Case Report

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Lupus Mastitis in a Young Female Mimicking a Breast Carcinoma; A Rare Entity Through A Case Report and Review of the Literature

Oktay et al. Lupus mastitis in a young female

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Key Points

- Lupus mastitis is a rare presentation of lupus panniculitis that usually affects women of childbearing age.
- It should be considered in the differential diagnosis of a suspicious breast mass on mammography or ultrasound particularly if the patient has a background of systemic lupus erythematosus.
- Accurate patient history and knowledge of the typical imaging appearance on ultrasound and mammogram can help the diagnosis.
- It is advisable to avoid biopsy and surgical intervention if the diagnosis can be established with the clinical and radiological features.

Lupus mastitis in a young female mimicking a breast carcinoma; a rare entity through a case report and review of the literature

Abstract

Lupus mastitis is a rare presentation of lupus panniculitis that usually affects women of childbearing age. The condition is recurrent and progresses along with the underlying disease, fat necrosis, calcification, fibrosis, scarring, and breast atrophy. Lupus mastitis is the term for breast involvement that often mimicking malignancy. Therefore, it should be considered in the differential diagnosis of a suspicious breast mass on mammography or ultrasound particularly if the patient has a background of systemic lupus erythematosus or discoid lupus erythematosus (SLE/DLE). However, accurate patient history and knowledge of the typical imaging appearance on ultrasound and mammogram can help the diagnosis. Traumatic procedures such as surgery or biopsy may worsen the condition and it is advisable to avoid biopsy if the diagnosis can be established with the clinical and radiological features. Thus, awareness of the radiologic and clinical features of LM is essential to avoid unnecessary interventional procedures that carry the potential for disease exacerbation. The authors present here the imaging findings of lupus mastitis in a 37-year old female with SLE, presented as bilateral palpable breast lumps.

Keywords: Lupus mastitis, Panniculitis, Lupus Erythematosus, Breast Calcification

Abbreviations: LM: Lupus Mastitis, LP; Lupus Panniculitis, SLE; Systemic Lupus Erythematosus (SLE), DLE; Discoid Lupus Erythematosus

Introduction

Lupus mastitis (LM) is a rare manifestation of lupus panniculitis (LP), an unusual clinicopathologic variant of systemic lupus erythematosus (SLE) or discoid lupus erythematosus (DLE) characterized by an inflammatory process involving subcutaneous fat(1). Lupus mastitis is the term for breast involvement that often mimicking malignancy. The condition is recurrent and progresses along with the underlying disease, fat necrosis, calcification, fibrosis, scarring, and breast atrophy (2). LM should be considered in the differential diagnosis of a suspicious breast mass on mammography or ultrasound particularly if the patient has a background of SLE/DLE (3). Diffuse, bilateral calcifications on mammography, mainly related to calcified foci of degenerated or necrotic fat tissue, and sonographic findings of recurrent breast lumps support the diagnosis of lupus mastitis. In addition, evidence of necrosis in the adipose tissue and periglandular or perivascular lymphocyte infiltrations in the histologic exam, contribute to substantiating the diagnosis (4). The authors present here a rare case of lupus mastitis in a 37-year old female with a known history of SLE, presented as bilateral palpable breast lumps and diffuse calcification on the mammogram.

Case presentation

A 37-year-old female was presented to our hospital, complaining of nodular palpable masses in her breasts. She had no breast complaint or family history of breast pathology in the past. However, her mother has a familial Mediterranean fever and her two cousins were diagnosed with SLE.

About 4 years ago she had joint pain, redness on the face, hair loss, swelling of the eyelids, hands, and feet that probably diagnosed as having a connective tissue disease. In physical examination, the malar rashes on her face, hyperemic lesions around the mouth, and mild eyelid and pretibial edema were noted. There were some local areas of hair loss and eyebrows. Other findings were unremarkable.

The laboratory analysis yielded hemoglobin (Hb): 10.9 g/dl (12-16), white blood cells: 2690 /mm3 (4500-11000) with neutrophils 53.5 %, Urea: 17 mg/dl, creatinine: 0.58 mg/dl, fasting blood glucose: 91 mg/dl, Hba1c:5.6%, platelets: 127000/mm3, and 24 hrs urine protein 1.36 gr/day. The anti-ribosamal antibody and anti-nucleosomes were positive other lupus antibodies were negative. Her renal biopsy revealed type-5 lupus nephritis.

In the sonographic exam, axillary lymphadenopathies and ill-defined isoechoic masses with acoustic shadows related to coarse dystrophic calcifications in the breast parenchyma were observed, compatible with fat necrosis (Fig.1 and 2).

On the mammogram, diffuse calcifications starting under the skin and scatter in the whole bilateral breasts parenchyma were observed. They had a coarse and curvilinear shape, consistent with the fat necrosis (Fig.3).
The patient was diagnosed to have SLE, complicated by lupus nephropathy and lupus mastitis. She was given steroids and antimalarial drugs, the recommendation for the ophthalmic exam, and outpatient polyclinic control.

