

## Cutaneous Manifestation of Breast Cancer: Case Report

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### ABSTRACT

Breast cancer is the most common tumour to metastasize to the skin in women. The incidence of cutaneous metastases from breast carcinoma ranges from 23.9 – 26.5%. Cutaneous manifestations can present in various morphological and histological forms and may herald the diagnosis or recurrence of breast cancer itself. This paper is presenting two case reports for rare metastatic presentation of breast cancer. A 70-year-old Indian lady was diagnosed with Stage IIB left breast cancer in 2004. She underwent left mastectomy and axillary clearance, adjuvant chemotherapy with 6 cycles of FAC regime and completed hormonal treatment with Tamoxifen for five years. Unfortunately, she had disease progression in 2011 as she developed distant metastases to the bronchus and mediastinum. She was given targeted radiotherapy and palliative chemotherapy along with a second line hormonal therapy with Letrozole. In April 2017, she developed multiple non-healing cutaneous ulcers over the right deltoid and left infra-scapular region for two months. A CT Scan revealed no involvement of the underlying muscle while the histopathological examination revealed it being a metastatic lesion. She then underwent palliative radiotherapy to the right deltoid and AI was changed to Exemestane. Another 54-year-old Malay lady, who previously defaulted follow-ups, was diagnosed with bilateral advanced invasive lobular breast cancer in December 2015 when she presented with pathological fractures from C6-L5. The Spine Team adopted a conservative approach with a Jewett's Brace and palliative chemotherapy was commenced for her with 6 cycles of Paclitaxel. She was also noted to have multiple skin lesions since April 2016 of which a biopsy revealed metastatic carcinoma to the skin. Conclusion: Albeit rare, any new and persistent dermatological presentation in patients with breast cancer should be promptly acknowledged and investigated to allow earlier intervention in treating the systemic spread of the disease.

### Keywords

cutaneous metastasis of breast cancer, metastatic skin lesion

### Introduction

Breast cancer is one of the commonest tumors worldwide<sup>[1]</sup>. the knowledge and beliefs about female breast cancer among the males is very poor<sup>[2]</sup>. Breast cancer knowledge and practice of

Breast Self Examination (BSE) are poor among women. More education and awareness need to be emphasized; especially the media as the most common source of information<sup>[3]</sup>.

Cutaneous metastases are neoplastic lesions that originates from a primary tumor and appear in the dermis or the subcutaneous tissue. The reported patterns of metastasis include; mechanical tumor stasis either through anatomical proximity and/ or lymphatic drainage, organ-specific when the tumor cells have selective affinity to a specific organ, and non-selective metastasis which is not be explained by the previous two patterns<sup>[4]</sup>. Skin metastasis of breast cancer is the commonest in women (23.9 – 26.5%)<sup>[5]</sup>. These cutaneous manifestations may present in various morphological and histological forms and may even herald the diagnosis or recurrence of breast cancer itself. The two targets of treatment are to improve the survival by controlling the disease and optimize the quality of life by management of symptoms. In recent years, there has been a surge in studies that addresses the treatment for this metastatic disease. However, due to the scarcity of this type of neoplastic spread and the possibility of under-reporting, there is still a paucity of large multi-centric trials to determine the optimal treatment plan. Hence, this paper is presenting two cases of rare metastatic presentation of breast cancer.

#### **Case 1:**

A 70-year-old Indian lady was seen in our out-patient clinic in April 2017 with multiple non-healing cutaneous ulcers over the right deltoid (*Figure 1*) and also left infra-scapular region for two months. She has a background history of Stage IIB left breast cancer that was diagnosed in 2004, of which she has undergone a left mastectomy and axillary clearance, adjuvant chemotherapy with 6 cycles of Fluorouracil, Adriamycin and Cyclophosphomide (FAC) regime and completed hormonal treatment with Tamoxifen for five years. Unfortunately, she had disease progression in 2011 as she developed distant metastases to the bronchus and mediastinum. She was given targeted radiotherapy to the anterior chest wall and also palliative chemotherapy, along with second line hormonal treatment with Letrozole, Subsequently, her symptoms resolved and clinically she improved to ECOG 1 status.

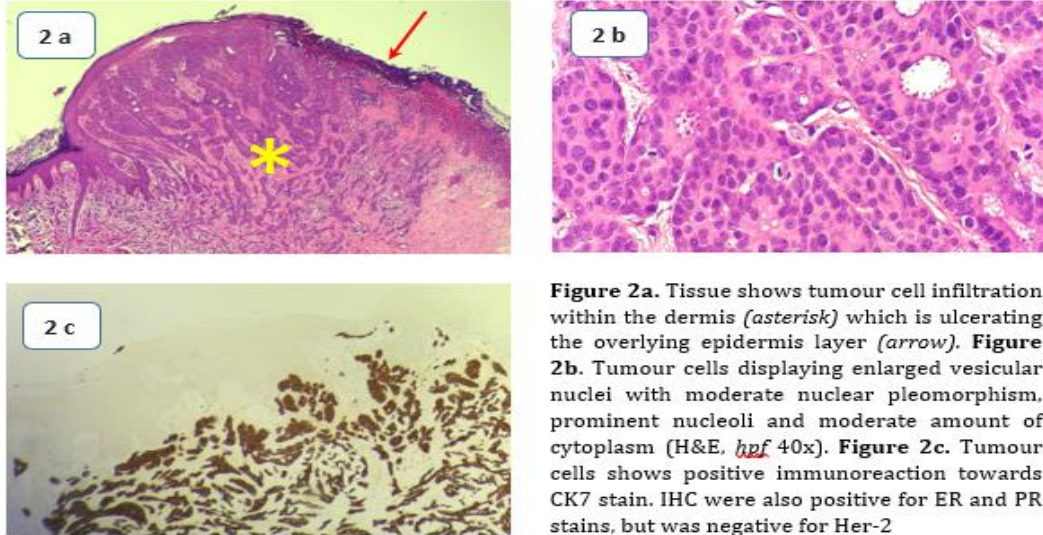
During this current presentation, the cutaneous lesions were investigated and a tissue biopsy was taken.



