

A Report of a Rare Case of Breast Metastasis from Cutaneous Malignant Melanoma

Abstract

Benign and primary malignant breast tumors are rather common, but secondary tumors in the breast from extramammary malignancies are uncommon. Breast metastases from melanoma are rare but could reflect a widespread disease. We present a case of melanoma of the right lateral chest wall with metastasis to the right breast and subcutaneous tissue in a postmenopausal female. She was planned for palliative chemotherapy with cisplatin and dacarbazine. Interim imaging after three cycles of chemotherapy showed stable disease. The long-term prognosis of patients with breast metastasis from malignant melanoma is extremely unfavorable.

Keywords: Breast metastasis, melanoma, postmenopausal

Introduction

Malignant melanoma is one of the most rapidly increasing neoplasms in frequency in the world.^[1] Hematogenous or lymphatic metastases from malignant melanoma occur in 20% of cases. Liver, lung, and brain are the common sites of hematogenous metastases although any organ can be involved.^[1] Involvement of the breast by metastatic melanoma is hardly reported, resulting in its very rare clinical consideration.^[2] The breast metastatic melanoma can present as a solitary lesion or as multiple unilateral or bilateral masses, which could be palpable clinically or just incidental findings on imaging.^[3] The correct management of metastatic disease to the breast can prevent unnecessary mutilation.^[4] We present a case of melanoma of the right lateral chest wall with metastasis to the right breast and

subcutaneous tissue in a postmenopausal female.

Case Report

An otherwise well, 55-year-old postmenopausal female presented to us with a history of a right lateral chest wall lump for 3 months. On examination, there was a 12 cm × 8 cm lump with irregular surface and skin pigmentation over the lower-outer quadrant of the right breast and right lateral chest wall. Another small nodule was seen at the right lower back [Figure 1]. She was operated twice for the same mass at a peripheral center in the last 1 year, details of which were unavailable. Trucut biopsy from the right chest wall mass was suggestive of malignant melanoma [Figure 2]. On immunohistochemistry (IHC), the tumor cells were positive for HMB-45 and S-100 [Figure 2]. Contrast-enhanced computed tomography (CECT) scan of the thorax and abdomen and contrast-enhanced

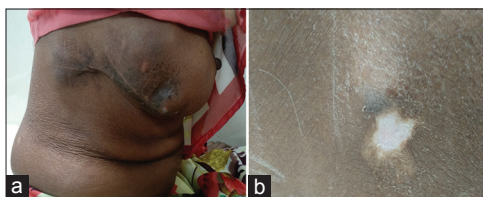


Figure 1: (a) Lump with irregular surface and skin pigmentation over the lower-outer quadrant of the right breast and right lateral chest wall and (b) another small nodule at the right lower back

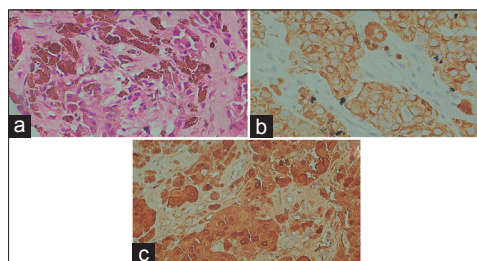


Figure 2: (a) Histopathology suggestive of malignant melanoma, (b) the tumor cells staining positive for HMB-45 and (c) S-100

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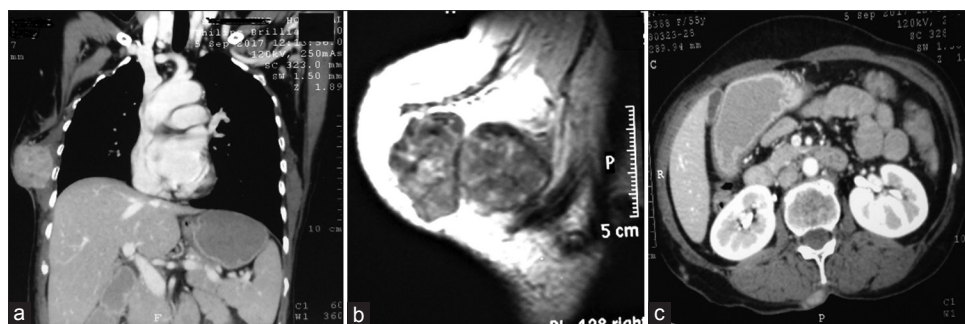


