

Case Report: Multidisciplinary Approach for Resection of Acral Malignant Melanoma with Subsequent Coverage via Full Thickness Skin Graft

Trusha B. Jariwala, DPM¹, James Clune, MD², Michael I. Gazes, DPM, MPH, AACFAS³

¹Third Year Resident, Department of Podiatric Surgery, Yale New Haven Hospital, New Haven, CT, USA

²Plastic Surgeon, Department of Plastic and Reconstructive Surgery, Yale School of Medicine, New Haven, CT, USA

³Podiatric Surgeon, Yale-New Haven Foot & Ankle Surgeons/Northeast Medical Group, Clinical Instructor, Department of Medicine, Yale School of Medicine

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Introduction

Acral melanomas that primarily present on the sole of the feet are a rare subtype of the cutaneous malignant melanomas that most commonly occur in patients of Asian and African descent. This type of melanoma has a poor prognosis likely due to the advanced stage upon presentation [1]. The purpose of this poster is to present a similar case and educate practicing podiatrist on early diagnosis and management of melanoma.

Case Report

72-year-old male presented to his podiatrist's office with a large growth on the plantar aspect of his right foot that has been present for three to four years. Patient was also concerned with increased sanguineous and purulent drainage from the lesion for the past month. On exam, an 11.0 x 6.0 cm pigmented lesion was noted on the plantar midfoot with asymmetric irregular borders, variations in color being black/gray/white, and a bulging hyperpigmented central fungating lesion measuring 6.5 x 5.5 cm with macerated and friable tissue (Figure 1). Patient also had slightly enlarged tubular lymph nodes palpable in the right groin. The rest of the physical exam was within normal limits. His podiatrist took two biopsies, one from the central part of the lesion and one from the peripheral aspect of the lesion as indicated by the red arrows in figure 1; biopsies resulted as malignant melanoma centrally with melanoma in situ peripherally. Patient was subsequently referred to the Plastic Surgeon and Oncologist at the melanoma clinic for further management. A couple of weeks later, the patient was taken to the operating room for an excision of the plantar foot lesion along with a right inguinal femoral complete lymphadenectomy. The lesion measuring 12 cm x 9cm x 1.4 cm was excised with ~two centimeters margins circumferentially and marked appropriately with orientation for marginal specimen analysis (Figure 2). Centrally the lesion was noted to be invading the plantar fascia, so the central part of the fascia was also resected leaving about a 13 cm x 8 cm defect in the foot (Figure 3). Pathology resulted with extensive residual melanoma with no involvement of the margins (Figure 7, 8).

Negative pressure wound therapy was used for the foot which the patient continued for next 4 weeks (Figure 4). About a month from the first surgery, patient was taken back to the operating room for application of a full thickness skin graft that was harvested from the left lower abdomen area (Figure 5). The patient was also treated with immunotherapy and likely will stay on it for life. About 3 months later, the graft site healed completely (Figure 6).



Histology Report

Tumor summary:

Size: 9.1 cm x 6 cm x 0.95 cm

Histology Type and Stage: Acral Melanoma, Stage IIID (T4bN3M0)

Mitotic Rate: 5 mitoses/mm²

Ulceration: Present

Lymphovascular Invasion: Present

Margins: Uninvolved by invasive melanoma

Satellite Metastasis: Present within 2 cm of main tumor

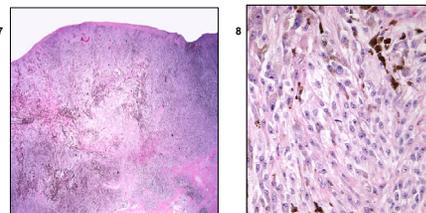
Lymph Node summary:

Site: Right Inguinal femoral lymph nodes

Size: 15 cm x 8.3 cm x 3 cm aggregate of fibro-adipose tissue

Impression: 3/7 lymph nodes with metastatic melanoma on H&E staining

*This profile is suggestive of metastatic acral melanoma with uninvolved margins



Discussion

As practicing Podiatrists, we should perform thorough physical exams and screenings for concerning skin lesions in patients with high risk factors including East Asian (Chinese, Korean, Singaporean), African descent, or any dark-skinned individuals [1]. Patients with these risk factors complicated by other systemic conditions, including those involving peripheral neuropathy, should have regular screenings for melanomas as part of their diabetic foot screening. Initially, when patients present for evaluation, excisional or punch biopsy (for large lesions) should be performed to evaluate the depth of the lesion [2]. ABCDE rule (asymmetry, borders irregular, color variation, diameter >6mm, evolving size, shape or color) can be applied for clinical criteria [3]. Surgical management should be completed with a multidisciplinary approach involving Dermatologists, Plastic Surgeons, or General Surgeons to determine the margin of the local excision as well as need for any lymph node resection. Oncologists are often part of the melanoma team for appropriate immunotherapy such as chemotherapy, radiation or even immunomodulators [2].

Conclusion

Essentially, Podiatrists play a significant role in the care of patients with peripheral neuropathy. When patients present for evaluation, including routine follow ups, a thorough examination is necessary to ensure a concerning condition is not missed. The treatment of malignant melanoma of the foot should be a group effort, including in this case, Podiatry, Plastic Surgery, and Oncology. As a Podiatrist, we should screen patients with high risk factors as mentioned above with a goal of early diagnosis and improved outcome.



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