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Case Report

Congestive heart failure as a rare cause of unilateral breast edema: A case report & review of the literature

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ABSTRACT

Reported cases encountered difficulty in differentiating between inflammatory carcinoma and breast edema caused by congestive heart failure especially if the breast edema is unilateral. Our presented case is an elderly woman with unilateral breast edema due to congestive heart failure that was initially suspected to have breast cancer based on clinical findings. However imaging studies showed breast edema pattern with no definite underlying mass. This edema was resolved with standard treatment of heart failure. Congestive heart failure may be a possible cause of unilateral breast edema especially in a patient with background of congestive heart failure.

1. Introduction

Congestive heart failure is a common disease especially in elderly population. Its common presentations are well known such as dyspnea, fatigue, weakness, swelling in legs, increased need to urinate at night, and lack of appetite, but awareness of the rare symptoms and signs of this frequently encountered disease is important to prevent unnecessary investigation, unnecessary treatments, cost, and morbidity. Inflammatory carcinoma of the breast (IBC) is a rare type of invasive cancer. It accounts for average 5% of breast cancers, with average age of onset between 45 and 54 years [1]. To confirm breast cancer, biopsy & histopathology should be performed. Breast edema in unilateral location may co-occur with spectrum of etiologies including benign & malignant conditions. We diagnosed a case of unilateral breast enlargement in an elderly woman with multiple comorbid conditions including congestive heart failure that was clinically suspicious of inflammatory breast cancer.

2. Case presentation

In our institution we report a 69 years & 8 months old house woman presented to causality department in a secondary hospital with progressive shortage of breath & medical history including long term pulmonary hypertension & multiple previous hospitalizations of

shortness of breath, chronic pericardial effusion, bronchial asthma & edema of legs. On admission she presented with shortness of breath, paroxysmal dyspnea, orthopnea, cough & bilateral lower limbs pitting edema. Progressive enlargement of right mammary gland with peau d'orange appearance and pitting edema were detected. No associated arm edema noted. She did not have fever or dermal erythema. She did not give any history of breast trauma or any previous surgery. She had a past medical history of diastolic dysfunction, AF, LVF, anasarca, left basal pneumonia, right pleural effusion & pericardial effusion. On clinical examination, the patient was cooperative, showing dyspnea, orthopnea and tachypnea and she had pulse of 104b/min, and blood pressure of 130/80 mmHg. Bilateral crepitations noticed, more in the right side with decreased air entry. There were distended neck veins. There were bilateral legs pitting edema with level till mid shin. Abdominal examination shows shifting dullness & hepatomegaly. Clinical examination of breast revealed enlarged right mammary gland with diffuse thickened indurated skin showing peau d'orange pattern. The breast edema was pitting. There was no nipple discharge, nipple retraction, palpable breast mass or palpable axillary lymphadenopathy.

Full digital mammography revealed right breast skin thickening, Cooper ligaments thickening, and edema without any apparent mass. There are bilateral vascular calcifications & left breast lower central fibroadenoma with popcorn calcification (Figs. 1 and 2). Right breast digital tomosynthesis (DBT) was also obtained showing edema pattern

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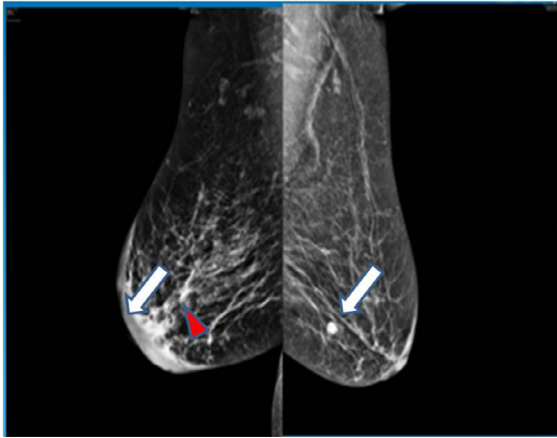


Fig. 1. Digital mammography: RMLO view show right breast edema in term of skin thickening (more than 3 mm), stromal trabecular coarsening and increased density. LMLO view shows benign looking calcified lesion.

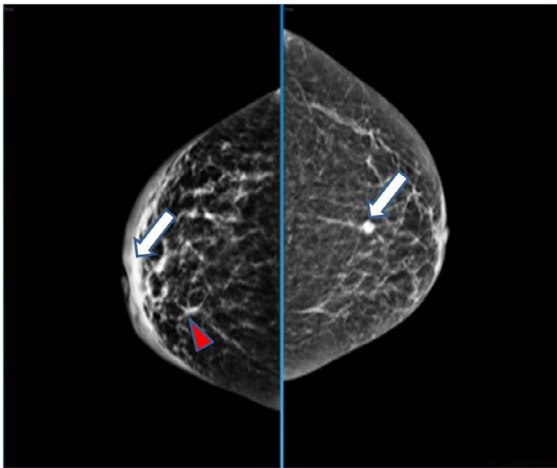


Fig. 2. Digital mammography: RCC view show right breast edema. LCC view shows benign looking calcified lesion.

