Case Report

A HIDDEN FOOT MELANOMA'S PATH TO THE INGUINAL NODES: DIAGNOSTIC PITFALLS AND THERAPEUTIC CONSIDERATIONS

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Abstract

Malignant melanoma of the lower limb and foot frequently metastasizes to the inguinal lymph nodes, carrying a poor prognosis akin to other tumors with distant spread. Due to patient unawareness, foot melanomas are often misdiagnosed or undetected, delaying diagnosis. In rare instances, the popliteal fossa serves as the initial site of nodal metastasis, with popliteal metastasis rates in lower extremity melanomas ranging from 0.3% to 7%. Concurrent popliteal and inguinal lymph node metastases are exceptionally uncommon. We report the case of a 67-year-old woman presenting with a right inguinal mass, later diagnosed with metastatic malignant melanoma following surgical excision. Further history revealed a prior excision of a lesion on the right sole of the foot without histopathological analysis, suggesting an undiagnosed primary melanoma. This case underscores the diagnostic challenges of foot melanoma and the rare potential for atypical metastatic patterns.

Key Words: Malignant melanoma, Inguinal lymph node metastasis, Lower extremity melanoma, Misdiagnosis

Introduction

Malignant melanoma is a highly aggressive skin cancer, with a median overall survival of less than one year for metastatic cases[1]. Melanoma below the knee has a unique epidemiological profile, with studies indicating a higher prevalence among women and individuals in their fifties and sixties[2]. Lesions on the sole are often misdiagnosed as other skin conditions, with misdiagnosis rates ranging from 25% to 66%[4,5]. More obvious lesion involving areas like face typically prompt faster action from patients and clinicians[4]. Delayed diagnosis due to misidentification is critical, as distant lymph node metastasis significantly worsens survival outcomes[6]. However, further research is needed to explore whether plantar melanoma may follow atypical drainage patterns, potentially contributing to delayed detection of metastasis.

This report describes the case of an elderly woman who presented with a lump in the right inguinal region. Following evaluation, she underwent an excisional biopsy, which revealed melanomatous deposits. Further investigation uncovered a prior history of a skin lesion on the right sole of her foot, previously excised at a local hospital without histopathological analysis. This correlation shows that the older lesion was malignant melanoma. This case highlights the potential for delayed diagnosis of foot melanoma due to its inconspicuous location.

Case Summary

A 67-year-old postmenopausal woman with a history of poorly controlled type 2 diabetes mellitus presented to the surgical outpatient department with a three-month history of a right inguinal mass. The mass had an insidious onset and was progressively increasing in size. It was painless, non-tender, and showed no change in size with coughing or straining. The patient denied any history of trauma, fever, bleeding or discharge per rectum or vaginum, regression in the size of the lump, or multiple sexual partners.

Additionally, the patient reported a history of a raised, black-brown lesion on the sole of her right foot with history of intermittent bleeding from it. This lesion was reportedly excised at a local medical facility one year ago, but no records regarding the procedure or

histopathological examination were available. On physical examination, a firm to hard, non-pulsatile mass measuring 5x5 cm was identified in the right inguinal region. The mass had limited mobility from underlying structures, was not fixed to the overlying skin, and did not demonstrate a cough impulse. (Figure A)

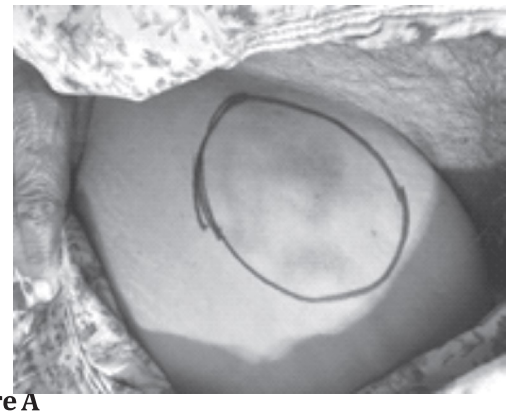

Figure A

Investigations

FNAC of the groin lesion: atypical cells with high N:C ratio around vesicular nuclei and prominent nucleoli with abundant cytoplasm. Few cells with eccentric nuclei and few with cytoplasmic projections were also seen, findings were those of malignant aspirate possibly squamous in origin.

Ultrasound Right Inguinal Region: a large conglomerated lymph node with central echogenic material measuring 2.7cm in SAD in right inguinal region likely necrotic lymph node (figure B).

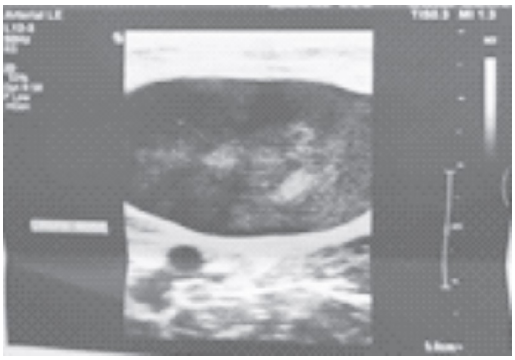

Figure B

PET-CT was done to find the primary lesion and to rule out any other lesions. The findings were suggestive of hyper metabolic lymph node mass in the right inguinal region measuring 5.2 x 4.6cm (SUV max 7.04) favoring mitotic pathology. No abnormal hyper metabolic lesion elsewhere in the body (figure C).

