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A case of primary squamous cell carcinoma of the breast with pathologic complete response after neoadjuvant chemotherapy

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ABSTRACT

Background: Primary squamous cell carcinoma (SCC) of the breast is a metaplastic carcinoma subtype which includes fibromatosis-like and sarcomatoid features. This is a very aggressive tumor with poor prognosis. Other sites of primary SCC should be ruled out first to classify these tumors as primary SCC of the breast. Here we present a case of locally advanced primary SCC of the breast.
Case Report: A 72 years old woman presented with a right axillary lump. Trucut biopsy was performed, it showed squamous cell carcinoma. Estrogen receptor had poor immunoreactivity, negative for both progesteron receptor and HER 2 in immunohistochemistry staining. PETCT imaging were conducted to showing only 6×6.5 cm mass in right breast adjacent to axilla, multiple lymphadenomegaly in right axillary. We planned neoadjuvant chemotherapy consisting of weekly paclitaxel followed by epirubicin and cyclophosphamide combination. Postoperative pathology revealed wide necrosis, no viable tumor cell. We started adjuvant anastrozole treatment of 1 mg/day. No evidence of disease was detected after 1 year follow up.
Conclusion: Primary squamous cell carcinoma of the breast is a very rare disease with no standard treatment approach. Our case achieved pathologic complete response after neoadjuvant chemotherapy.

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Introduction

Primary squamous cell carcinoma (SCC) of the breast is a metaplastic carcinoma subtype which includes fibromatosis-like and sarcomatoid features.[1] Etiology and pathogenesis of primary SCC of breast still remains unclear. This is a very aggressive tumor with poor prognosis and is seen less than 0.1% (0.04%-0.075%) of all breast malignancies.[2] Other sites of primary SCC should be ruled out first to classify these tumors as primary SCC of the breast. Here we present a case of locally advanced primary SCC of the breast

Case report

A 72-year-old postmenopausal woman presented with a 2-month history of a right axillary mass. Examination revealed a hard, 2.5 × 2.5 cm, painless, immobile mass in right axilla and a hard, 5 × 6 cm mass in upper outer quadrant of right breast. Mammography confirmed presence of both 2.5 cm opacity with microcalcification in upper outer quadrant of right breast and right axillary lymphadenopathy. An ultrasound-guided true-cut biopsy was performed and pathological diagnosis was SCC. Keratinization was present in all tumor cells. On immunohistochemistry, tumor cells expressed p63 and CK 5/6. Ductal carcinoma in situ was not seen. Tumor cells were poor positive (≤1%) for estrogen receptor and were negative for progesterone receptor and human epidermal growth factor receptor 2 (Her 2) (Fig 1). The patient had no history of any other malignancy. No pathological finding was found on dermatological, gynecological, and head–neck examination. Both upper and lower endoscopy were normal. PET–CT scan imaging were conducted to investigate the possibility of any other primary disease, and the results were negative, showing only 6 × 6.5 cm mass in right breast adjacent to axilla (SUV max 27.6), multiple lymphadenopathy in right axillary level 1 and 2 (Fig 2A). Therefore, considering locally advanced primary SCC of the breast, we planned neoadjuvant chemotherapy consisting of weekly paclitaxel followed by epirubicin and cyclophosphamide combination. Post-treatment PET–CT showed no Fluoro 2 Deoxy Dglucose (FDG) activity in right axillary area and significant morpho-metabolic regression of the right breast mass (Fig 2B). Modified radical mastectomy of right breast and axillary dissection was done. Postoperative pathology examination revealed wide necrosis, significant regression due to chemotherapy, and no viable tumor cells. She had pathological complete response. Adjuvant radiotherapy was not given. We started adjuvant anastrozole treatment of 1 mg/day because of low expression of estrogen receptor. No evidence of disease was detected after 1-year follow-up.

Discussion

Primary SCC of the breast accounts for less than 0.1% of all breast carcinoma.[3] Foci of other primary cancers that may metastasize to breast should be rule out (oral cavity, bronchial, esophagus, bladder, and cervix).[4] Pathophysiology is controversial and accepted theory is that it might develop on the basis of squamous metaplasia into an adenocarcinoma.[5] Squamous cell metaplasia is also seen in cysts, abscesses, and adenofibromas. Squamous breast cancer has been reported in adult women between ages ranging from 29-90 years.[6] There is no reported case in male patients. It tends to present as a large (>4 cm) and cystic (50% of cases)

