

CASE REPORT

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Exteremly Rare Case Due to Congestive Cardiac Failure: Unilateral Severe Breast Edema Mimicking Inflammatory Breast Cancer

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ABSTRACT Congestive cardiac failure (CCF) is a group of diseases frequently encountered in daily practice. Although the clinical manifestations of CCF are well known, its rare atypical symptoms can be confusing. In this article, we shared findings of a rare case due to CCF. Imaging methods revealed massive edema, skin thickening and erythema isolated to the right breast. Inflammatory breast cancer was considered primarily because the isolated right breast findings. Symptoms regressed after symptomatic CCF treatment. Unilateral breast edema due to CCF is reported in very few papers in the literature, and this entity can easily misdiagnosed as malignancy.

Keywords: Computerized tomography; mammography; cardiac failure; breast edema

Congestive cardiac failure (CCF) is a common disease in a daily cardiology practice, especially in elderly patients. Its symptoms, physical examination findings, treatment and complications are generally well known. The most common findings are; dyspnea, fatigue, weakness, swelling in legs, angina, syncope and cyanosis. Being aware of the rare complications of CCF, which is more common in elderly patients with high co-morbidity, provide appropriate clinical management and unnecessary examinations can be avoided.

Inflammatory breast carcinoma (IBC) is a rare but highly malignant disease of the breast. Typical clinical findings of IBC include erythema, edema, and peau d'orange appearance on the breast skin. It is seen in approximately 5% of all breast cancers.¹ While IBC can be considered as one of the most important causes of unilateral breast edema, in addition to this, etiology may also cause many benign and malignant entities.

In this article, we aimed to present the imaging findings of unilateral breast edema mimicking malignancy in an elderly woman with severe CCF. Informed consent forms of the patients obtained before the imaging.

CASE REPORT

An 82-year-old woman presented with a complaint of shortness of breath and enlargement of the right breast. The patient had CCF for several years and was diagnosed with acute promyelocytic leukemia 3 months ago. The patient was taking Lisinopril 5 mg (Sanofi, Turkey) and spironolactone 25 mg for heart disease, all-trans retinoic acid, mercaptopurine and methotrexate for leukemia. Her leukemia was in remission status on admission.

Bilateral severe pleural effusion and a marked increase in heart size were detected in chest X-ray and thorax computed tomography examinations obtained to investigate dyspnea (Figure 1).

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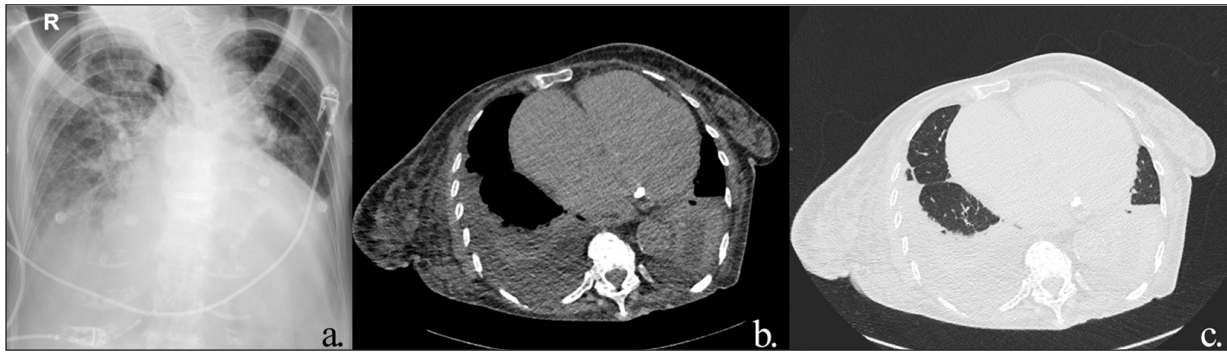


FIGURE 1: a) Chest X-ray, b) Non-contrast thorax CT mediastinum window, c) Non-contrast thorax CT parenchyma window images show, cardiac severe enlargement due to CCF, bilateral pleural effusion and compressional lung atelectasis. CT: Computerized tomography; CCF: Congestive cardiac failure.

Echocardiography of the patient revealed marked dilatation in all cardiac chambers, severe mitral and tricuspid valve insufficiencies with pulmonary hypertension findings.