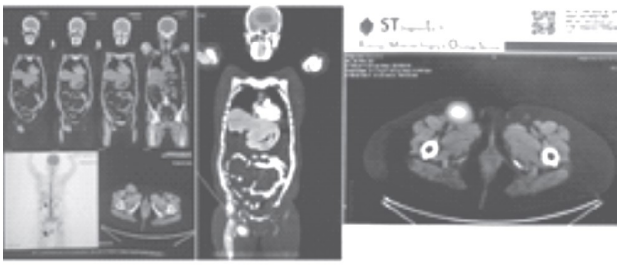

Figure C

MRI Pelvis and Right Inguinal Region: Heterogeneously hyperintense lesion is seen in right inguinal region, showing restriction on DWI. On post contrast scan showed vivid enhancement, likely lymph nodal mass. Anteriorly it is causing contour bulge, posteriorly it is indenting pectineus muscles, however intervening fat planes are maintained. Altered T2 signal intensity is seen in the skin overlying this lesion suggestive of edema (figure D).

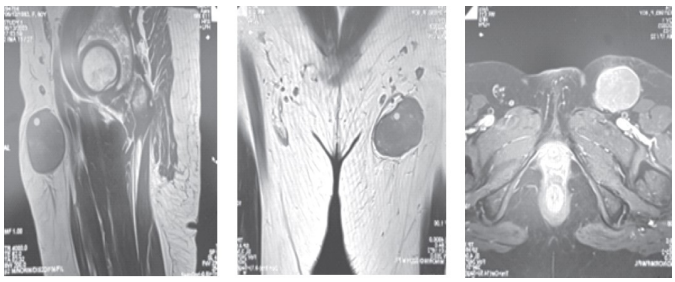

Figure D: (Green dots showing the lesion in Sagittal, Coronal and Axial sections)

Procedure Done

The patient underwent a wide local excision of right groin mass and the specimen was sent for histopathological examination (Figure E1, E2, E3).

Figure E1
Excision of right inguinal mass

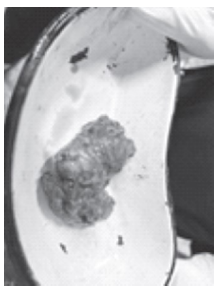

Figure E2
Excised specimen of right inguinal mass

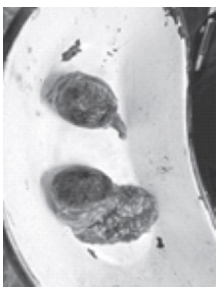

Figure E3
Excised specimen of right inguinal mass (gross examination)

Histopathology

Inguinal Lymph node with H&E stain shows replacement of lymphoid deposits with metastatic deposits of malignant melanoma. High power view shows malignant cells with intracytoplasmic melanin deposits (Figure F1, F2).

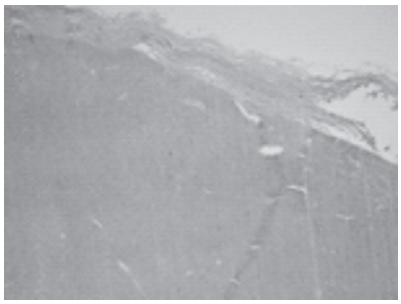

Figure F1
HPE of right inguinal mass
(H&E stain in 200x)

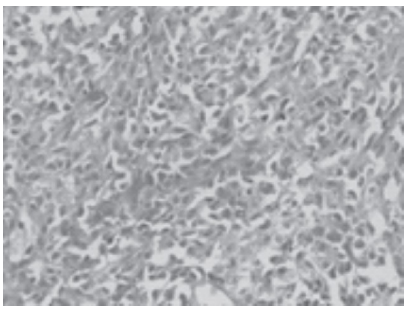

Figure F2
HPE of right inguinal mass
(H&E stain in 400x)

Discussion

Costa SR et.al (2008) suggested plantar melanoma has a particularly poorer prognosis compared to other sites of the body and clinical differentiation between early metastatic melanoma and melanocytic nevus is sometimes very difficult due to similar presentation. These factors lead to delay diagnosis which eventually results in development of thicker lesions and metastasis.[6]

Popliteal lymph nodes are the first station for the lymphatic drainage of squamous carcinomas and sarcomas of lower leg.[8-10] Metastases from below-knee melanomas commonly go through popliteal nodes and then arrive to inguinal lymph node stations. In our case, the FNAC initially suggested squamous origin and the patient underwent wide local excision of the inguinal mass. Further histopathological examination revealed metastatic deposits of malignant melanoma. There was no evidence of any active melanoma at presentation, the palpable inguinal mass corresponded to be the primary disease.

Only 2.5% of patients with lower extremity melanoma had isolated inguinal node metastasis, while 11.8% had combined popliteal and inguinal node metastasis2. Patients with lower leg melanomas have a survival advantage as high as 25% following prophylactic lymph node dissection.[8] As the histopathology demonstrated melanotic deposits, we later did a prophylactic Popliteal lymph node dissection with complete inguinal lymph node dissection because of the conferred survival advantage as well as the possibility of a false-negative PET scan result.

This case highlights the importance of early detection and diagnosis of melanoma, especially in acral areas, such as the sole of the foot, where the disease is often neglected or misdiagnosed. Early diagnosis of melanoma can improve the prognosis and survival of the patients. Therefore, it is essential to educate the public and the healthcare providers about the risk factors, signs, and symptoms of melanoma, and to promote the regular skin examination and biopsy of any suspicious lesions.

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