**Figure 1.** Non-healing ulcer over the right deltoid of the first patient.

Histopathological examination of the tissue biopsy showed tumor cells infiltrating the dermis and ulcerating the overlying epidermal layer. The tumor cells are arranged in clusters, cords and in glands and displays enlarged vesicular nuclei with moderate nuclear pleomorphism, prominent

nucleoli and moderate amount of cytoplasm (*Figure 2a, 2b and 2c*). Immuno-histochemical studies revealed positive reaction towards CK7, ER and PR stains and negative immunoreaction towards HER-2. She then underwent palliative radiotherapy to the right deltoid and the left infra-scapular region and her Aromatase Inhibitor was changed to Exemestane.



**Figure 2a.** Tissue shows tumour cell infiltration within the dermis (*asterisk*) which is ulcerating the overlying epidermis layer (*arrow*). **Figure 2b.** Tumour cells displaying enlarged vesicular nuclei with moderate nuclear pleomorphism, prominent nucleoli and moderate amount of cytoplasm (H&E, *hpf* 40x). **Figure 2c.** Tumour cells shows positive immunoreaction towards CK7 stain. IHC were also positive for ER and PR stains, but was negative for Her-2

### Case 2:

A 54-year-old lady, who previously had defaulted her follow-ups, was diagnosed by bilateral advanced invasive lobular breast cancer in December 2015 when she presented with vertebral body fractures from C<sub>6</sub>-L<sub>5</sub> due to bony metastasis. She was then seen by the Spine Team in our institution and they adopted a conservative approach of her pathological fractures with a Jewett's Brace. Subsequently, palliative chemotherapy was commenced for her with 6 cycles of Paclitaxel. It was during that time when she was also noted to have multiple elevated nodular skin lesions at the back (*Figure 3*) since April 2016 of which a biopsy revealed it to be metastatic carcinoma to the skin. These skin lesions were not treated then-after as she was not keen for further oncological treatment.



**Figure 3.** Elevated nodular lesions seen at the lower left back of the second patient. Biopsy of the skin lesion revealed metastatic carcinoma

## Discussion

Cutaneous metastasis is thought to occur secondary to haematogenous or lymphatic embolism or dissemination to near organ, or can be directly implanted during surgical manipulation<sup>[6]</sup>. As above-mentioned, breast cancer has the highest likelihood of having cutaneous metastasis. Skin metastases can be presented in different morphology - the commonest lesion is the nodular form as reported in our second patient, while other dermatological presentations include; telangiectatic, erysipeloid, en-cuirasse carcinoma and alopecia neoplastica.

The nodular type has a sudden onset as normochromic or brownish firm nodule that has an initial fast growth and subsequent stabilization. It may be painless or associated with pain and sensitivity, may be solitary or multiple with inflammatory or sclerotic or retracting the skin. The lesion is deemed suspicious when it has a sudden onset, delayed healing, bleeding tendency upon contact or an abnormal vascularity. Hence, these lesions should always be biopsied for histopathological examination and its immunohistochemistry sought for. Most metastatic lesions are associated with cytokeratins (CK 7 and 19), oestrogens and progesterone receptors, mammoglobin, GCDFP – 15, CEA and E-cadherin, with negative CK20, CK 5/6, CD 10 and TTF-1<sup>[7]</sup>.

Recently, there has been an interest in the usage of PET-CT to not only detect these cutaneous metastases and the sites of distant metastases, but also to monitor the response to therapy<sup>[8]</sup>. However, routine usage of this imaging modality is limited to cost and the available resources.

Most of cases with skin metastasis, are already showing spread of the primary cancer. In such cases, palliative care is preferred and external beam radiotherapy to the lesion is often administered. Additional radiotherapy is optional for patients who have not received the maximal doses during adjuvant therapy. Hormonal therapy is also given to hormone-positive lesions while those cutaneous metastases that are large and rapidly progressing can be offered chemotherapy using anthracycline-containing regimens or capecitabine.

The usage of electrochemotherapy is also a novel way of treating this disease as well. Bourke et. al. reported a ten-year audit of treatment of cutaneous metastasis using intratumoural or intravenous bleomycin alongside with electricity pulses. Response was observed in 161 out of 202 lesions (79.7%) and 130 (64.3%) showed a complete response<sup>[9]</sup>. These results are exciting as it may be closing the paucity of understanding and treatment of these cutaneous metastasis. However, larger multi-centric trials are warranted prior establishing this is an accepted and evidence-based method of treatment.

The median survival of cutaneous metastasis of breast cancer was 13.8 months; which doubles the median survival of all skin metastases (6.5 months)<sup>[10]</sup>. Albeit that the median survival is relatively better in comparison to other primaries, the overall incidence of cutaneous metastases has also unfortunately increased over the recent years due to the better overall cancer survival rates and available good therapeutic alternatives<sup>[4]</sup>. It is also important to highlight that after completion of cancer treatment, cutaneous metastases maybe the first sign of relapse; and has a significant role in prognosis regarding the survival rates.

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