American Journal of Cancer Case Reports

http://ivyunion.org/index.php/ajccr/

Case Report

Melanoma of Unknown Primary Presenting as a Single Back Mass

Siu-Yuan Lai Huang, Anitha Srinivasan*, James Mariadason, and Marc Wallack

Department of Surgery, Metropolitan Hospital, New York Medical College, United States

Abstract: In this report, we present a case involving the discovery of metastatic melanoma within a mid-right back mass with the clinical presentation of an epidermoid cyst, but the histological qualities of a lymph node. A 43-year-old male presented with a 5 cm x 5 cm cyst-like mass on his mid-right back that had become painful over the last year and consequently underwent three surgical procedures. First, initial excision of the back mass and histological examination resulted in a diagnosis of metastatic melanoma without epidermal involvement. This was followed by re-excision of the back mass site and sentinel node excision, and finally, lymph node dissection of the right axilla. Of the lymph nodes examined, the sentinel node in the right axilla alone showed evidence of melanoma. The absence of a primary lesion or any histological evidence of regression in a presumed primary site resulted in a diagnosis of melanoma of unknown primary, or occult primary melanoma. To our knowledge, this is the first documented case of an occult primary melanoma presenting as a single mass representing a lymph node in the back.

Keywords: Malignant melanoma with unknown Primary, Malignant Melanoma within lymphatic tissue, Malignant Melanoma in the dermis and subcutaneous tissue, Malignant Melanoma in posterior trunk with no established Lymphatic drainage system

Received: February 22, 2017; **Accepted**: March 16, 2017; **Published:** March 28, 2017

Competing Interests: The authors have declared that no competing interests exist.

Consent: Consent was taken from the patient for publication of this case report.

***Correspondence to:** Anitha Srinivasan, Department of Surgery, Metropolitan Hospital, New York Medical College, United States

E-mail: Anitha.Srinivasan@nychhc.org

Introduction

Melanoma of unknown primary (MUP), also known as occult primary melanoma, is a term applied to a metastatic melanoma that is initially discovered in a secondary site (such as a lymph node, distant skin or subcutaneous tissue, or visceral site) rather than as a primary cutaneous, mucosal, or ocular tumor [1]. As the name suggests, a patient with MUP has no evidence of a primary lesion. MUP has an incidence of 3.2%, is found in males twice as often as females, and most often presents in the 4th and 5th decades of life. In a review of 4433 MUP patients, 1067 patients were found to have lymph node involvement in the axilla, neck, groin, parotid gland, or some combination of those sites [2].

There are two prevalent theories behind MUP. The first, and less likely, is that MUP arises from melanocytes that have migrated to a lymph node and become malignant. The second, and more accepted, involves spontaneous partial or complete regression of the primary tumor after it has metastasized [3]. Though 49 cases of completely regressed primary cutaneous melanoma have been documented, a presumed primary site with histological evidence of regression is not always possible to find in a patient, leading to a more general diagnosis of MUP [4].

Case Report

A 43-year-old male presented with a 5 cm x 5 cm soft, cyst-like mass on his mid-right back, attached to the skin with a soft apex and possible punctum. Though this mass had been present for 4-5 years, the patient reported that it had increased in size over the last year and had become painful. The patient noted one episode of purulent discharge but denied any other complaints. The patient denied any past medical history, past surgical history, or family history of cancer (skin or otherwise).

