Carcinoma of male breast: A rare case report from north east India with review of literature

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Received - 25 March 2019 Initial Review - 10 April 2019 Accepted - 19 April 2019

ABSTRACT

Male breast cancer is a rare entity and accounts for 1% of all breast cancer cases with an average age of onset 67 years. Several risk factors have been identified, such as genetic and hormonal abnormalities. Even though more data is emerging about this disease, the poor level of awareness often results in late presentation and delayed diagnosis in our country.The present study reported the case of a 63 year old man who was diagnosed with an advanced invasive ductal carcinoma without any important risk factors. The case is presented for the rarity and to discuss awareness, regarding early diagnosis and proper management.

Keywords: *Infiltrating ductal cancer, Male breast cancer, Modified radical mastectomy.*

Male breast cancer (MBC) is a rare disease with an estimated prevalence of 0.5-1% amongst all breast carcinoma [1]. The disease is more common in the elderly population and mostly present as an aggressive course on presentation. Although etiology is not known, the current literature suggests that genetic factors including BRCA2 mutations, family history, age, androgen/estrogen imbalance, and environmental exposures may predispose to male breast cancer [2]. Invasive ductal carcinoma is the most common subtypes (>90%) amongst invasive carcinoma of the male breast, whereas, ductal carcinoma in-situ (DCIS) and lobular carcinomas are rare [3]. Male breast cancers are more often hormone receptor positive (estrogen receptor and progesterone receptor) and less often overexpress *her2-neu*. The most common presentation is a painless, firm, sub-areolar mass.

Here, we are reporting the case of a 63-year-old male with the left breast cancer, infiltrating ductal adenocarcinoma type, clinical stage IIIA, positive hormone receptors, treated with left modified radical mastectomy with level-2 axillary clearance with subsequent adjuvant chemotherapy/radiotherapy. The patient improved satisfactorily, following up to 12 months since the beginning.

CASE REPORT

A 63-years-old male presented to the department with a complaint of progressive swelling of the left breastforone year. The swelling was painless, located at the upper quadrants of the left breast and progressively increased for the last 4 months (Figure 1). He had no significant past medical or family history. He was not taking any medication. He did not drink alcohol and had an occasional smoking history. There was no history suggestive of hyperoestrogenic states found in liver disease, Klinefelter's syndrome, obesity and gonadal dysfunction resulting from a congenital inguinal hernia, testicular injury, orchidectomy, gynaecomastia and mumps orchitis.

On physical examination, around 4 x 2 cm size mass was found in the left upper quadrant of the breast which is firm to hard in consistency and involving the skin. Left axillary lymph

Figure 1: A lump in the left breast

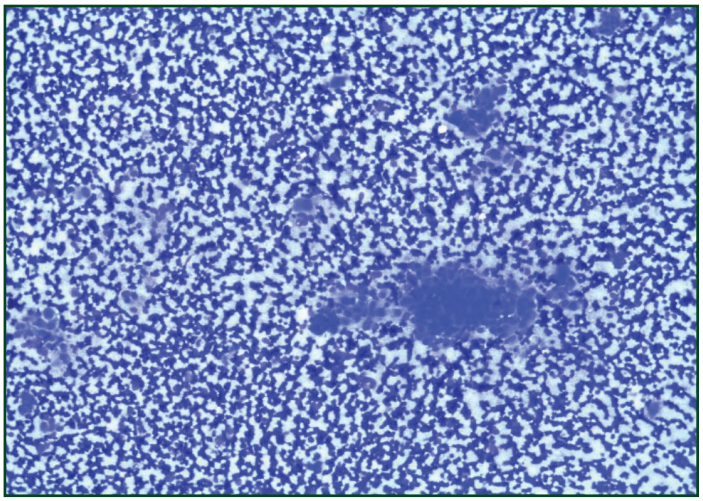

Figure 2: Fine needle aspiration cytology (FNAC) smear showing malignant ductal epithelial cells mostly in clusters. (MGG stain, 10X)

