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Original Research Paper

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A CASE OF SYNCHRONOUS BILATERAL BREAST CANCER WITH DISCORDANT ESTROGEN RECEPTOR STATUS

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Introduction

Synchronous bilateral breast cancer is defined as two tumours diagnosed within 6 month interval and those above 6 months termed as metachronous breast cancer though there is difference in time interval specified by various clinicians. SBBC is a rare entity with incidence of 0.3 – 1.2% though it is recently increasing due to improved life expectancy after treatment and routine use of contralateral mammography. It is considered that synchronous breast tumours are independent tumours than to be secondary to metastatic spread from primary. Presence of indraductal component, different histology and different degree of differentiation implies that they are independent tumors.[2] Mostly women with BSBC are treated with aggressive measures as they are thought to be aggressive. Recently overall consensus is that bilateral breast cancer is amenable to breast conservation surgeries without compromising survival. [1]

Here we present a case of bilateral synchronous breast cancer in a female who presented with left sided breast swelling and right sided lesion was found incidentally on mammogram at the same time treated with BCS with axillary dissection on right side and MRM on the left side.

Case presentation

65 year old female presented with lump in left breast for 2 months that began as a small lump and gradually progressed in size. There is no family history of breast cancer. On local examination , 3*3 cm mass felt in upper inner quadrant of left breast without fixity to skin or muscle. No axillary nodes palpable on left side. Contralateral breast and axilla examination was normal. Sonomammography showed bilateral BIRADS V lesion with an irregular hypoechoic lesion 2.5*1.9*2.6 cm in 10- 12'o clock position of left breast and another irregular lesion 1.2*0.8*0.8 cm in right breast at 12 'o clock position.

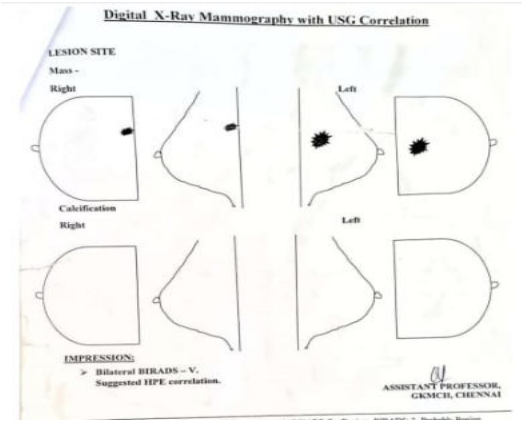

Fig 1. Digital xray mammography

Core needle biopsy of left breast showed invasive ductal carcinoma. As core biopsy of right breast lesion was not possible due to smaller size, after tumour board discussion lumpectomy with wide margins done after a radiological wire localisation on the right side that showed invasive ductal carcinoma on histopathology. Immunohistochemistry showed a triple negative tumour on left side and ER positive tumour on right side.

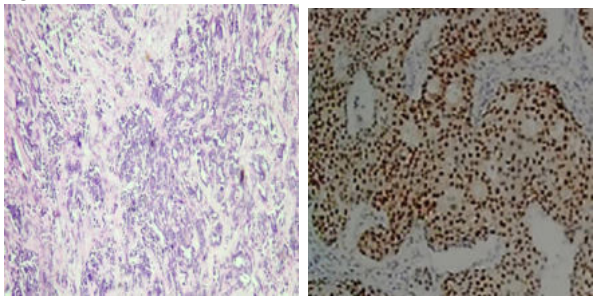

Fig2. HPE and IHC of Right breast lesion – Invasive ductal carcinoma, ER positive

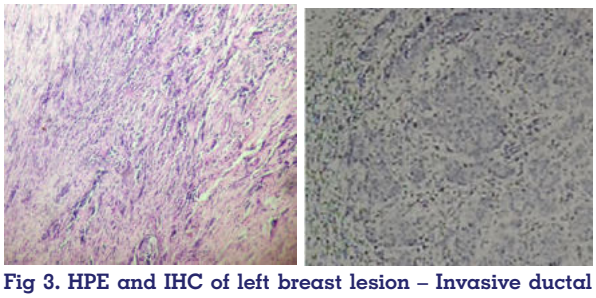

Fig 3. HPE and IHC of left breast lesion – Invasive ductal carcinoma , ER negative