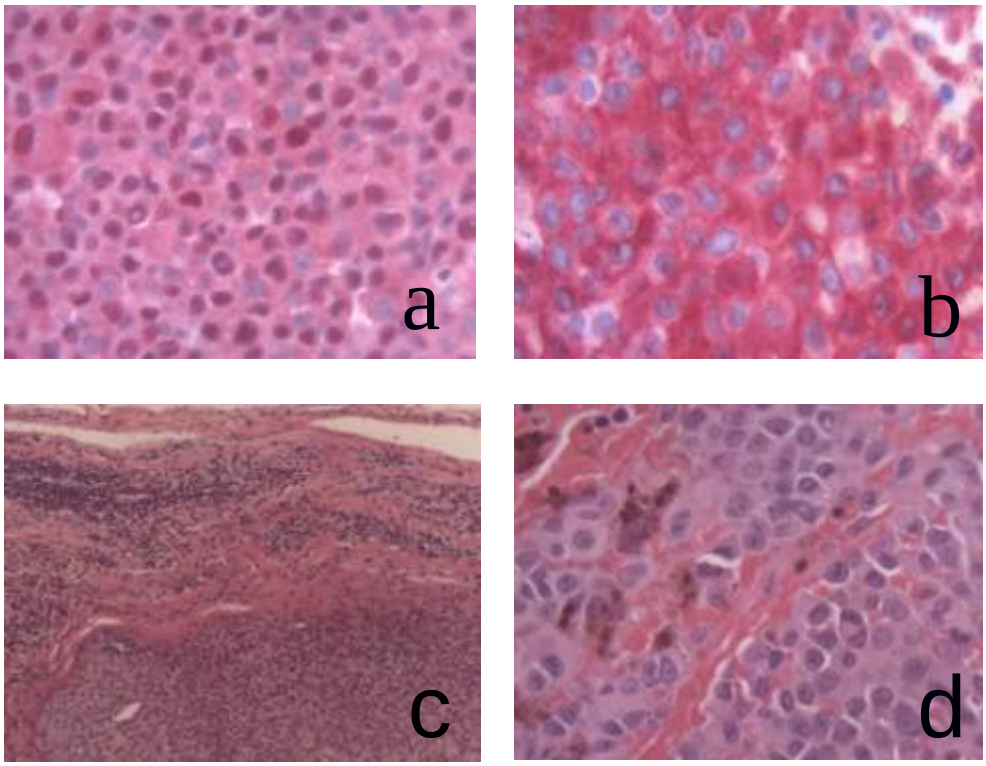


Figure 1 Histology of the patient's original back excision. A. Positive S-100 stain. 400x. B. Positive Melan-A stain. 400x. C. Melanoma tumor with surrounding capsule and scattered lymphoid tissue. 100x. D. Pigmented melanoma cells within the mass with H&E stain. 400x.

The mass was excised completely and no sebum was noted. The patient tolerated the procedure well. Grossly, the specimen was a focally hemorrhagic soft tissue mass measuring 5 cm in diameter. Histopathological examination resulted in a diagnosis of malignant melanoma in the dermis and subcutaneous tissue, with no involvement of the epidermis. The neoplasm stained positive for S100 and Melan-A [Figure 1], and stained negative for cytokeratin. The neoplasm was diffusely positive for BRAF-V600E, which correlates with a V600E BRAF mutation. Though the mass was initially thought to be an epidermoid cyst, histological examination showed evidence of a capsule surrounding the tumor with patches of lymphoid tissue along the perimeter [Figure 1c], suggesting the tumor may have grown within a lymph node.