Discussion and Conclusion

Kaposi first proposed the term “lupus panniculitis in1883. It affects both sexes, but 90% of the cases occur in women of childbearing age (2).
Lupus mastitis is a rare benign inflammation of the deep subcutaneous adipose tissues of the breast, seen in up to 2 to 3% of the patients and rarely being the initial presentation of systemic lupus erythematosus (5, 6). It is part of lupus panniculitis but is called lupus mastitis when involving the breast glands. So far, 27 cases have been reported in the literature: Kinonen and coll. reviewed 22 cases and 6 additional cases have since been reported (6).
The precise pathophysiology of LP/LM remains unclear, though a predominant theory suggests an autoimmune-related etiology. Supportive evidence for this theory includes the finding of immune complexes, both at the basement membrane of the dermal-epidermal junction and in the blood vessels in the areas of panniculitis. In addition, there is often a marked improvement of symptoms with immunosuppressive therapy (1).
The manifestations of lupus mastitis include masses in the breast, axillary lymphadenopathy, fat necrosis, fibrosis, and calcifications (7). Our patient had the same typical findings.
Lupus mastitis is the term for breast involvement that often mimicking malignancy. The condition is recurrent and progresses along with the underlying disease, fat necrosis, calcification, fibrosis, scarring, and breast atrophy (2). It should be considered in the differential diagnosis of a suspicious breast mass on mammography or ultrasound particularly if the patient has a background of SLE/DLE (3).

Common mammographic findings include ill-defined, dense breast tissue with or without associated microcalcifications. Alternatively, breast tissue may show calcifications only that can be coarse, or curvilinear suggesting fat necrosis. Ultrasound can show a similarly ill-defined, isoechoic, or hyperechoic mass.

It is advisable to avoid biopsy if the diagnosis can be established with the clinical and radiological features (especially the unusual mammographic calcification) because it may worsen the condition. However, FNA will be helpful if there is a doubt about the diagnosis or when the swelling is localized (1, 5, 8). Accurate patient history and knowledge of the typical imaging appearance of LM may help prevent or minimize biopsy and surgical intervention, which carries the potential for the disease exacerbation (8, 9).

Histologically, most LM cases show lymphocyte-predominant inflammation involving breast ducts, lobules, vessels, and adipose tissue, with hyaline fat necrosis being the most characteristic finding (10).

In our case, there were coarse and curvilinear calcifications on the mammogram and isoechoic masses with axillary lymphadenopathy on ultrasound.

Lupus mastitis should not be confused with breast carcinoma, idiopathic granulomatous mastitis, Lymphoma, and other connective tissue diseases. The clinical features and histology help differentiate between these conditions (2, 11). However, lupus mastitis may be exacerbated by surgical trauma; therefore, needle core biopsy should be preferred to open excisional biopsy. Indeed, the latter procedure has been reported to trigger a very painful progression of lupus mastitis, eventually ending up in obligate mastectomy (4).

Antimalarial drugs are the primary medical treatment option for LM, corticosteroids may also be used in combination or alone. Surgery should only be considered in patients with ongoing complaints despite appropriate medical treatment, because of the possibility of triggering the risk of additional exacerbations (3, 12).

In summary, we reported an unusual case of LM in a female with a known case of SLE. The patient presented with palpable breast masses. The bilateral breast calcification on mammography and isoechoic masses with posterior shadows on sonogram was mimicking a breast carcinoma. However, accurate patient history and knowledge of the typical imaging appearance on ultrasound and mammogram helped us the diagnosis. Thus, awareness of the radiologic and clinical features of LM is essential to avoid unnecessary interventions such as biopsy and surgery that carries the potential for disease exacerbation.

Informed Consent:

Written informed consent was obtained from the patient for publication of this case report.

Peer-review

Externally peer-reviewed.

Conflict of interest

The authors have no conflicts of interest to declare.

Financial disclosure
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Figure 1.

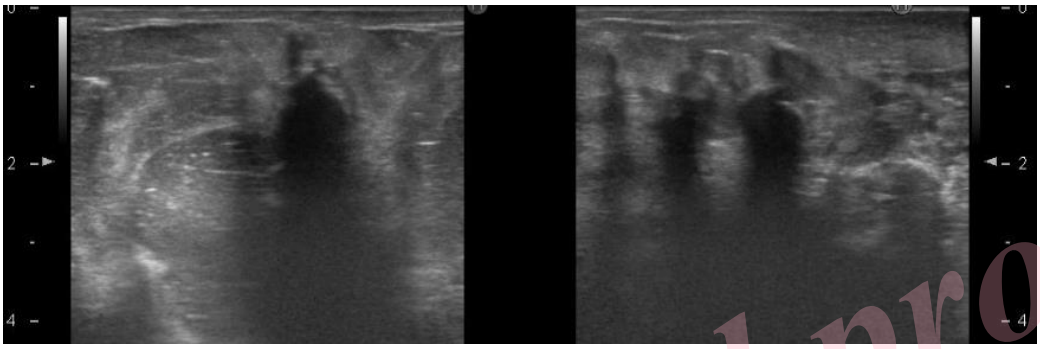

Figure 1. Ultrasound images of both breasts show ill-defined isoechoic masses with posterior acoustic shadows.

