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Case Report

THE MALE BREAST CARCINOMA: EARLY DETECTION AND SURVIVAL HOPE

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ABSTRACT - Male breast cancer is exceptionally rare and accounts for less than 0.25% of male malignancies and approximately 0.5-1% of all breast cancer (both genders). Mammography of the male breast, constitutes less than 1% of all mammograms performed, commonest lesion imaged being gynecomastia. So, there is less familiarity with the imaging appearances of male breast cancers. We present a case of concurrent gynecomastia and breast cancer. Patients with breast malignancy complains of sudden and rapid breast enlargement and tenderness of lump. Differentiation between benign and malignant masses is critical. On the basis of combination of morphology and distribution, mammography allows differentiation between benign and malignant breast disease in male patients with a high sensitivity (92%) and specificity (90%).

Introduction

The breast tissues of both sexes are identical at birth, remaining quiescent until hormonal influence takes place at puberty. Estrogen stimulates breast tissue while androgen antagonizes these effects. As there is a paucity of parenchyma, the malignancy rapidly progresses. The incidence of breast cancer is too low in male patients to justify screening mammography. Therefore, all imaging of the male breast is diagnostic. Male breast cancers have similar sonography features as in women. Since the risk factors predisposing to cancer on one side will also affect the contralateral breast, bilateral mammograms should always be obtained.

Male breast cancer patients are treated in similar

fashion as their female counterparts. Aggressive systemic treatment should be considered for patients with poor prognosis disease.

Case Report

A 62-year well-built male, presented with complaints of pain and swelling in the left breast. Right breast was also enlarged. The patient denied any family history of breast cancer and had no history of trauma to the breast. He was not on any medication. On examination; left nipple and areola were retracted. Overlying skin was edematous and inflamed. An oozing superficial ulcer was seen at 5 o'clock position (figure 1). The patient underwent a bilateral digital diagnostic mammogram with mediolateral oblique (MLO) and craniocaudal (CC) views (Hologic Selenia). Left

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breast showed evidence of a poorly marginated, irregular, hyperdense lesion with spiculated margins in retro areolar region. Nipple was retracted with associated thickening of overlying skin and subcutaneous tissue. Ipsilateral Pectoralis appears normal. The lesion was not associated with any calcification. Lymph node with imperceptible fatty hilum is seen in left axilla. No evidence of any intramammary lymphadenopathy was seen (figure2, figure3). Right breast showed benign diffuse proliferation of normal fatty tissue suggestive of pseudo gynecomastia. Targeted ultrasonography of left

breast was performed utilizing an 11MHz transducer (Philips IE33). The retro areolar density

in the left breast seen on mammogram corresponded to an irregular, poorly marginated, hypoechoic lesion with angulated margins and

showed posterior acoustic enhancement (figure4).

No evidence of any regional calcification was noted. Normal left axillary lymph nodes were present. The patient subsequently underwent a core biopsy from the lesion. Pathology results showed invasive carcinoma. Estrogen and progesterone receptors were negative.

The patient was treated with left total mastectomy and sentinel lymph node biopsy, which was positive. Surgical pathology showed invasive breast carcinoma of no special type (NST).

Discussion

Normal adult male breasts are composed of skin, subcutaneous fat, atrophic ducts and stromal elements. Preponderance of skin and fat elements accounts for the typical mammographic appearance of the normal male breast.

Cooper Ligaments are absent in male breasts. At birth, the male and female breasts are the same. Histologically, the normal male breast contains



FIGURE 1: Enlarged left breast with retracted left nipple and areola with edematous and inflamed overlying skin and subcutaneous tissue. An oozing superficial ulcer was seen at 3 o'clock position

subareolar ducts similar to those found in prepubertal girls. In most males these do not develop further until stimulated by variety of drugs or hormones. One of the prominent differences between gynecomastia and the female breast is that lobule formation is extremely rare. Therefore, breast conditions related to lobular proliferation, such as fibroadenoma, phyllodes tumor, invasive lobular carcinoma, and lobular carcinoma in situ, are extremely uncommon in men. Conditions related to ductal and stromal proliferation, such as gynecomastia, invasive ductal carcinoma, ductal carcinoma in situ, and papillary neoplasm, may occur in men^[1]. The major difference between the cancers in women and men is also because of

