

Cutaneous metastases from carcinoma breast: The common and the rare

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ABSTRACT

Cancer metastasis is quite devastating to the patient as well as the physician and may herald the onset, dissemination or recurrence of malignancy. Breast carcinoma metastasis is the most common carcinoma encountered by dermatologists and it presents in various morphological and histological forms. Here, we present two varied cases, the first being the common nodular metastasis from a previously treated intraductal carcinoma and the second, the rarer variant, carcinoma erysipeloïdes as a herald of the invasion of an incompletely treated disease.

Key words: Carcinoma erysipeloïdes, cutaneous metastasis, infiltrating ductal carcinoma

INTRODUCTION

Cancer metastasis may be considered as the most devastating aspect of malignancy, with an overall incidence of 0.7–4.4% in cancer patients.^[1] This may occur as the initial manifestation of undetected internal malignancy or the first sign of dissemination or even as the first sign of recurrence. Some variants of cutaneous metastases require a high index of suspicion as the clinical findings, especially in the early stages, may be very subtle. Although the most common carcinoma to metastasize to the skin is malignant melanoma, seconded by breast carcinoma, breast cancer is very common in females and cutaneous metastasis of breast cancer is the commonly encountered metastasis in clinical practice.^[2,3]

Here, we report two varied cases, the first being the first evidence of disseminated metastatic disease and the second, developing late in the course of the neglected disease.

CASE REPORTS

Case 1

A 56-year-old female, a known case of infiltrating ductal breast carcinoma, successfully treated by mastectomy with axillary lymph node clearance 3 years back,

presented with a painful ulceration over the right chest and the right inner arm along with history of application of antiseptic solution to the area for the past 2 weeks. She gave a history of bone and brain metastasis that were successfully treated with a combination of radio and chemotherapy (*fluorouracil* [5-FU], adriamycin, cyclophosphamide). A clinical diagnosis of irritant contact dermatitis with secondary ulceration was made and she was treated accordingly. She reported aggravation of the lesions after 2 weeks and on examination, was found to develop erythematous infiltrated papules at the borders of the persistent ulcers that were covered with purulent discharge [Figure 1]. She was provisionally diagnosed as a case of cutaneous metastasis of breast carcinoma and a punch biopsy specimen was taken from the edge of the ulcer as well as from an infiltrated papule, which revealed malignant cells invading and replacing the dermal elements in a glandular cord-like manner. Individual cells were highly anaplastic, with prominent nuclei and nucleoli [Figure 2]. At 1 month follow-up, she also developed lymphedema with peau d'orange appearance of the right arm. She was referred to the Oncology Department for further treatment.

Case 2

Another 56-year-old woman complained of progressive, painful, reddish lesions with thickness of the overlying

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skin over the chest, neck and back of 2 weeks duration, with ulceration and discharge overlying the swelling of 1 week duration. Clinical examination revealed indurated erythematous plaques with well-defined margins and superficial erosions and crusting. Neck lesions were intact. There was tenderness and local rise in temperature over the lesions [Figure 3].



Figure 1: Case 1: Large erosions with purulent exudate and surrounding firm skin-colored nodules seen over the right chest and right inner arm

She gave history of carcinoma breast 4 years back and review of her previous medical records showed invasive ductal carcinoma right breast, which was treated with modified radical mastectomy and four cycles of radiotherapy. Metastatic work-up at that point was negative. Later, she was lost to follow-up. A provisional diagnosis of carcinoma erysipeloides was made and a skin punch biopsy substantiated this, revealing focal epidermotropism of lymphocytes in the epidermis with the dermis being replaced by scattered single anaplastic cells and lymphatic emboli of large malignant cells [Figure 4]. Further work-up revealed bone metastasis. She is now on paclitaxel chemotherapy for the metastatic disease and the skin lesions are regressing.

DISCUSSION

Metastasis is defined as a neoplastic lesion arising from another neoplasm with which it is no longer in contiguity or is not in close proximity with the same tissue.^[4] Cutaneous metastases account for 0.7-9% of all metastases and may be the first evidence of internal

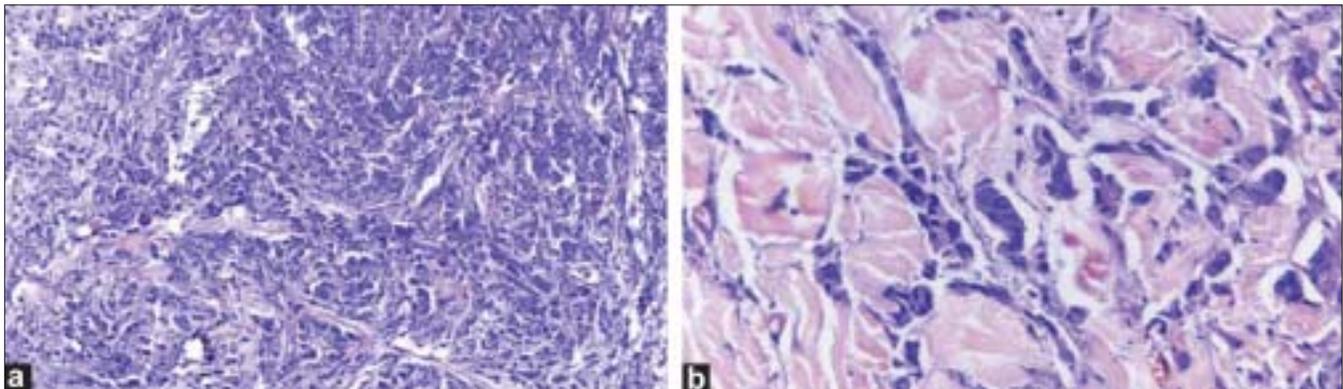


Figure 2: (a) Case 1: histopathology; showing cord-like infiltration of malignant cells in the dermis and (b) showing glandular arrangement of malignant cells with prominent nuclei and nucleoli (H and E, x100 and x400 respectively)



