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Spindle Cell Melanoma Masquerading as a Lipoma: An Interesting Case Study on the Presentation of a Rare Cancer

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Abbreviations: MM: Millimeters; MRI: Magnetic Resonance Imaging; PET: Positron Emission Tomography; H&E: Hematoxylin and eosin

Abstract

Background: Overall survival is directly correlated to melanoma thickness and definitive surgical excision. Spindle cell melanoma is a rare subtype of malignant melanoma and particularly difficult to diagnose. Identification of histopathological features and referral to specialists are essential.

Case presentation: We describe the case of an 86-year-old male who presented to his family medicine physician with complaints of a large 40 mm mass on his right posterior trunk which was clinically diagnosed as a lipoma. This mass was subsequently removed in his family physician's office as an office procedure. Less than eight months post-excision, the tumor had erupted through the incision site. At time of surgical oncologist evaluation, the tumor was pedunculated and measured 92 mm at its greatest diameter. This tumor was subsequently biopsied to reveal spindle cell melanoma with thickness of at least 22 mm. Wide local excision was performed with complete removal of the tumor with negative margins.

Conclusions: Our report supports the importance of early and correct diagnosis of cutaneous melanoma which can often be mistaken for other cutaneous lesions, both benign and malignant. In these situations, it is important to obtain a tissue biopsy and consult with specialists in pathology and surgical oncology/dermatology to ensure timely, appropriate treatment.

Background

Early detection and surgical excision remain the gold standard as early treatment is directly correlated to survival in patients with malignant melanoma [1]. Specifically, since melanoma is particularly aggressive, delayed diagnosis leads to increased thickness of the tumor, which is associated with worse prognosis. Lo *et al* reported a 93.4% 10-year survival rate for patients with melanomas less than 0.8 millimeters (mm) in thickness, while survival in patients with lesions greater than 0.8 mm was only 32% [2].

Spindle cell melanoma is a rare malignant melanoma subtype with incidence ranging between 3-14% of the more than 70,000 new cases of melanoma diagnosed each year [3,4]. Although rare, this subtype has been found predominately in Caucasian males between 60-80 years old [5].

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Diagnosis is challenging as the lesions can occur anywhere on the body and are often mistaken for other, non-melanomatous lesions such as scarring, inflammation, epithelial sarcomas, cutaneous carcinomas, or lipomas [6,7]. Since diagnosis on physical exam can be difficult, histological evaluation is important. Morphologic features of spindle cell melanoma include fascicular arrangement of tumor cells showing elongated and tapered nuclei and variable nuclear atypia, but immunohistochemical staining is essential for definitive diagnosis [8].

In this case report, we describe a case of cutaneous spindle cell melanoma that was originally clinically misdiagnosed as a lipoma and removed in an outpatient family medicine office. This lesion subsequently recurred and erupted through the previous incision site before the patient was referred to a surgical oncologist, properly diagnosed with histology of the tumor and widely excised.

Case presentation

An 86-year-old Caucasian male with no personal or family history of skin cancer presented to his family medicine physician with the complaint of a large right posterior trunk mass measuring around 40 mm or 1.5 inches in diameter with surrounding erythema that he had first noticed a month prior (**Figure 1A**). Of note, the patient had tried to obtain an appointment with dermatology, but they did not have availability for another four months. At that time, he was diagnosed with a presumed lipoma and scheduled for elective resection in the outpatient setting at the family medicine procedure clinic which occurred without complication (**Figure 1B**). The specimen was not sent for pathology analysis at that office procedure.

Eight months later the patient reported poor wound healing and what appeared to be a recurrence of the tumor. The patient was referred to a surgical oncologist's office where an ulcerated, pedunculated lesion which had erupted through the skin and measured around 150 mm or 6 inches in diameter was noted (**Figure 1C**). Incisional biopsy was performed in the office which revealed ulcerated malignant melanoma, at least 2.2 mm in thickness.

*Please check the sizes on the sentence above. I believe that is was over 6 cm in size, not inches, which is shown the photos with the ruler.