the site of origin. Yap et al. [2] in their study, reported that 88% of breast cancers in their study were subareolar with nipple involvement. Carcinoma of the male breast is an unusual lesion with a frequency equaling only about 0.9% of the occurrence of female breast cancer^[2]. This low incidence in men justifies the fact that mammography in males cannot be used as a screening modality and can only be used for diagnostic purposes. The peak incidence of breast carcinomas in males is in the fifth and sixth decades. However, a case of a 6-year-old boy with breast cancer has been reported. Thymic irradiation was given to the child at the time of birth^[3]. In men, breast cancer is typically diagnosed at an age approximately 5–10 years older than their female counterparts. In addition, men usually present at a more advanced stage of cancer than do women owing to a delay in diagnosis.

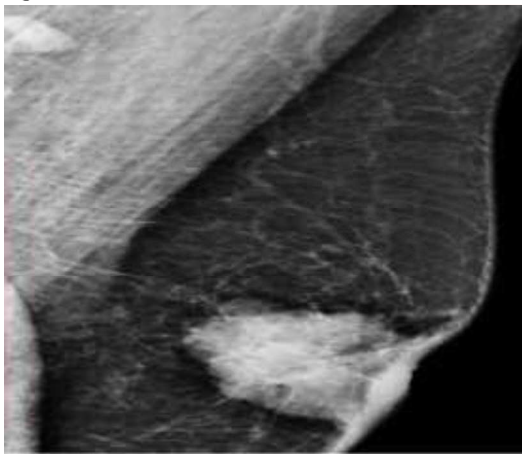


Figure 2: Digital diagnostic mammogram with mediolateral oblique (MLO). Left breast showed evidence of a speculated, hyperdense lesion in retro areolar region. Nipple was retracted with associated thickening of overlying skin and subcutaneous tissue. Ipsilateral Pectoralis appears normal. The lesion was not associated with any calcification. Axillary lymph node with imperceptible fatty hilum seen. No intramammary lymphadenopathy was seen.

Factors predisposing a male to breast carcinoma are; elevated estrogen levels, hormone therapy for prostate carcinoma, gynecomastia, Klinefelter's syndrome^[4] family history, a history of chest irradiation and *BRCA1* or *BRCA2* mutation. Breast cancer in men manifests clinically as a hard, fixed, painless lump that is usually centrally located and may be fixed to the skin or to the underlying Pectoralis muscle. Bloody nipple discharge, may be associated with nipple ulceration, as has been reported in up to 25% of cases⁵. Breast cancer in men is almost always clinically evident and therefore often not evaluated with mammography^[6]. Malignant masses show variable appearances; they may be well marginated or may have a stellate appearance like that of scirrhous carcinoma in the female. Well marginated or Circumscribed masses should be regarded with suspicion as they can represent carcinoma in men^[7]. As well-defined breast nodules in men are likely to represent cancer, biopsy of these lesions is indicated. In a study of 57 patients^[1] describing the imaging (mammography -and sonography) features of primary breast cancer in men, Calcifications were found in 31% of male breast cancer patients. Forty-seven percent of calcifications were pleomorphic and 18% were punctuate. Study by Dershaw et al,^[9] showed calcifications in 13% of patients. Through both these studies, it was found that calcifications which are generally considered benign in women may be associated with malignancy in men. Male breast cancers have similar Sonographic features as in females except for Papillary carcinomas, which presents as a prominent cystic component in males as

Compared to female. The most common histologic type of breast cancer in men is infiltrating ductal carcinoma, accounting for 80- 85% of cancer cases^[10]. Ductal carcinoma in situ is the second most common subtype accounting for about 5% of all cases. Other less common subtypes include infiltrating mammary carcinoma with mixed features and invasive papillary carcinoma^[8].