Figure 3: (a) Case 2: erythematous raised plaques with well-defined margin and central erosion and crusting seen over the right anterolateral aspect of the chest and outer arm; (b) erythematous indurated plaques are also seen over the neck in the same patient

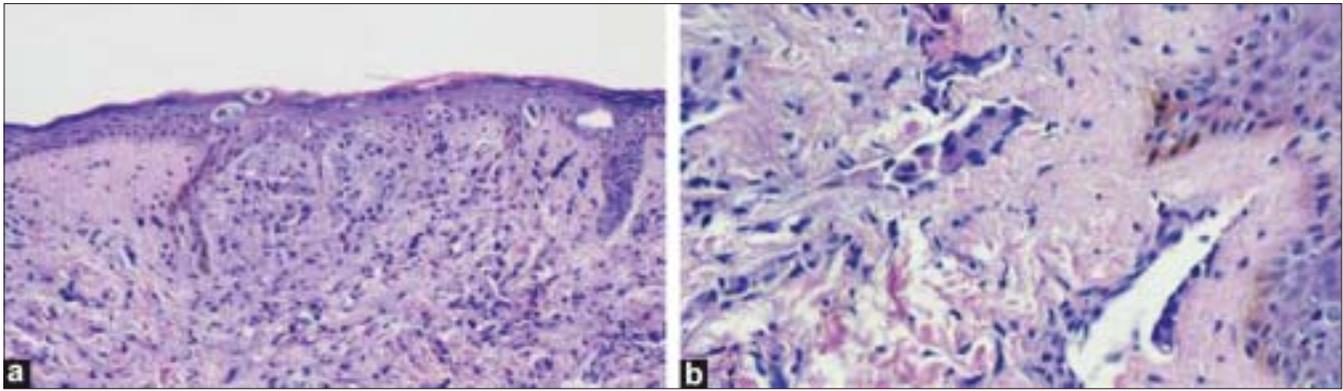


Figure 4: (a) Case 2: histopathology view of the tumor mass in the dermis with invasion of the epidermis, i.e., epidermotropism, and Figure (b) showing of scattered single cells and lymphatic emboli of large malignant cells (H and E, x100 and x400 respectively)

malignancy or a sign of recurrence and is considered a grave prognostic sign.

Although malignant melanoma is the most common malignancy metastasizing to skin, seconded by carcinoma breast, the most common skin metastases encountered in clinical practice is breast carcinoma, probably reflecting the occurrence of primary tumors, and the lesions usually occur in the skin overlying or proximal to the area of the primary tumor. There are various morphological variants, with the most common being solitary to multiple erythematous infiltrating papules and nodules and the rarer variants being carcinoma erysipeloides, carcinoma en cuirasse, carcinoma telangiectaticum, alopecia neoplastica, metastasis to the inframammary crease^[4] and zosteriform pattern.^[5] There are reports of metastatic histiocytoid breast carcinoma presenting as painless eyelid swelling with nodular infiltration,^[6] metastatic masses mimicking radiation dermatitis^[7] and presenting as targetoid lesions.^[8] Most of the metastasis occur due to lymphatic spread of tumor cells. Histological variants include glandular, Indian file pattern of malignant cells in between collagen fibers, lymphatic embolization by malignant cells and fibrotic and epidermotropic patterns.^[3] The prognosis depends on the type and behavior of the primary tumor and, as a rule, the expected survival is less than 1 year at the time of diagnosis.^[9] The most preferred mode of treatment is systemic chemotherapy and there are various protocols depending on the histopathological type of the tumor.

Carcinoma erysipeloides, also known as inflammatory skin metastasis, is a relatively rare variant of metastatic disease, accounting for less than 1% of the total

metastases and is usually associated with intraductal breast carcinoma.^[10] An unusual variant mimicking radiation dermatitis has been reported by Gugle *et al.* Although usually a clue for breast cancer, it may rarely arise from other internal malignancies. It has a grave prognosis due to the likelihood of disseminated metastasis.^[11] It was first described by Lee and Tannenbaum in 1924 and was given its current name by Rasch in 1931.^[12] Although it mimics erysipelas, the clues to diagnosis are absence of fever and chills along with negative bacterial cultures and absence of leukocytosis. The clinical picture is due to the spread of the metastatic cells along the subepidermal and subcutaneous lymphatics leading to blockade of the lymph ducts.^[3] On histology, tumor cells lie within the dilated lymphatics with minimal inflammatory infiltrate.^[4]

The clinical diagnosis of cutaneous metastasis secondary to breast carcinoma may be substantiated by histopathological examination of a biopsy specimen, which usually shows invasion by malignant cells similar to that of the primary tumor. Immunohistochemical staining, especially with Cathepsin D, an aspartic protease, which is predominantly seen in breast carcinoma metastases, is of diagnostic value.^[9] In addition, pan cytokeratins, epithelial membrane antigen and carcinoembryonic antigen also stain positive in most cases^[3] and immunoreactivity of the metastatic tumor to androgen receptor is a pointer towards the primary being a breast carcinoma.^[10]

The prognosis of a patient with cutaneous metastasis depends primarily on the pathology and biological behavior of the primary neoplasm and its response to treatment. As a rule, cutaneous metastasis from breast

cancer usually occurs in advanced stages and is poorly amenable to treatment.

CONCLUSION

Here, we present two cases of metastatic carcinoma breast presenting rather late, the first one being the most common papulonodular variant, which appeared as a sign of recurrence, and the second rarer variant, carcinoma erysipeloides, which occurred late in the course of improperly treated disease.

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