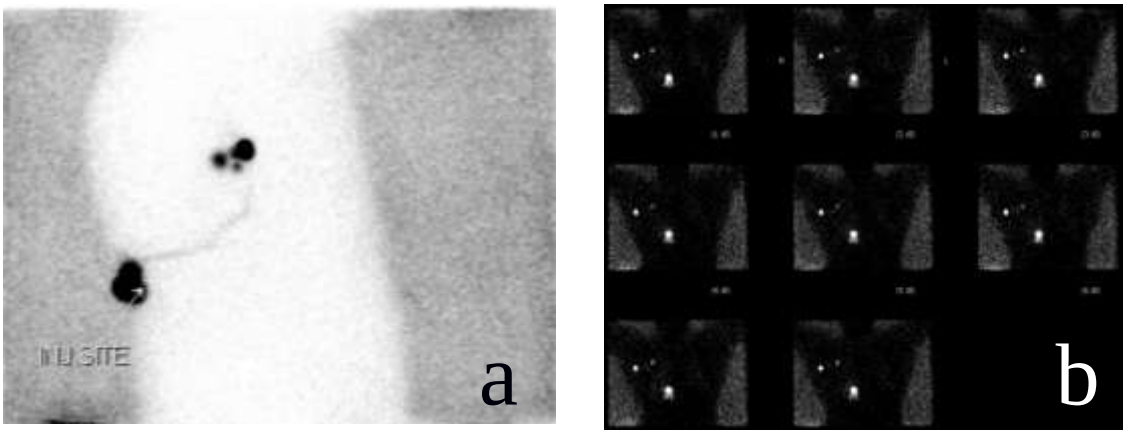
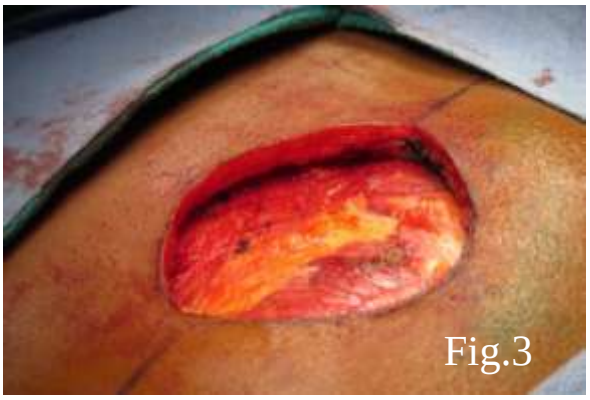


Figure 2 Lymphoscintigrams performed 1 week apart, both showing activity limited to at least 3 foci in the right axilla. A: right lateral view, first scan. B: anterior dynamic view, repeat scan.

In follow-up visits, the patient denied any complaints and the excision wound healed well, without drainage, edema, or erythema. Per the pathologist's recommendation, the decision was made to perform a wide re-excision of the site of melanoma to determine the depth of invasion of the specimen, which would help with our initial diagnosis. Prior to this second surgery, the patient underwent a PET/CT scan followed by a lymphoscintigram. The PET/CT showed no abnormal fluorodeoxyglucose (FDG) uptake and no evidence of regional or metastatic disease. The lymphoscintigram showed three discrete foci of activity in the right axillary region only. A repeat lymphoscintigram performed 1 week later confirmed the findings in the right axilla and no new areas of activity were identified. [Figure 2]

The re-excision and depth of invasion study were performed approximately two months after the original excision. The back re-excision included the fascia of the back and a skin margin of > 2 cm. [Figure 3] The sentinel lymph node was localized by nuclear injection in the right axilla. Methylene blue was injected after the anesthetic induction, and a radiotracer was used to place the incision in the appropriate area. The blue and radioactive sentinel lymph node was visualized and excised [Figure 4]. The patient tolerated the procedure well and there were no complications.

Both specimens were sent for histopathological examination. The back mass excision showed no evidence of residual melanoma, while the sentinel lymph node contained an intraparenchymal microscopic focus of metastatic melanoma measuring 0.6 cm in diameter without extracapsular extension. This was confirmed with positive Melan-A and S100 immunostains [Figure 5].



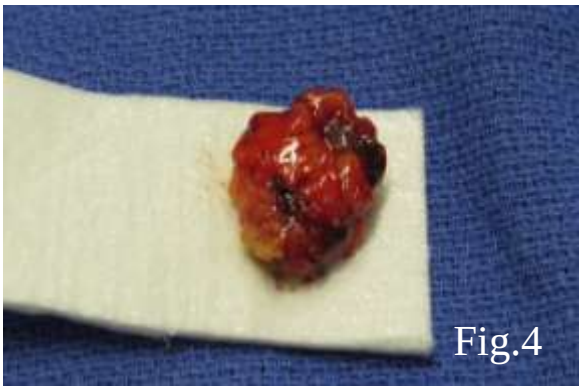


Figure 3 Surgical re-excision of the back mass site with a skin margin of >2 cm.