Figure 2.

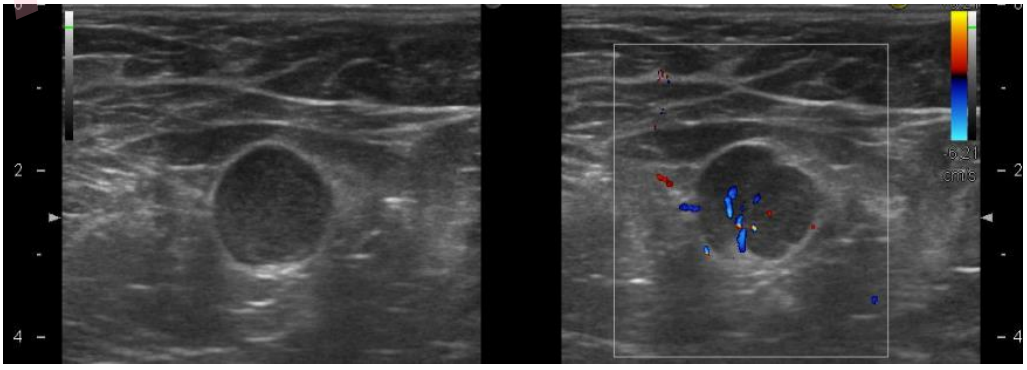

Figure 2. Ultrasound images show axillary lymph nodes enlargement, with the thick cortex.

Figure 3.

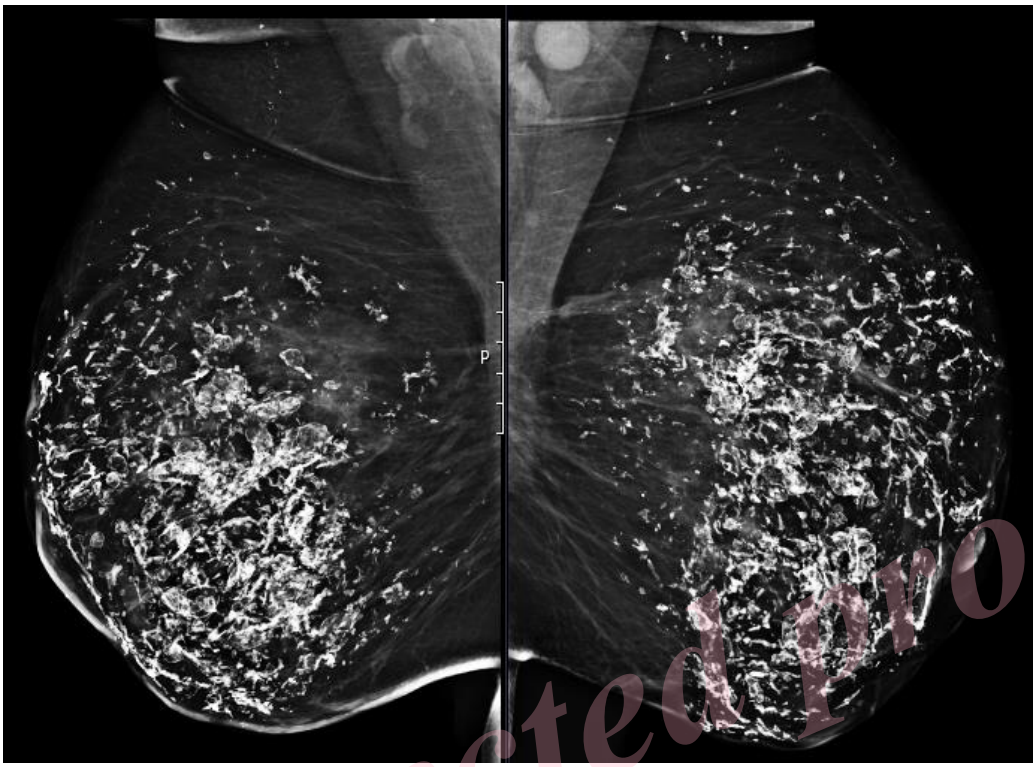

Figure 3.An MLO view of both breasts shows bilateral diffuse, coarse, and curvilinear calcifications, starting under the skin and scatter in the whole bilateral breasts parenchyma.