Case Report

Contralateral synchronous occult breast carcinoma on magnetic resonance imaging

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ABSTRACT

Contralateral breast magnetic resonance imaging (MRI) is of value in those patients with known or suspected malignancy. Women with unilateral breast carcinoma reveal an increased risk of suffering from malignancy in the contralateral breast. MRI of the breast has developed rapidly over past 20 years and is now firmly established as an important diagnostic tool and detects contralateral lesions in a substantial proportion of women. We present a case report of 67 years female who presented with blood stained discharge from left breast and MRI detected synchronous occult carcinoma in the contralateral breast. In this case report, we emphasize the importance of performing MRI on both the breasts and diagnosing synchronous occult carcinoma in the contralateral breast.

Key words: Breast carcinoma, chemoradiotherapy, modified radical mastectomy

INTRODUCTION

Women with carcinoma breast have 2–6 times greater risk of developing carcinoma in the contralateral breast which can be synchronous (developing simultaneously) or metachronous (developing after a period of time). If the contralateral malignancy is detected after treatment, the patient has to undergo a second therapy rather than a single treatment course for bilateral breast carcimonas. Single treatment strategy can be followed if there is early detection of synchronous carcinoma in the contralateral breast. Magnetic resonance imaging (MRI) has a sensitivity of 99% in detecting breast carcinoma and the detection rates for synchronous carcinoma breast by MRI have reached up to 24%[1] while the detection rate of synchronous or metachronous carcinoma in contralateral breast with mammography ranges from 1% to 3% and with that of clinical examination from 0.2% to 1.0%.[2]

We present a case report of 67 years female who presented with blood stained discharge from left breast and MRI detected synchronous occult carcinoma in the contralateral breast. It modified the treatment strategy, and the patient underwent bilateral modified radical mastectomy and chemoradiotherapy.

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CASE REPORT

A 67-year-old female presented with unilateral blood stained discharge from left breast since 15 days. On clinical examination, there was no palpable lump in either of the breasts. No palpable axillary lymphadenopathy. The cytology of the blood stained discharge revealed ductal carcinoma. On mammography, no mass lesions in either of the breasts were appreciated [Figure 1]. On ultrasound, there was an ill-defined hypoechoic lesion measuring 3 cm × 2 cm in the retro-areolar region on the left side. It had irregular margins with adjacent architectural distortion without posterior acoustic shadowing. On ductography, the contrast outlined an ill-defined cavity of size 3.3 cm × 2.4 cm in the retro-areolar region in left breast. MRI of bilateral breasts revealed altered signal intensity in bilateral breasts in retro-areolar regions. These were hypointense on T1 and short tau inversion recovery images. There was ill-defined lesion measuring 9 mm × 7 mm in right breast which showed nonmass like enhancement in dynamic postcontrast images. In the left breast, there was an ill-defined lesion measuring 2.8 cm × 2.1 cm which had nodular enhancement [Figure 2]. Both the lesions showed type 2 curve on dynamic contrast-enhanced MRI [Figure 3].

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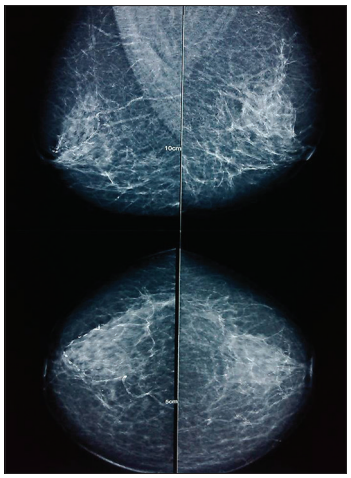

Figure 1: Mammography images showing BIRADS classification for breast density grade 2 with the presence of vascular calcification with BIRADS classification for risk assessment grade 0

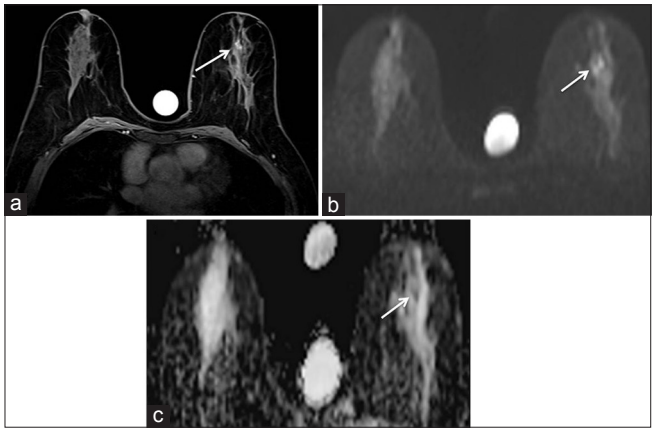

Figure 2: (a) Nodular enhancement in periareolar region in left breast, (b) which is showing restriction on diffusion-weighted imaging and (c) apparent diffusion coefficient sequences (as shown with white arrows)

