CASE REPORT

CASE REPORT: SQUAMOUS CELL CARCINOMA OF THE BREAST

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ABSTRACT

Introduction: Squamous cell carcinoma of the breast is a rare and aggressive type of cancer, accounting for less than 0.1% of all invasive breast cancers. This type of tumor is believed to arise from squamous metaplasia of ductal carcinoma cells or mammary duct epithelium. It is typically found in the skin and mucous membranes, rather than the usual glandular cells found in breast tissues.

Case Presentation: We report a case of a patient who presented with a palpable lump on her left breast. Surgical biopsy revealed a primary squamous carcinoma of the breast. Laboratory investigations done showed hypercalcemia. Further evaluation with bone scintigraphy and abdominopelvic CT scan and brain MRI showed metastases to the pelvic bone, brain and liver. She however passed away three weeks after while on admission.

Conclusion: Squamous cell carcinoma although rare, poses diagnostic challenges. Surgical treatment: paclitaxel and carboplatin chemotherapy regimens and adjuvant radiotherapy are effective, but it may be resistant to radiotherapy; and immunotherapy may prolong the survival of patients with primary squamous cell carcinoma of the breast.

Keywords: Squamous cell carcinoma, treatment, breast cancer, Nigeria

INTRODUCTION

Primary Squamous cell carcinoma (SCC) of the breast is a metaplastic carcinoma subtype. The etiology and pathogenesis of primary SCC of breast still remains unclear. It is a particularly aggressive tumor with poor prognosis and seen in less than 0.1% (0.004-0.0075%) of all breast malignancies.[1] Here we present a case of a primary breast squamous cell carcinoma diagnosed in the setting of a breast abscess.

CASE REPORT

A 38-year-old premenopausal woman had two children of which she breastfed for 18 months. She presented with a lump in the left breast.

The lump was gradually progressively increasing in size, not associated with pain, nipple discharge and retraction or dimpling of the skin. There was no family history of breast cancer or other tumour. Physical examination revealed firm, rubbery, non-tender and non-mobile lesion of 1210cm in upper outer quadrant of the left breast with palpable left axillary lymph nodes. Abdominopelvic CT scan, chest CT scan, and bone scintigraphy were all normal. CA 15-3 was 573 U/ml. The patient underwent diagnostic mammography which revealed abnormal density and calcification of the left breast with a mass measuring 12×10cm and axillary lymph node of 3×2cm. Ultrasound of both breasts showed a mass in the left breast and axilla. The patient underwent ultra-sound guided needle biopsy of the left breast mass which revealed invasive ductal carcinoma of the left breast (ER, PR, HER-2 negative, K167 positive rate 72%. The right breast was negative on palpation and mammography.

MANAGEMENT AND OUTCOME

The ovarian function was protected by subcutaneous injection of Goserelin (Zoladex) 3.6mg monthly during chemotherapy. The patient received neo-adjuvant chemotherapy with specific chemotherapy regimen 4-cycle Adriamycin combined with Cyclophosphamide followed by 4 cycles of three weekly Docetaxel. Patient had significant response to chemotherapy. Thereafter, she was re -assessed and had radical mastectomy of the left breast and left axillary lymph node dissection. The final pathology showed squamous cell carcinoma of the left breast, ER, PR and HER-2 negative. She received adjuvant radiotherapy to the left anterior chest wall combined with the supraclavicular area; the dose was 50Gy/25 fractions. Patient was on regular follow-up after chemotherapy and radiotherapy. Two years after, she presented with fatigue, anorexia, weight loss and severe waist pain. Laboratory investigations showed hypercalcemia. Further evaluation with bone scintigraphy and abdominopelvic CT scan showed metastases to the pelvic bones and liver. She received palliative radiotherapy to the pelvic region 30Gy in 10 fractions. Thereafter, the patient was planned to receive six courses of chemotherapy with carboplatin AUC5 and paclitaxel (175mg/m^2) every 21 days and IV zoledronic acid (Zometa). However, she stopped after three courses of paclitaxel and carboplatin because of complaints of vomiting, dizziness and severe headache. MRI done revealed multiple brain metastases, she was admitted and was commenced on IV dexamethasone 16mg start and 8mg every 8 hours along with IV omeprazole 40mg daily. She was then planned for palliative whole brain radiation and received 30Gy in 10 fractions. Her general performances deteriorated, and she died three weeks later while on admission.