Figure 3: (a) Contrast-enhanced computed tomography scan of the thorax and abdomen revealed well-defined, intensely enhancing heterogeneous mass lesion in the right posterolateral chest wall (coronal view), (b) contrast-enhanced magnetic resonance imaging of the right breast revealed large-lobulated, intensely enhancing, well-defined mass lesion in the right breast, and (c) few subcutaneous metastatic deposits in the right lower back

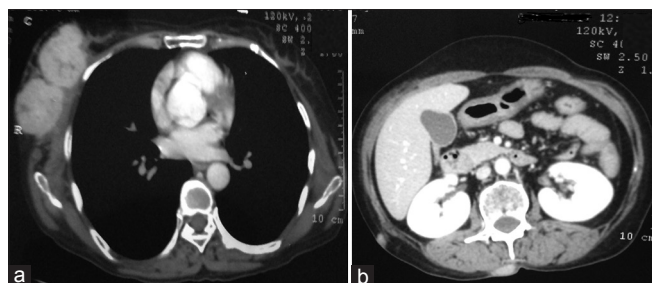


Figure 4: (a and b) Contrast-enhanced computed tomography scan of the thorax and abdomen after three cycles of chemotherapy showed stable disease

magnetic resonance imaging (CEMRI) of the right breast revealed a 32 mm × 19 mm, well-defined, intensely enhancing heterogeneous mass lesion in the right posterolateral chest wall with a large-lobulated, intensely enhancing, well-defined mass lesion (8.2 cm × 4.3 cm × 7.8 cm) in the right breast with few subcutaneous metastatic deposits in the right lower back, suggestive of recurrent mass lesion (primary) in the right posterolateral chest wall with metastatic mass in the right breast and subcutaneous deposits in the right lower back. The mass lesion in the right breast was hyperintense on T1 and isointense on T2, with intense heterogeneous enhancement on postcontrast. The lesion showed restricted diffusion on diffusion-weighted imaging (DWI) [Figure 3]. CEMRI of the brain showed no focal lesions in the brain. The patient was planned for palliative chemotherapy with cisplatin and dacarbazine. Interim CECT scan of the thorax and abdomen after three cycles of chemotherapy showed stable disease [Figure 4].

Discussion

Breast represents an unusual site of metastatic disease from extramammary tumors.^[5] Variable origins of metastases to the breast are represented by lymphomas, melanomas, rhabdomyosarcomas, and lung and ovarian tumors.^[6] Breast metastases from melanoma usually occur in premenopausal and considerably younger women. In half of the cases, the upper-outer quadrant of the breast is involved.^[7] In contrast, our patient was a postmenopausal female and the breast mass was present in lower-outer quadrant of the

right breast. Melanoma exhibits the typical signal intensity on MRI. Melanoma contains a melanin component that contains stable-free paramagnetic radicals, resulting in high signal on T1-weighted images and a low signal on T2-weighted images on MRI. On DWI, melanoma generally shows diffusion restriction and enhances after gadolinium-based contrast agent administration.^[8] Our patient had similar radiological characteristics.

In most cases, metastatic melanoma can mimic a variety of cellular and architecture makeup, including primary breast malignancies. IHC allows a correct diagnosis; tumor cells are positive for S-100 protein, melan-A, and HMB-45, along with no expression for cytokeratin staining, hence helping in differentiating malignant melanoma from other malignant tumors.^[9] Treatment options for metastatic melanoma include close observation, surgical resection of isolated metastases, chemotherapy, and radiation therapy.^[1] Breast metastases indicate a disseminated disease and aggressive surgical procedures should be avoided in view of poor prognosis.^[1]

Conclusion

Breast metastasis from extramammary malignancy is very rare. Generally speaking, in a setting of melanoma, as in our case, these lesions reflect wide disseminated disease and prognosis is extremely unfavorable.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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