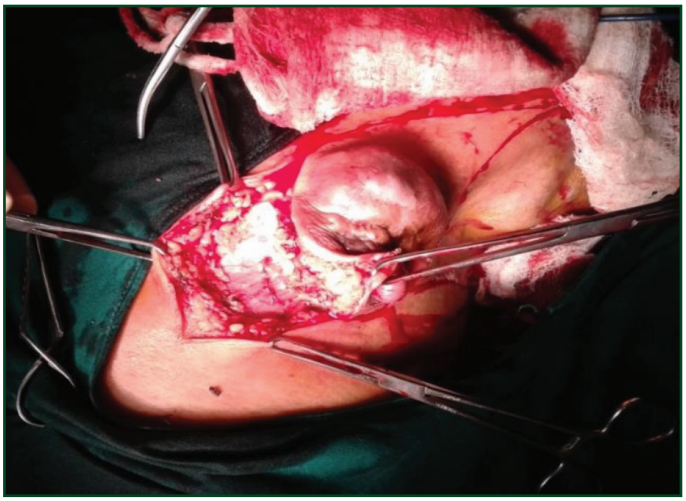

Figure 3: Modified radical mastectomy

nodes were palpable.There was no nipple discharge or ulceration. The other breast was normal on examination.

Blood examination including complete hemogram, blood sugar, renal and liver function tests was normal. His serology tests for hepatitis B/C were negative and human immunodeficiency virus (HIV) status was also negative. High resolution sonography of the left breast has shown 42 x 28 mm size mass lesion in the left breast with the presence of minimal vascularity and also 52 x 26 mm size nodal mass in the left axilla.Fineneedleaspiration cytology (FNAC) of the breast wassuggestive of ductal carcinoma (Figure 2). Preoperative chest x-ray was normal and ultrasound of the hepatobiliary system showedno liver metastasis. Full metastatic work-up could not be done because of financial constrain.

The patient was taken for surgery and the left modified radical mastectomy (MRM) withlevel-2 axillary clearance (Figure 3 and 4) was done.The skin was primarily closed after MRM. The histopathological report showed infiltrating ductalcarcinoma of the breast with extensive fibrosis and calcification with free surgical margin, ER/PR positive, grading of IIIA andmetastatic axillary lymph nodes (Figure 5). Postoperatively, he was doing well and was put for adjuvant chemotherapy and radiotherapy by the oncology department.

DISCUSSION

Male breast cancer is a rare tumor and accounts for less than 1% of breast cancers, but the incidence seems to beincreasing [4]. The median age of onset is around 67years, which is almost one decade later than in female breast cancer. As diagnosis is not often considered and screening mammography is rarely done, men often present with advanced disease. A very few research is going on MBC and risk is mostly found to be hormonally driven,resulting from estrogen excess or androgen deficiency [5].

Various conditions have been reported to be associated with an increased risk for MBC: Klinefelter'ssyndrome (XXY), cryptorchidism, chronic liver disorders, such as cirrhosis, chronic alcoholism, mumps orchitis, undescended testes, or testicular injury, orchiectomy, late puberty, and infertility. Gynecomastiaalone is not a risk factor for MBC. Family history

