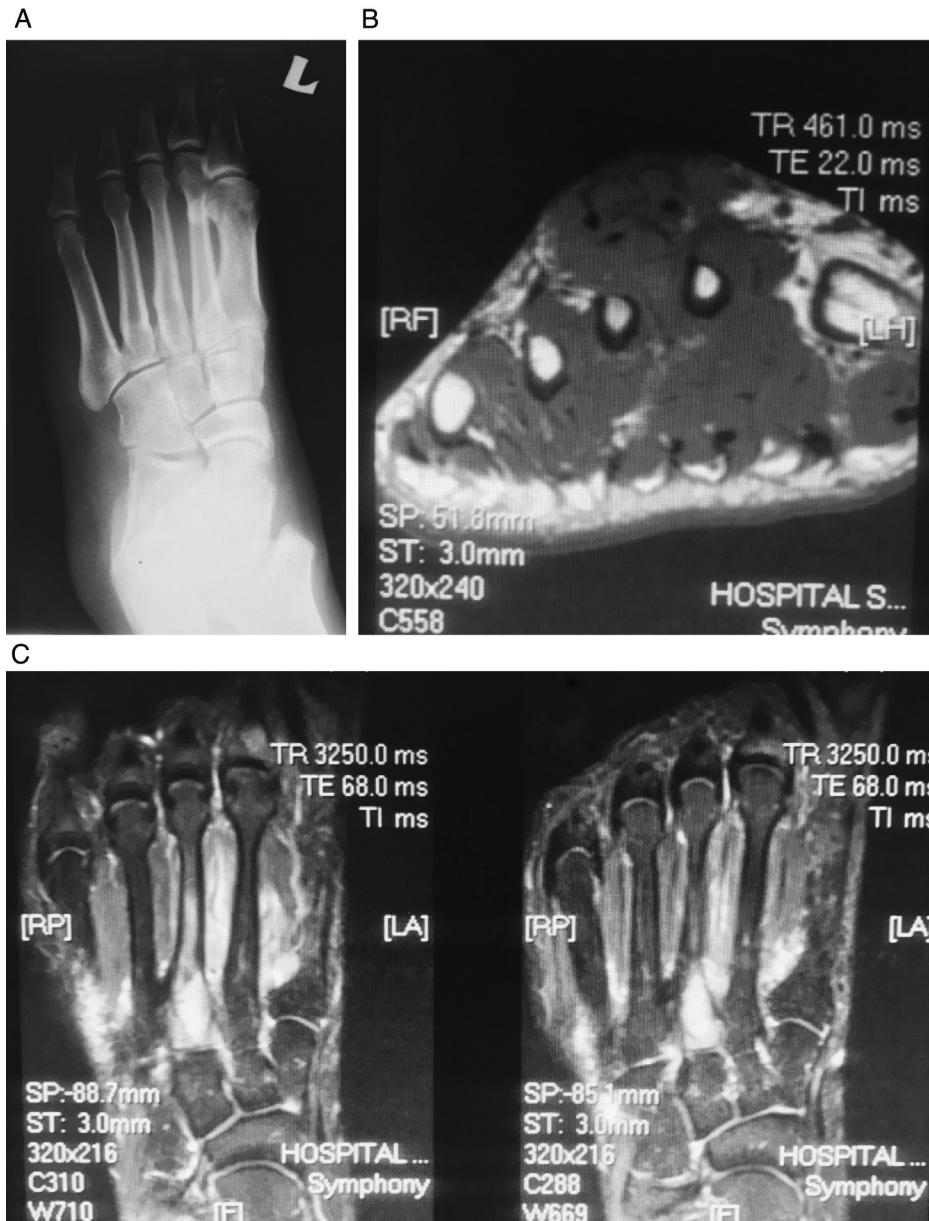
Fig. 1. Swelling over the dorsal aspect of left foot, with hyperpigmentation of the skin overlying the swelling and small areas of hypopigmentation present.

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Conflict of Interest: None reported.

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**Fig. 2.** (A) Plain radiographs of the left foot showed unremarkable findings with no bone changes seen. (B and C) However, magnetic resonance imaging showed a soft tissue lesion on the dorsal aspect of the left foot over the second and third metatarsals, with abnormal bone marrow intensity noted within the third metatarsal.



**Fig. 3.** Intraoperative photograph showing wide resection performed to excise the tumor.

A TruCut<sup>®</sup> (CareFusion, San Diego, CA) biopsy specimen was obtained with the patient under local anesthesia on an outpatient basis at his presentation to the consultation clinic. Because the disease was confined to the third metatarsal and the staging studies showed localized disease, wide excision of the left foot tumor was performed (Figs. 3 and 4). This procedure involved excision of the third metatarsal from the base to the anatomic neck region and all the associated dorsal soft tissue extension of the neoplasm. Intraoperatively, the tumor appeared to originate from the third metatarsal. The defect was covered with a local rotational flap and split-skin graft at the same setting (Fig. 5). Because clinically, we found no evidence of lymph node involvement, sentinel node biopsy was not performed. In addition, neoadjuvant chemotherapy is not administered at our institution for melanoma.

Histopathologic examination of the excised mass and third metatarsal showed tumor composed of sheets of monomorphic cells with ovoid nuclei, prominent nucleoli, and variable amounts of cytoplasm.

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