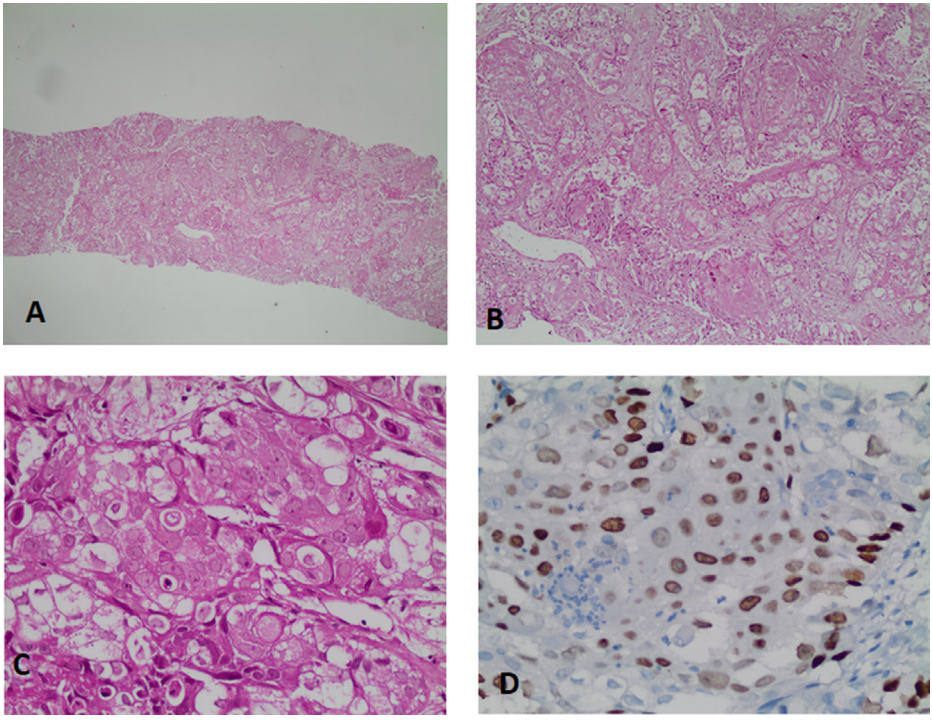

Figure 1. Microscopic findings of true-cut biopsy revealed the diagnosis of squamous carcinoma of the breast. A and B: 1/100 hematoxyline eosin (H&E), C: 1/40 H&E, D: p63 immunohistochemical staining.

mass.[2] There are no typical findings on radiological imaging and may be seen as a complicated cyst or inflammatory process.[7] Primary squamous cell cancers of the breast are generally triple negative and high grade.[3,6] There are only 3 reported cases of primary SCC of the breast with an unusual "basal-HER2" phenotype.[8] Due to its rarity, the most appropriate treatment option is still unclear and there is no standard treatment recommendation. Modified radical mastectomy and axillary dissection can be performed in patients who are eligible for surgery. Breast conserving surgery is not usually feasible because these patients usually present with locally advanced disease.[9] There is also no standard approach for adjuvant treatment. Case-based studies have reported no response to standard chemotherapy regimens such as anthracycline, methotrexate, 5-fluorouracil, and cyclophosphamide which are commonly used for ductal carcinoma.[10] Hennessy and his colleagues reported that SCC of the breast is not sensitive to standard taxanes and anthracycline-based neoadjuvant treatments.[9] Contradictory to the report mentioned above, our patient achieved complete pathological response after neoadjuvant treatment with taxane and anthracycline-based chemotherapy. In randomized trials there is also lack of evidence about the benefits of post-mastectomy adjuvant radiotherapy in patients who received neoadjuvant chemotherapy. In a meta-analysis involving 22 studies, adjuvant radiotherapy did not show any impact in axillary lymph node-negative patients after modified radical mastectomy.[11]

In conclusion, primary SCC of the breast is a very rare disease with no standard treatment approach. Our case achieved pathologic complete response after neoadjuvant chemotherapy and this is the first ever reported case in literature to our knowledge.

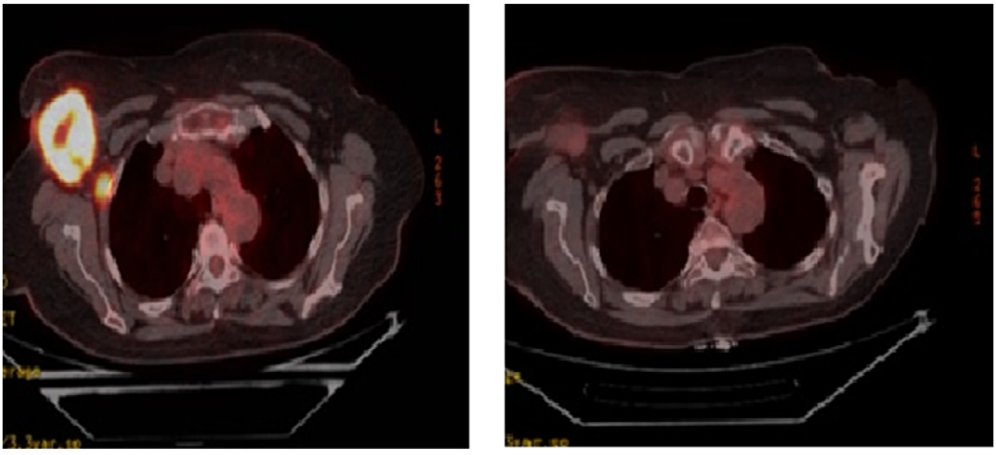

Figure 2. PET-CT images. A: Initial presentation. B. After neoadjuvant chemotherapy.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.currproblcancer.2018.04.003.

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