

Case Report

Squamous Cell Carcinoma of the Breast Mimicking Chronic Breast Abscess

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ABSTRACT

Primary squamous cell carcinoma (SCC) of the breast is an exceedingly rare malignancy, and there are no clear management protocols for SCC of the breast. We report a 45-year-old female patient who presented with the recurrent breast abscess and a large fungating SCC of the breast with fixed ipsilateral axillary nodes. She was offered modified radical mastectomy. During the follow-up visits, she was observed to have developed multiple vertebral metastases. She had palliative chemotherapy. However, the patient succumbed to the disease within 6 months of the diagnosis.

KEYWORDS: *Fungating breast tumor, recurrent breast abscesses, squamous cell carcinoma*

INTRODUCTION

Squamous cell carcinoma (SCC) of the breast is rare, with an incidence of 0.04% to 0.1% of all breast cancers and is reported mainly in postmenopausal women.^[1] Squamous cells are not normally present in the breast, which explains the rarity of this malignancy in breast. Squamous metaplasia due to chronic inflammation associated with chronic abscesses with subsequent malignancy is the most plausible explanation for such neoplasia though such a metaplastic transformation requires significantly long duration to happen.^[2] We report a premenopausal woman with the recurrent breast abscess as the only manifestation of an underlying *de novo* SCC of the breast.

CASE REPORT

A 45-year-old woman presented with a history of recurrent (three episodes at the same site) left breast abscess in the upper outer quadrant of breast of 3-month duration. She was seen by her general physician who drained the abscess thrice in 3 months. Clinical examination findings during each visit for breast abscess were characterized by the absence of significant solid mass in the breast; however, few enlarged axillary nodes were noted in the last visit. She subsequently presented to our institute. She is married with two children and has breastfed both of them. Her menstrual history was

unremarkable. On examination, there was a 4 cm × 3 cm ulcer in the left breast involving the upper outer quadrant with everted margins and a necrotic floor. The left nipple was retracted, and the skin over the left breast showed the characteristic peau d'orange appearance. Another area of suspicious malignant nodule was evident close to the ulcer as shown in the clinical photograph [Figure 1]. On palpation, there was a firm and fixed 8 cm by 7 cm-sized hard lump involving all the quadrants of the left breast. The lump was fixed to the left pectoralis major muscle, and there were multiple hard and fixed left axillary lymph nodes.

Laboratory tests such as blood urea, creatinine, total cell counts, and liver function tests were within normal limits. Biopsy from the lump and the ulcer revealed a poorly differentiated SCC without any histopathological evidence of adenocarcinoma [Figure 2]. Immunohistochemical staining revealed a basal-like phenotype with expression of cytokeratins (CKs) such as CK5 and CK14 and negative staining for estrogen receptor (ER), progesterone receptor (PR), and Her2 receptor, suggestive of SCC of the breast. A thorough

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Figure 1: Clinical photograph of the breast tumor with ulceration, skin nodule, and retraction of the nipple with extensive peau d'orange appearance

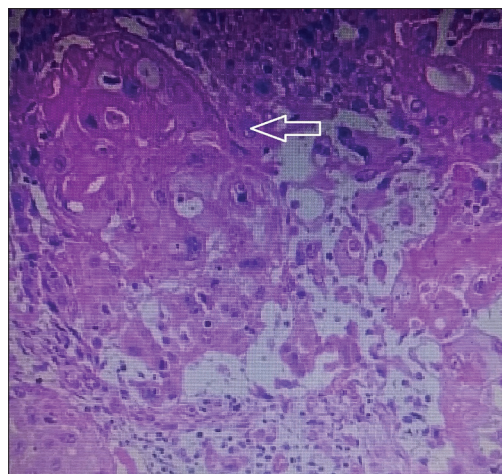


Figure 2: Histopathological image showing clusters of cells with pleomorphic hyperchromatic nuclei and keratinization in breast tissue (H and E, ×20)