The patient was referred for medical oncology melanoma evaluation as well well which included a brain MRI and PET scan, as well dermatology evaluation with additional skin biopsies at the dermatologist's office to surveil the surrounding skin for evidence of melanoma, all of which were negative. At that time, multidisciplinary melanoma tumor board decision was made to proceed with surgery for wide excision and complex primary closure with fasciocutaneous flaps and drain placement (**Figure 1D**).

Pathology from the wide local excision revealed ulcerated malignant melanoma with spindle cell features, 92 mm in greatest dimension, at least 14 mm in thickness with negative margins (**Figure 2A**). The majority of the tumor consisted of a fascicular proliferation of tumor cells with spindled cytomorphology, while some foci contained epithelioid tumor cells with round nuclei and more abundant cytoplasm (**Figure 2B/C**). Immunohistochemical stains showed the tumor cells were diffusely positive for SOX-10 and S-100, and negative for HMB45, Melan-A, pancytokeratin, p40, CK5/6, smooth muscle actin and desmin (**Figure 2D**). Molecular testing revealed a BRAF p.G596R mutation, further supporting the diagnosis.

No evidence of recurrence was noted at two-month follow-up and the patient is in good health. Given his age, the patient elected to forgo any adjuvant therapy, but will be followed closely for evidence of disease recurrence.

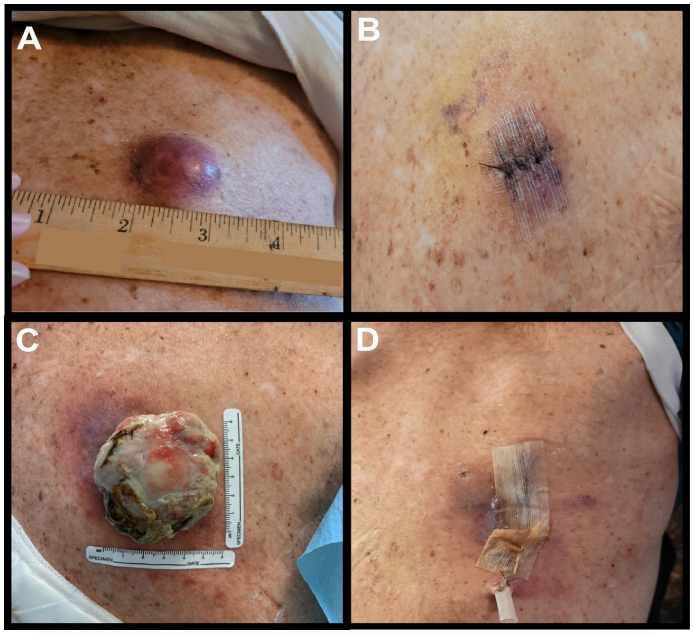

Figure 1: **(A)** Original lesion on right posterior trunk; **(B)** Lesion incision site following outpatient removal of presumed lipoma; **(C)** Recurrent lesion on right posterior trunk through incision site eight months following removal; **(D)** Lesion incision site and drain following wide local excision of melanoma.