Systemic spread was ruled out clinically as well as imaging(with a PET scan). As margins on lumpectomy were negative on right sided tumour, right sided axillary dissection and left sided modified radical mastectomy proceeded after the IHC reports showed discordance in ER status. Postoperative HPE confirmed that bilateral axillary nodes were free of tumour and showed

- pT1cN0 and ER positive , low proliferative index on right side
- pT3N0 and triple negative, high proliferative index on left side

Discussion

Bilateral Breast Carcinoma (BBC) is a rare presentation with an incidence of 2-5% of all breast malignancies. The second tumour in the other breast can be either synchronous (within 6 months of the primary tumour) or metachronous (after 6 months of the primary)[3]. In our case the second lump in the left

breast was diagnosed at the same time as the right breast lump. Though exact etiology is not known, lobular carcinoma is a risk factor for bilaterality. In our case it was ductal carcinoma. A positive family history of breast cancer, genetic predisposition, a younger age at the diagnosis of the first primary breast cancer, inadequate treatment received for the first tumour and nulliparity are additional risk factors for bilaterality[5].

A tumour in contralateral breast may represent either a second primary tumour or metastasis from first tumour. Many studies have described factors to differentiate a separate second primary and metastasis to the other breast such as demonstration of In Situ Disease on either side, both malignancies with different histological types and different grades of cancer with no evidence of local, regional or distant metastasis[1,3,4]. Absence of metastasis can substantiate that opposite tumour is second primary. In our case different immunophenotype subtypes with different grades of tumour substantiates two different synchronous primary tumours.

Early detection of the contralateral tumour is of utmost importance. Screening tools like MRI have a greater sensitivity compared to Mammography. There are no clear treatment guidelines for bilateral breast cancer as for unilateral cancer. Patients are often treated with bilateral mastectomy as the disease is considered aggressive and breast conservative surgery has unclear importance[5]. Recently overall concensus is that bilateral breast cancer is amenable to breast conservation surgeries without compromising survival [1].

Treatment plan was based upon the grade of the individual tumours. The right breast had a T1 lesion with clear margins on wide local excision with ER positivity and hence only axillary node clearance was done on the right side in second sitting. As it was a T2 lesion on left side and triple negative on IHC proceeded with modified radical mastectomy on left side. There is no clear relationship between ER and PR positivity and bilaterality of the tumour. But bilateral tumour is more commonly seen in cases with Her-2/neu overexpression[5] though in over case both tumours were Her-2 negative. Studies suggest that the most common histologic subtype is infiltrating ductal carcinoma; though the incidence of invasive lobular carcinoma and the finding of lobular carcinoma in situ (LCIS) is higher among synchronous bilateral carcinomas as compared to unilateral disease. In immunohistochemistry, synchronous bilateral breast tumours tend to be of lower histologic grade with a higher rate of estrogen receptor (ER) and progesterone receptor (PR) positivity 2,6 . Patients with synchronous bilateral breast cancer ER discordance in patients have been associated with higher mortality than ER concordant positive patients and lower mortality than ER concordant negative patients within the first 5 years of surveillance [7].

Conclusion

SBBC is a rare occurrence and needs awareness and screening of contralateral breast, usually diagnosed by mammogram and is commonly low staged. Recent datas suggest a survival in patients treated with breast conservative surgery equivalent to survival in unilateral tumour and hence bilateral breast conservation can be a viable surgical option. Discordance in hormone receptor status plays a significant role in management plans of SBBC. Hence it is of utmost significance to know the tumour receptor status before planning treatment as ER concordant and ER discordant tumours differ in their management.

Abbreviations

IHC – Immunohistochemistry
MRM – Modified Radical Mastectomy
HPE - Histopathological Examination
ER – Estrogen Receptor
BCS – Breast Conservative Surgery
SBBC – Synchronous Bilateral Breast Cancer

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