



Male Breast Imaging

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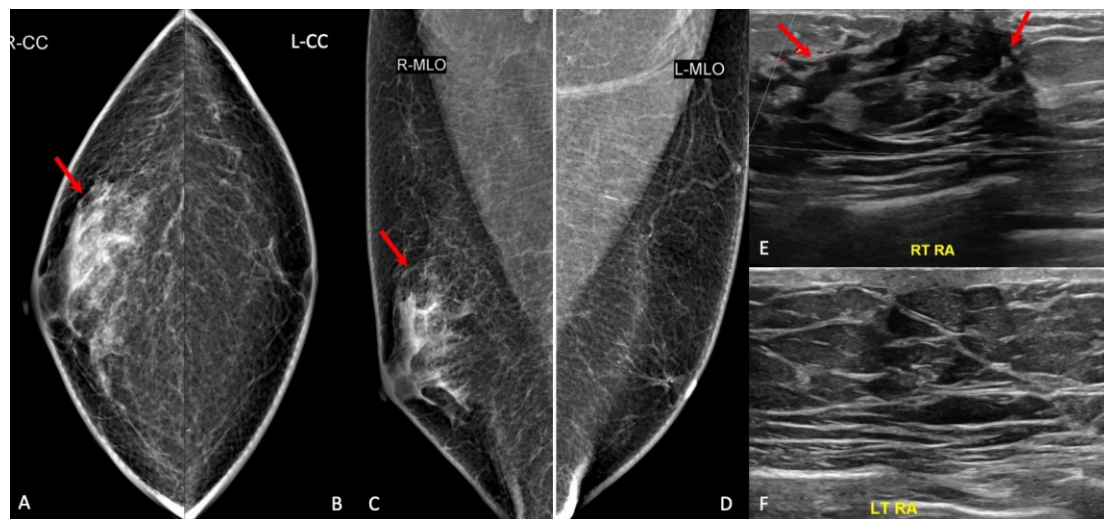


Fig. 1 (A-F): Gynecomastia. 69-years old man with a lump in the right breast for a few weeks. The right CC (A), left CC (B), right MLO (C) and left MLO (D) mammography images show glandular tissue (arrows) on the right and normal fatty tissue on the left. USG of the right breast (E) shows a heterogenous lesion with indistinct margins (arrow) in the right retroareolar region. No biopsy was performed. USG of the left retroareolar region (F) is normal.

The male breast is different from the female breast. It contains only fatty tissue, atrophic ducts and stromal elements. As there are no lobules, lesions related to lobular proliferation like fibroadenoma, Phyllodes' tumor and invasive lobular carcinoma are uncommon (1). However, conditions related to ductal proliferation like gynecomastia, ductal carcinoma in-situ (DCIS), invasive ductal carcinoma and papillary neoplasms may occur.

Male breast imaging is mostly based on complaints of a palpable mass, breast swelling or enlargement, tenderness, nipple discharge or nipple and skin changes (2). The majority of the male breast lumps are benign and the most common cause is gynecomastia. Other less common benign breast conditions that may occur in men are angioliipoma, schwannoma, intraductal papilloma, hemangioma, lipoma, abscess, hematoma and fat necrosis as well as granulomatous mastitis and tuberculosis.

Gynecomastia (Fig. 1):

This is a benign proliferation of ductal and stromal tissue elements. It could be physiologic in neonates or during puberty, may be drug induced or due to hypogonadism

or some neoplasms and sometimes idiopathic. It is the most common male breast disorder on imaging.

Clinical presentation: Unilateral / bilateral subareolar breast swelling / lump, sometimes associated with pain.

Imaging: Glandular tissue is noted in the subareolar region in the male breast on mammography. It can be nodular (fan shaped) dendritic (flame-shaped) or diffuse (nodular and dendritic) which can appear as heterogeneously dense breasts. Even though symptoms are unilateral, gynecomastia is usually bilateral, but may be asymmetric. On USG, it may appear deceptively hypoechoic and irregular but is usually heterogenous in echogenicity with hypoechoic channel-like structures extending into the parenchyma.