Figure 4 Sentinel lymph node excised from the right axilla.

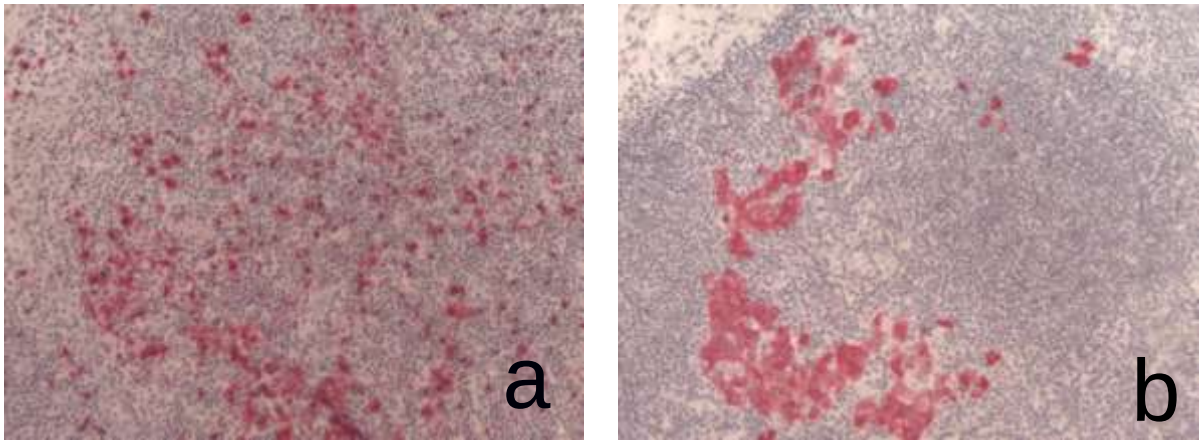


Figure 5 Histology of the excised sentinel node. A. Positive S100 stain. 100x. B. Positive Melan-A stain. 100x.

Following the back re-excision and depth of invasion study, it was noted that the patient had moderate edema at the proximal and distal ends of the back incision, but he denied any pain or fever. The axillary incision healed well with no signs of infection. The patient was referred to medical oncology and a chest x-ray, brain CT without contrast, and an abdomen/pelvis CT with contrast were ordered to rule out distant metastasis. The results of all three studies were unremarkable.

The patient's melanoma was classified as Stage IIIA (T3N1aM0) and the medical oncologist recommended a lymph node dissection of the right axilla based on the positive lymphoscintigram. The axillary fat pad containing level I and level II nodes was separated from the axillary tail of the breast and excised, and it measured 12 cm x 6 cm x 2.5 cm. A #10 Jackson-Pratt (JP) drain was left in place. The procedure was tolerated well and there were no complications. The patient was able to manage the JP drain appropriately at home and this drain was removed on postoperative day 11.

Histopathological examination showed that the 13 lymph nodes removed were all negative for metastatic melanoma. The patient will continue to follow up with the surgery and medical oncology departments periodically and no further treatments or procedures are scheduled at this time.

Discussion

MUP has been well-documented in the literature, but this case is unique in that the patient's melanoma metastasized from a currently undetectable primary tumor to an apparent lymph node in his mid-right back, presenting as a 5 cm x 5 cm mass. From the back, metastasis was limited to one lymph node in the right axilla, which also added to the complexity of this case. This pathology agrees with established lymphatic drainage maps [5]. Although the posterior trunk is not a region with established lymph node chains, it is one of the most common locations of interval nodes, which can lie anywhere along the path of a lymphatic collecting vessel [5]. Given this knowledge and the histopathological characteristics of the excised mass, it is likely that the patient's melanoma infiltrated an interval node in the back. Previous reports of MUP with lymph node involvement have only listed the axilla, groin, neck, and parotid gland as observed locations [2], and we have been unable to find any prior reports of MUP discovery in an interval node in the back.