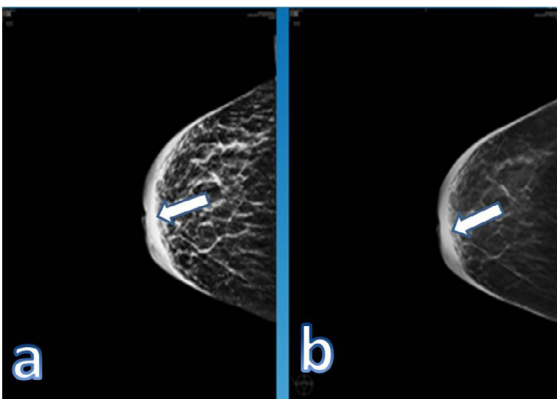


Fig. 3. Digital Breast Tomosynthesis Synthesized 2 D RCC view (a) show right breast edema. R CC slab view (b) shows edema & no masses.

& no underlying masses (Fig. 3). Ultrasound showed right breast skin thickening (5.8 mm), hyper echoic fat lobules & lymphatic engorgement without apparent mass (Fig. 4a). Ultrasound of the left breast shows solid hypo echoic calcified fibroadenoma at 6o'clock zone A/B (Fig. 4b). Her initial chest X-ray showed radiological signs of heart failure (Fig. 5a) & follow up X-ray shows cardiac enlargement and bilateral pleural effusions more at right side & enlarged pulmonary artery

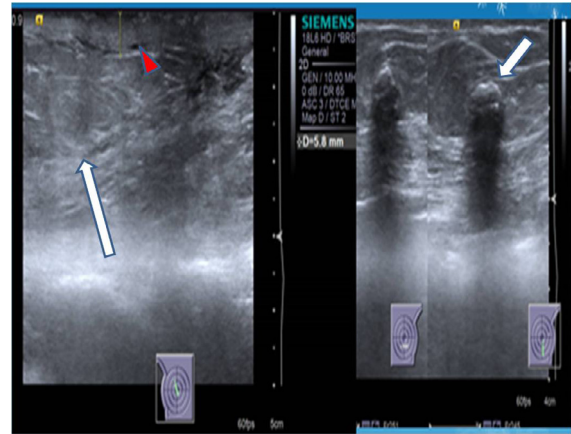


Fig. 4. (a) Right breast edema. (b) Left benign calcified mass.

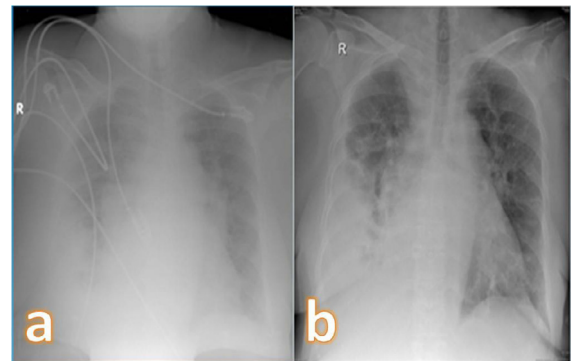


Fig. 5. (a) Initial chest X-ray. (b) Follow up chest X-ray.

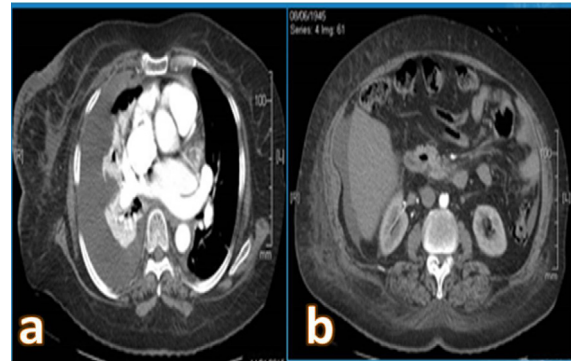


Fig. 6. (a) CT chest revealed significant right side pleural effusion with underlying lung collapse, right lateral chest wall edema & right breast edema. (b) CT abdomen revealed mild ascites & right lateral abdominal wall edema.

(Fig. 5b). The right pleural effusion was taped showing transudate. Echocardiography shows tricuspid regurge & moderate mitral regurge with pulmonary hypertension. CT scan of the chest & abdomen was requested for assessment of lung, pleura & suspected liver cirrhosis. CT scan shows findings of decompensated cardiac failure. Heart failure was considered as a differential diagnosis rather than IBC since the edema seen on the CT chest (Fig. 6a) & abdomen (Fig. 6b) more at right side of the body. Yet, unilateral breast edema caused by heart failure is a rare entity, so we recommended tissue biopsy (skin punch biopsy) to rule out inflammatory breast cancer, while arranging for the biopsy the patient was on standardized anti failure measures. Eight days later, the patient shows significant improvement of the breast condition. Right breast ultrasound & right MLO view were repeated to assess the condition. The right MLO mammography view (Fig. 7) and ultrasound

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