examination of the patient did not reveal any evidence of SCC elsewhere. Chest X-ray showed no abnormality, and ultrasonological examination of the abdomen and pelvis was normal. Technetium-99 m bone scan did not reveal any bony secondaries. The patient was commenced on neoadjuvant chemotherapy with cisplatin. Assessment after three cycles of chemotherapy revealed poor response to chemotherapy and left modified radical mastectomy was done. Postoperative recovery was uneventful. Pathological staging was T4N2M0, and the deep resected surgical margins were positive for tumor. Hence, she was started on adjuvant external beam radiotherapy and chemotherapy with 5-fluorouracil. However, on follow-up, the patient developed multiple thoracic and lumbar spinal metastases evident on technetium-99 m bone scan performed 3 months after the surgery. Therefore, she was started on paclitaxel as palliative chemotherapy along with palliative external beam radiotherapy to the spinal metastases. However, the disease progressed rapidly with new metastatic lesions appearing in the lungs, and the patient became cachectic. She developed hemoptysis and succumbed to the disease within 6 months of the diagnosis.

DISCUSSION

Adenocarcinoma is the most common histological type of breast cancer. Other histological subtypes such as SCC and papillary transitional cell carcinoma are rarely encountered in surgical practice.^[1] Primary SCC of the breast is a very rare malignancy. SCC is commonly seen in adenocarcinoma specimens, as a part of squamous metaplasia. It can rarely present as recurrent abscess.^[3] Usually, in such cases, squamous metaplasia occurs which in turn develops into SCC. Such dysplastic transformation requires years of chronic inflammation.

The index case is unique in that the malignancy was already present *de novo* and has presented as a recurrent abscess. This is evident by the short duration of abscess in our patient. Another peculiarity is the predilection for SCC to affect postmenopausal women. The index case is premenopausal, which merits attention. To the best of our knowledge, no case of SCC has been described in males.^[4]

Wrightson *et al.* reported two cases of SCC of the breast presenting as breast abscess with poor survival and recommend routine biopsy of all recurrent breast abscesses.^[3] Similar to their report, the present case also has been diagnosed at an advanced stage and had very poor prognosis. This underlines the aggressive nature of SCC of the breast.

SCC of the breast is diagnosed when a breast tumor meets the criteria by Macia, *et al.* – the absence of elements other than malignant epithelial cells, independence of the lesion from adjacent dermal structures, and exclusion of squamous carcinomas in other sites.^[5] In our case, the 8 cm-sized breast lump was occupying almost the entire breast with ulceration at the summit. Thus, clinically, it was breast malignancy with skin ulceration rather than a skin malignancy invading the breast. Moreover, the ulcer was present only for a few weeks duration. These features along with the characteristic immunohistochemical staining favor a diagnosis of SCC of the breast.

SCC of the breast is usually large (>4 cm) on the diagnosis and contains cystic areas on cross section in 50% of the patients.^[6] The present case also had a large primary tumor (8 cm) and multiple fixed axillary lymph nodes. These tumors tend to be triple negative with a basal-like phenotype.^[7,8] They stain positive for CKs such as CK5, CK6, and CK14 and negative for ER, PR, and

Her2 receptor. This characteristic feature limits the use of hormonal manipulation in these patients.

The management of SCC of the breast is not standardized due to the rarity of the disease and paucity of studies. Surgery is the cornerstone of the primary management of SCC of the breast. Breast conservation surgery is not usually possible because most patients present with advanced disease. Although SCC is often radiosensitive, some studies report poor response, and relapse-free rate is reportedly similar to patients not receiving radiotherapy.^[3,8]

Neoadjuvant and adjuvant chemotherapy regimens that can be used in SCC of the breast include single agent 5-fluorouracil, 5-fluorouracil/cisplatin, 5-fluorouracil/taxane, and 5-fluorouracil/cisplatin followed by paclitaxel.^[9] However, some studies have failed to show a significant benefit with neoadjuvant chemotherapy.^[8]

Cetuximab has been shown to be beneficial in SCC of the head and neck.^[10] SCC of the breast usually overexpresses epidermal growth factor receptor, and this can be exploited in the future as a treatment option for these aggressive malignant tumors.

CONCLUSION

SCC of the breast is a rare entity. Most of the cases present in locally advanced stage in postmenopausal women. Atypical presentation is common. Recurrent breast abscess in premenopausal women should also be viewed with caution, and a biopsy is mandatory to rule out malignancy. Surgery forms the mainstay of treatment, and there is no standard adjuvant therapy for this aggressive malignancy of the breast.

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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