DISCUSSION

Presently, there are few studies on primary squamous cell carcinoma of the breast. Its pathogenesis is still unclear, and there is a lack of standardized management of its molecular pathological characteristics, treatment and prognosis.[2,3]

As a rare pathological type of breast cancer, some authors believe that it arises from benign breast disease[4,5] and is seen in cystic epithelium, fibroadenoma, phyllodes tumor, papilloma, or chronic abscess. It is reported that breast SCC has a lower axillary lymph node metastasis rate.[6] Previous studies have found that 10%-30% of breast PSCC cases have axillary lymph node metastasis, but blood spread and distant metastasis are more

common.[6] Also in other studies, compared with traditional breast cancer, the PSCC mass is larger, and part of it is a cystic mass of the breast.[7] The larger tumor size and less axillary lymph node metastasis suggest that PSCC may be suitable for modified radical mastectomy rather than breast-conserving surgery and sentinel lymph node resection is feasible for axillary lymph nodes.

There are also some who suggest that phenotypic changes in breast cancer are the result of malignant transformation of breast cancer stem cells (histogenesis) or mutations in specific genes occurring early or late sin carcinogenesis (dedifferentiation).[8] Reports suggest that radiotherapy may increase the risk of developing breast squamous cell carcinoma (SCC); additionally, the implantation of prostheses might be associated with the occurrence of primary squamous cell carcinoma (PSCC).[9] Due to the low incidence, the treatment of primary SCC of the breast is yet to be standardized. Current treatment strategies for primary SqCC are extrapolated from treatment paradigms for invasive ductal and lobular breast cancers. In this case, surgical treatment was provided as the patient did not wish to pursue adjuvant chemo-radiation. There are reported cases where patients underwent multi-modal approach involving surgery, adjuvant systemic chemotherapy, radiation, and anti-estrogen blockade. However, the efficacy of these treatments is still unclear due to paucity of data. Squamous cell carcinoma of the breast has been reported in some cases to be radio-resistant and in other cases to be radio-sensitive.[10,11] It is not responsive to chemotherapeutic agents typically used for the treatment of invasive ductal carcinoma.[12] Aparicio *et. al.* noted that there was no survival benefit in SqCC patients who received neo-adjuvant or adjuvant chemo- therapy, in comparison to those who did not receive chemotherapy.[12] Considering that most SqCC patients are hormone receptor negative, the hormone blockade may also be ineffective. Prognosis remains unclear. Some cases have reported outcomes similar to poorly differentiated breast carcinoma, with low overall survival rate. In this case however, the clinical course was relatively favorable with primary surgical treatment alone and resulted in no evidence of disease recurrence at 36 months. This case unveils that surgical intervention alone can result in a favorable disease-free interval. More data is necessary to formulate management guidelines and further define if there is any role for systemic chemotherapy, radiation therapy, or hormonal blockade. Given the rarity of this type of tumor, the appropriate treatment is poorly codified.[13] The treatment is similar to that of infiltrating ductal carcinomas of the breast, it usually involves mastectomy with axillary lymph nodes dissection followed by chemotherapy and radiotherapy.[14] Indeed, neoadjuvant chemotherapy is not justified to consider a conservative treatment since its results are mediocre.[14] Most chemotherapy regimens have combined 5-fluorouracil and cisplatin with some success.[15] Given the usual negativity of hormone receptors, hormone therapy has little place in the therapeutic arsenal for squamous cell carcinoma of the breast.[16] The prognostic factors are mainly represented by the size of the tumor, lymph node involvement.[17] The presence of a fusiform component, necrosis or cellular acantholysis is considered predictors of an unfavorable outcome.[18] The prognosis of breast squamous cell carcinoma remains pejorative with the occurrence during the first five years of metastases in the lung, liver, bone

or brain.[19] The average survival at 5 years is estimated between 50 and 63 %.[20]

CONCLUSION

Squamous cell carcinoma of the breast is a rare cancer belonging to the heterogeneous group of metaplastic carcinomas. However, due to its late presentation and aggressive nature, those tumors already have a large diameter at presentation, hence requiring a mastectomy. SCC of the breast is resistant to many chemotherapies' regimen although some response to platinum is described. Further research is necessary to elucidate the pathogenesis of squamous cell carcinoma of the breast and to identify effective treatment strategies.

DECLARATIONS

Ethical Considerations

Written informed consent was obtained from the patient for publication of this case report.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report.

Competing Interest

The authors declare that they have no competing interests.

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