Also, there was an enlargement, skin thickening, erythema, edema in the right breast compared to the ipsilateral one. There was no pathological lymph node in the axilla or a palpable mass on physical examination. The patient had no previous breast disease or surgery history. Imaging tests were scheduled for suspicious breast malignancy or venous thrombosis.

Digital mammography and ultrasound revealed isolated skin thickening and diffuse high density on the right breast compared to ipsilateral. There was no mass or suspicious finding for breast malignancy, no axillary pathological lymph node found (Figure 2).

We immediately started intravenous diuretic treatment for cardiac failure symptoms, one day after the treatment, patient's breathing difficulties as well as breast enlargement have disappeared. We then concluded enlargement and edema of the right breast were due to the CCF based on treatment response and ruling out the other possible causes.

DISCUSSION

There are many benign and malignant causes in the etiology of breast edema.² Common causes of breast edema include mastitis, granulomatous diseases, postirradiation changes, lymphoma, venous occlusions, inflammatory breast cancer and CCF.³ Among these entities, a more symmetrical involvement is observed in systemic diseases, while unilateral breast edema usually reminds the diagnosis of infection or malignancy.

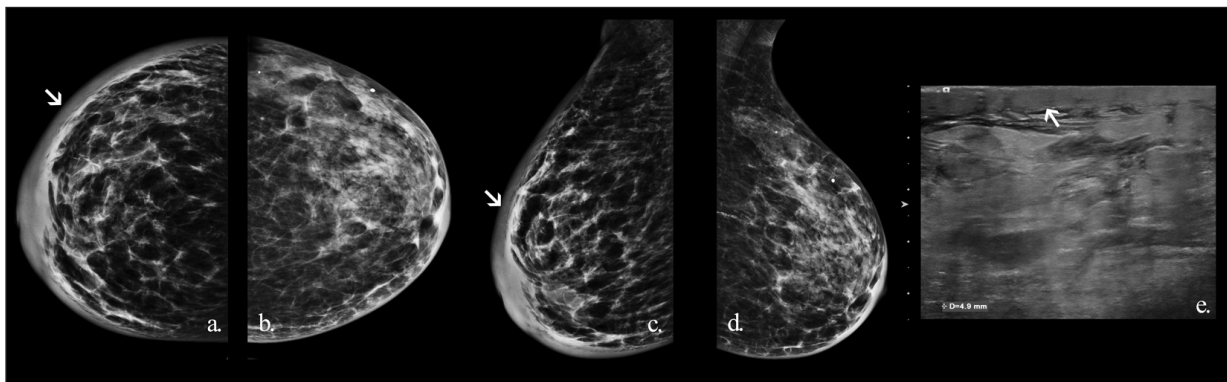


FIGURE 2: a) RCC, b) LCC, c) RMLO, d) LMLO mammography, e) Ultrasonography images show severe thickening in right breast skin, subcutaneous fatty tissue and breast parenchyma edema (arrow). RCC: Right cranio caudal; LCC: Left cranio caudal; RMLO: Right mediolateral oblique; LMLO: Left mediolateral oblique.

IBC should be investigated and ruled out in a case with unilateral breast edema, skin erythema and peau d'orange findings. In mammographic imaging of IBC cases, thickening of the skin, and an increase in glandular density due to edema are observed in the breast tissue. In ultrasonography examination, mass forming lesion or fluid collection areas can be observed in IBC, but often nonspecific findings such as edema and skin thickening are detected only. With such findings, IBC is difficult to differentiate from other diffuse edematous entities of the breast and histopathological sampling may be required.^{1,3}

In the literature, in 9 different reports between 1981 and 2018, a total of 11 cases of unilateral breast edema associated with CCF were described.² As in our case, malignancy was generally included in the differential diagnosis in these reports and was ruled out. The general opinion regarding the relationship between CCF and unilateral breast edemas considered pleural effusion and the patient preference to lying on one side. Pluchinotta et al. reported that CCF patients have a pitting appearance on the skin, but this finding is not encountered in malignant edema.⁴

Unilateral breast edema due to CCF is a very rare condition that there was only 11 patient presented in 9 different papers in previous literature.² Although rarely seen, it is important to be aware of this rare entity since it may easily be confused with malignant processes and thus, increase the number of unnecessary diagnostic procedures as well as burden in patients with multiple comorbidity.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

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