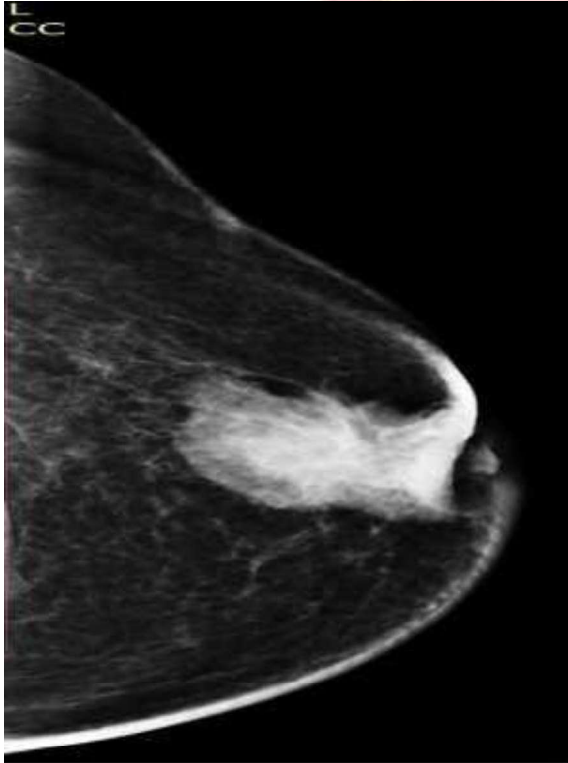


FIGURE 3: Digital diagnostic mammogram craniocaudal (CC) view of left breast. (Hologic Selenia). Left breast showed evidence of a poorly marginated, irregular, hyperdense lesion with spiculated margins in retroareolar region. Nipple was retracted with associated thickening of overlying skin and subcutaneous tissue. No intramammary lymphadenopathy seen.

Comedo, tubular, lobular, medullary, and mucinous in situ lesions are absent or less common. Lobular cancers are less common in men because lobule formation is rare.

Men with breast cancers carry a poorer prognosis, as and when compared with that of females. This can be partly due to detection at an advanced stage and lack of proper awareness. The prognosis for breast cancer depends on lymph node status, tumor size, and duration of symptoms. In a study by Keith et al on 97 breast cancer patients, none of the patients with intraductal or intracystic carcinoma died of cancer. Survival of the entire group of men with invasive carcinoma was 40% after ten years. The ten-year survival for men with negative nodes was 79%, for men with positive nodes 11%. Comparison was done with similar aged females and it was found that men had a significantly lower survival rate. This poorer prognosis was limited to those men with pathologically positive axillary nodes. No reports of mammography in post mastectomy men are available.

Conclusion

Carcinomas in the male breast, occurs with <1% frequency as compared with that of female breast cancer. Mammography in males is used as a diagnostic modality. In men breast tissue is subareolar. So, majority of carcinomas are subareolar in location. Breast cancers are typically diagnosed at an age approximately 5–10 years older than females and unfortunately, at a more advanced stage. Bloody nipple discharge, associated nipple ulceration and ipsilateral axillary lymphadenopathy are commoner at presentation. Well marginated /Circumscribed lesions should be regarded with suspicion. Sonographic features are like those seen in females the prognosis for breast cancer depends on lymph node status, tumour size, and duration of symptoms.

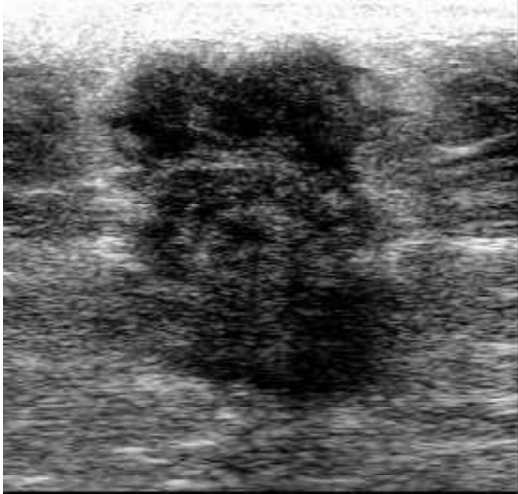


FIGURE 4: Targeted ultrasonography of left breast was performed utilizing an 11MHz transducer (Philips IE33). The retro areolar region of left breast shows an irregular, poorly marginated, hypoechoic lesion with angulated margins and showed posterior acoustic enhancement. No e/o any regional calcification was seen.

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