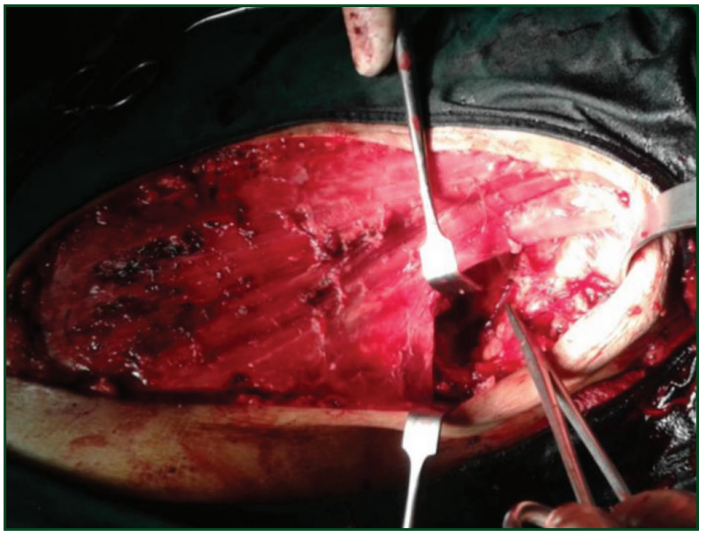

Figure 4: Level 2 dissection

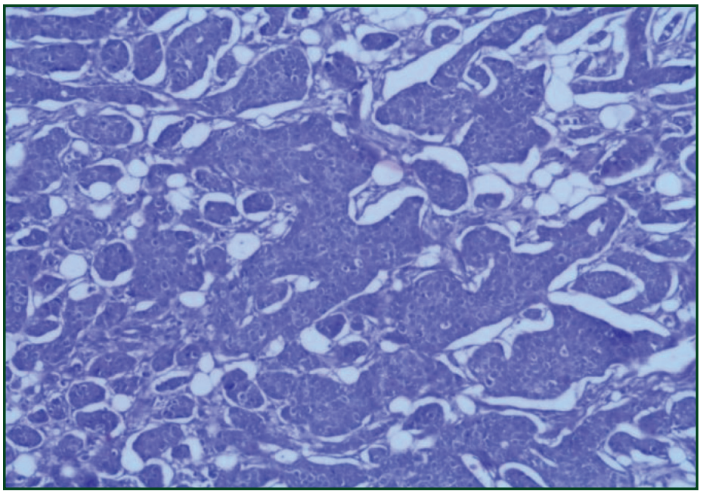

Figure 5: Low power view shows infiltrating areas of malignant ductal epithelial cells in sheets. (H & E, 10X).

of MBC is another important risk factor and may present in one fourth of the patient [6].Also, men who carries BRCA2 mutation and rarely BRACA1 mutation has an additional risk factor to develop MBC. In our case, no such risk factor could be identified. As reported by Jagtap SV et al, although most of the male breast cancer is unilateral, there are few case reports of rare synchronous bilateral breast cancer in elderly male [7]. The predominant clinical presentation is painless mass followed changes on nipple-areola complex in the form of nipple fixation, bloody discharge, oedema, retraction, eczema or ulceration [8].

Although biologically MBC behaves similar to female breast cancer, there are some basic pathologicaldifferences. They are predominantly ductal in origin as themale breast normally contains only ducts and no lobules.The most common type of MBC is infiltrating ductal carcinoma (84% to 94%) followed by a very rare occurrence of ductal carcinomas insitu and lobular carcinoma [4-5].Most of the MBC express ER/PR positive (that 90% and 81-96% respectively) and is greater than female breast cancer [4].

The male breast can be affected by a variety of benign and malignant disorders like gynaecomastia, abscess, Mondor disease and neoplastic (benign and malignant) lesions.Clinical examination remains the most important tool in the evaluation of apalpable mass in men.Radiographic assessment by both mammography and ultrasonography has an important role to play especially to exclude malignancy. Ultrasound of the breast showed a hypoechoic masswith irregular margins in patients with MBC. Primary mammographiccharacteristics in MBC include a solid mass which is eccentricto the nipple with speculatedmargins. Micro calcifications are rare in MBC and if occurs they tend to be large, round and coarser in appearance. Fine-needleaspiration cytology and/or guided core biopsy are necessary to make the final diagnosis [8].

Surgery is the mainstay of treatment for MBC and the surgical gold standard procedure is modifiedradical mastectomy followed by a radical mastectomy, total mastectomy, and lumpectomy with or without irradiation [6].Adjuvant chemotherapy with cytotoxic agents has beenshown benefit in men with lymphnode-positive cancer in a few studies [6]. Adjuvant radiotherapy (RT) following surgery may help in selected locally invasive breast cancer, however RT should include the internalmammary nodes in addition to the routine fields used inwomen. The indications for post-mastectomy radiation includes: men with large tumours, locally advanced disease, extensive axillary nodal involvement or poor prognostic factors such as high histological grade and vascular invasion. Since the majority of male breast cancer is hormone receptor-positive, thereforehormonal therapy plays an integral part in the treatment. Tamoxifen is the mainstay ofhormonal therapy for breast cancer and studies of Tamoxifen in men, given for two years, have shown improvement in both disease free, and so the effect of this treatment [4,8].

Aromatase inhibitors (AI: anastrozole, letrozole, and exemestane) may have a potentially promising role in the optimal management for metastatic MBC patients. Especially, when co-administered with gonadotropin - releasing hormone (GnRH) analogues it seems to increase the rate of clinical benefit [9-10]. Although the outlook of MBC is equivalent to that in stage-matched female patients, an overall prognosis is poor because of late presentation and associated co-morbidities.

CONCLUSION

Male breast cancer is rare entitywith most of the data in the form of sporadic case reports.The disease should be suspected in an elderly male with palpable breast swelling. Early clinical diagnosis is crucial in improving the prognosis of patients with MBC. Appropriate treatment, if instituted promptly and early in the course of the disease, has the potential to induce remission.

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Funding: None; Conflict of Interest: None Stated.

How to cite this article: Hazarika D, Barua PP, Barman B. Carcinoma of male breast: A rare case report from north east india with review of literature. Indian J Case Reports. 2019;5(3):219-221.

Doi: 10.32677/IJCR.2019.v05.i03.007