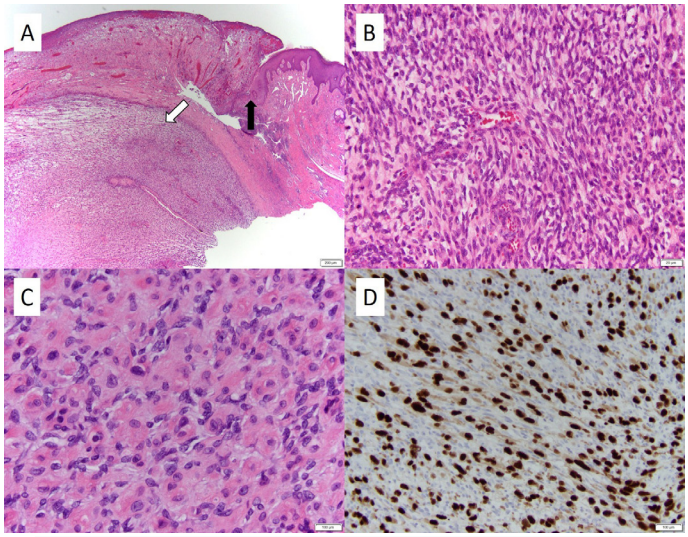

Figure 2: **(A)** Histopathologic examination of the tumor revealed extensive ulceration of the overlying epidermis (black arrow: interface between ulcerated and intact epidermis; white arrow: tumor) (H&E, 2x). **(B)** The majority of the tumor showed spindle cell features, with fascicular arrangement of the tumor cells and elongation and tapering of the nuclei (H&E, 20x). **(C)** Focal areas showed epithelioid morphology, whereby the tumor cells displayed round nuclei and abundant eosinophilic cytoplasm (H&E, 40x). **(D)** Immunohistochemical stain for SOX-10 showed strong nuclear positivity in the tumor cells (20x).

Discussion

Our report describes a rare case of spindle cell melanoma which was initially misdiagnosed clinically as a lipoma. Although uncommon, the patient's age and race matched previously identified risk factors for the pathology [5]. This case highlights the importance of tissue biopsy and, in some cases, specialist diagnosis, specifically when dealing with difficult cutaneous lesions with wide differentials.

Mistaking malignant cutaneous lesions for a lipoma is previously reported in the literature including lipoblastoma, liposarcomas, mesenchymal neoplasms, and melanoma [9-11]. In the case of melanoma, classically, the ABCDE method (asymmetry, border irregularity, color variations, diameter, and evolution) has been employed for diagnosis, but is insufficient for more rare subtypes [12]. For example, nodular and amelanotic melanomas are commonly a single color without varying border characteristics or asymmetry [13]. However, in the case described there were overlying skin changes to the lesion, something not normally seen in a simple lipoma, this could have prompted providers to consider an alternative diagnosis.

Often these diagnoses can be differentiated by histopathologic exam, which was unfortunately not performed within the first resection of this case. The differential diagnosis for a cutaneous spindle cell lesion is broad and includes both benign (e.g., dermatofibroma, neurofibroma, spindle cell nevus) and malignant (e.g., spindle cell or desmoplastic melanoma, spindle cell squamous cell carcinoma, dermatofibrosarcoma protuberans, leiomyosarcoma) entities [8]. In this case, SOX-10 and S-100 positivity and the presence of a BRAF mutation, support the diagnosis of malignant melanoma. Spindle cell melanoma typically lacks expression of other traditional melanocytic markers like HMB45 and Melan-A, emphasizing the need to employ a broad panel of immunohistochemical stains to achieve an accurate diagnosis [14,15].

In our case, a long wait time for dermatologic exam prompted the initial removal at the outpatient office. This issue is not uncommon and, recently, tele-dermatology has been employed to reduce wait time [16]. Specifically in the diagnosis of melanoma, tele-dermatology performed by a dermatologist had comparable diagnosis and management outcomes to historically reported face-to-face consultations [17].

Importantly, while some studies have shown no difference in melanoma diagnosis rate in the primary care setting compared to a specialist's office, when any doubt exists, it is recommended to refer to a dermatologist or surgical oncologist [18]. In the case of our patient, a favorable outcome was still achieved; however, this may not be the case for others.

Conclusion

We report a rare case of spindle cell melanoma, originally mistaken for lipoma. Following removal, the lesion recurred and erupted through the skin requiring formal wide local excision. This case highlights the importance of tissue diagnosis and subspecialist input in difficult cases, especially for rare cutaneous skin lesions.

Declarations

Ethics approval and consent to participate: Not applicable.

Consent for publication

Consent for publication was obtained from the patient presented in this submission

Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study

Competing interests

The authors declare that they have no competing interests

Funding

No funding was received for this submission

Authors' contributions

RL analyzed and interpreted the patient case including literature review for the case presentation. WL, SMG, and AW were major contributors to the writing and editing of the manuscript. All authors read and approved the final manuscript.

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