On mammography, it is easy to distinguish gynecomastia from malignancy. If there is only fatty tissue without glandular tissue in the breast swelling, then it is termed "pseudo-gynecomastia" and is mostly seen in overweight or obese individuals (2).

Male Breast Cancer (Fig. 2):

About 0.7% of all breast cancers are seen in



At a glance:

- ◆ Imaging of the male breast is ill-understood and often neglected.
- ◆ Gynecomastia is the commonest cause of a male breast swelling and has typical findings on imaging
- ◆ Male breast cancer, though rare, does occur and shows typical features on mammography and sonography.

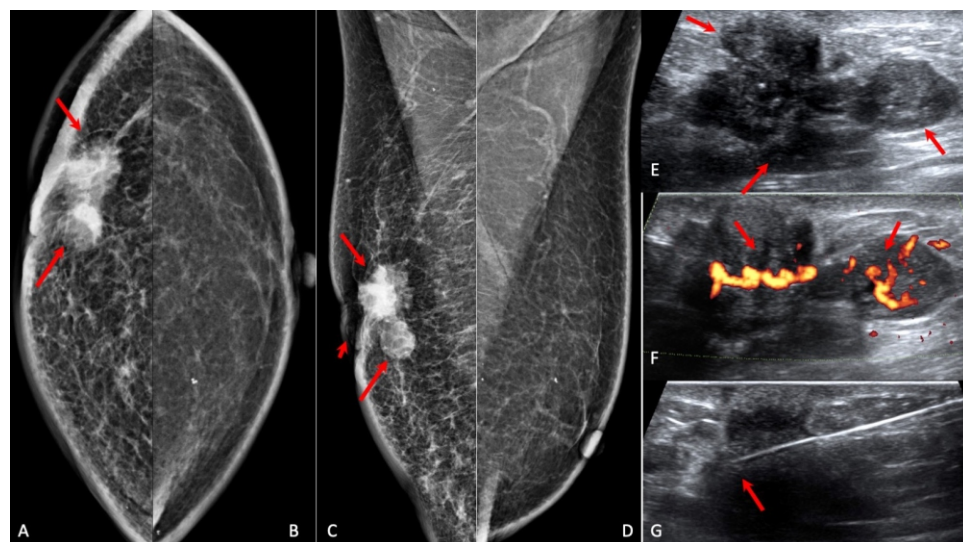


Fig. 2 (A-G): Cancer: 82-years old man came with a painless lump in the right breast for a few months, increasing in size. The right CC (A), left CC (B), right MLO (C) and left MLO (D) images show an irregular, partly circumscribed and partly indistinct, eccentric mass in the right upper outer quadrant (arrows) with skin thickening and nipple retraction (arrowhead). USG (E) shows an irregular hypoechoic mass in the right retroareolar region at 10 o'clock position (arrows) with significant internal vascularity (arrows) on power Doppler (F). USG guided core biopsy (G) showed invasive duct carcinoma, grade II: ER positive, PR positive, HER2neu negative and Androgen receptor positive.

men. They are predominantly invasive ductal cancers, followed by DCIS. Other less common malignant breast conditions are sarcoma and lymphoma. Metastasis to the male breast is quite rare. Risk factors are Klinefelter syndrome, BRCA1 or BRCA2 mutations, family history of a first degree relative with breast cancer, hyperestrogenism and chest irradiation and usually seen in men above 65 years of age. Male breast cancer is often more advanced with axillary nodal metastases at initial evaluation.

Clinical presentation: Firm, nontender, unilateral breast lump, bloody nipple discharge.

Imaging: On mammography, the lesion appears as an irregular or discrete, eccentric (not subareolar) mass. Microcalcifications are less commonly seen. It is usually hypoechoic and irregular on ultrasound. There may be accompanying signs like skin thickening, ulceration, nipple retraction.

References:

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2. Onder O, Azizova A, Durhan G et al. Imaging findings and classification of the common and uncommon male breast diseases. Insights into imaging 2020; 11(27):1-17.

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