At this point, no further treatments are recommended since surgical resection of both detectable metastatic sites was successful. Had the patient's solitary mass been non-resectable, the presence of a BRAF mutation would have made him eligible for a BRAF inhibitor treatment such as dabrafenib [6]. Should the patient experience a recurrence in the future, BRAF inhibitor therapy may be considered. Per the National Comprehensive Cancer Network, interferon alfa or high-dose ipilimumab are also potential adjuvant treatments for Stage III melanoma with a positive sentinel node [7].

Because the histopathological study of the initial back mass excision showed no epidermal involvement, an alternate diagnosis that was considered was primary dermal melanoma (PDM), where the primary tumor originates in the dermis, subcutaneous tissue, or both [1]. PDM makes up <1% of all melanomas and does not metastasize, which likely contributes to the higher 5-year survival rates observed in PDM patients compared to primary cutaneous melanoma or MUP [8]. After the patient's sentinel node tested positive for S100 and Melan-A, PDM was ruled out. One PDM cohort study found that all 9 of their subjects tested negative for BRAF-V600E, for which our patient tested positive. Teow et al. acknowledge that their sample size is too small to determine whether the absence of BRAF-V600E is a distinguishing characteristic of PDM, but future cases of PDM should be tested for BRAF mutations [9]. No reliable histopathological or immunohistochemical distinction between PDM and metastatic melanoma has been established, and an increased sampling of PDM patients may support BRAF-V600E as a candidate.

Conclusion

In summary, we have documented a case of melanoma of unknown primary presenting as a single mass on the mid-right back with histopathological characteristics of a lymph node. This was unexpected given its anatomic location, leading us to believe this is an unusual case where a MUP has infiltrated an interval lymph node in the back.

Consent

The patient signed a standard consent form allowing the authors to use both his medical records and images from the case in his writeup. We would like to thank him for his cooperation.

Abbreviations

MUP: melanoma of unknown primary
FDG: fluorodeoxyglucose
JP: Jackson-Pratt
PDM: primary dermal melanoma

References

1. Bailey EC SA, Tsao H, Mihm MC, Jr., Johnson TM, Jr. In: Katz SI GL, Gilchrest BA, Paller AS, Leffell DJ, Wolff K, ed. *Fitzpatrick's dermatology in general medicine*. **McGraw-Hill**; 2012
2. Kamposioras K, Pentheroudakis G, Pectasides D, Pavlidis N. Malignant melanoma of unknown primary site. To make the long story short. A systematic review of the literature. ***Crit Rev Oncol Hematol***. 2011, 78:112-126
3. Vijuk G, Coates AS. Survival of patients with visceral metastatic melanoma from an occult primary lesion: A retrospective matched cohort study. ***Ann Oncol***. 1998, 9:419-422
4. Margaritescu I, Chirita AD, Vasilescu F. Completely regressed primary cutaneous melanoma - difficulties in diagnosis and classification. ***Rom J Morphol Embryol***. 2014, 55:635-642
5. Uren RF, Howman-Giles R, Thompson JF. Patterns of lymphatic drainage from the skin in patients with melanoma. ***J Nucl Med***. 2003, 44:570-582
6. Rastrelli M, Pigozzo J, di Maggio A, Tosi AL, Sileni VC, Rossi CR. Neoadjuvant treatment with dabrafenib of unresectable localizations from occult melanoma. ***Melanoma Res***. 2014, 24:413-414
7. Network NCC. Nccn clinical practice guidelines in oncology: Melanoma. 2016
8. Swetter SM, Ecker PM, Johnson DL, Harvell JD. Primary dermal melanoma: A distinct subtype of melanoma. ***Arch Dermatol***. 2004, 140:99-103
9. Teow J, Chin O, Hanikeri M, Wood BA. Primary dermal melanoma: A West Australian cohort. ***ANZ J Surg***. 2015, 85:664-667