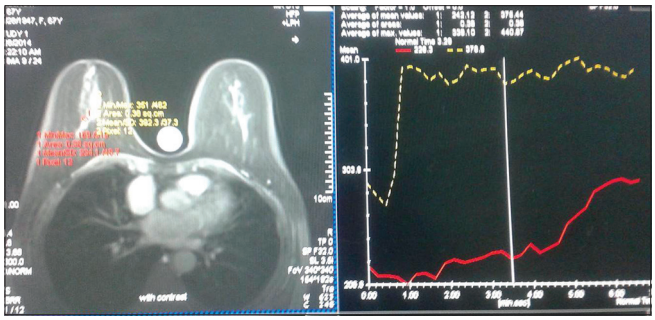

Figure 3: Dynamic contrast-enhanced magnetic resonance images showing type 2 curve in the region of nodular enhancement in left breast

There was also restricted diffusion on diffusion-weighted imaging and apparent diffusion coefficient in both the lesions. A diagnosis of bilateral breast carcinoma was given. Patient underwent bilateral modified radical mastectomy and chemoradiotherapy. The histopathology report revealed carcinoma *in situ* in intraductal papilloma in bilateral breasts.

DISCUSSION

The sensitivity of MRI in the detection of breast cancer approaches 100%. However, MRI is currently not recommended for routine screening. Breast MRI is beneficial for women with high-risk factors including genetic predisposition, dense breast composition, personal history of breast cancer, atypia, lobular carcinoma *in situ* and family history. MRI can provide additional information for evaluating the extent of disease in women diagnosed with breast cancer, such as identification of multicentric and multifocal disease in the ipsilateral breast and additional sites of cancer in the contralateral breast. Patients who have undergone lumpectomy, patients having positive axillary nodes with unknown primary carcinoma and patients with breast implants may also be benefitted from breast MRI. Breast MRI is still questioned because of its low specificity for carcinoma, which ranges from 37% to 97%. This low specificity often makes breast MRI the less desirable option for referring physicians and patients because of fear of unnecessary biopsies, patient discomfort, anxiety, and higher cost.[3]

Synchronous carcinoma in the contralateral breast can be detected by clinical examination or mammograghy either at the time of diagnosis or within 3–12 months of initial diagnosis in approximately 2% of females. Subsequent metachronous carcinoma has been reported to develop in 5–10% of patients during the 10 years follow-up. There are various clinical indications for breast MRI, which are described by American Cancer Society. Among its various indications, one is to screen the opposite breast for cancer in a patient with proven carcinoma on one side.[2]

In this case report, we emphasize the importance of MRI breast in detecting synchronous carcinoma in the contralateral breast. It changed the treatment strategy, and the patient underwent bilateral modified mastectomy followed by chemoradiotherapy.

The exact incidence of synchronous and metachronous carcinoma breast is unknown. Studies show a higher mortality after metachronous than synchronous disease and among younger than older women. Women diagnosed with unilateral cancer early in life, and bilateral cancer within 5 years had a 4 times higher mortality rate than women with unilateral breast cancer.[4] Breast MRI must be integrated as a part of the workup algorithm in all women with breast cancer. Of particular interest is the detection of synchronous ipsilateral and contralateral tumors, which could substantiouly curb the recurrence rate of breast cancer. The incidence of multifocality, multicentricity, and contralaterality is higher than previously reported mammographically.[5] Currently, the treatment of choice for bilateral carcinoma breast is neo-adjuvant chemotherapy followed by bilateral

modified radical mastectomy or breast conservation therapy. Prophylactic contralateral mastectomy is performed in those with BRCA1 or BRCA2 mutation or those with Li–Fraumeni syndrome who have a higher risk of contralateral breast cancer. Hence, MRI breast detection of synchronous carcinoma will modify the treatment plan of the patient and would also reduce the rate of unnecessary contralateral mastectomy and breast biopsy if it comes out to be normal.

CONCLUSION

Magnetic resonance imaging of bilateral breasts can alter the management of the patients by detecting synchronous contralateral carcinoma, so MRI should be performed in all the patients before starting the treatment.

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