

Diabetic mastopathy: a breast carcinoma mimic

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A 62-year-old woman with a long-standing history of type 1 diabetes mellitus presented to the breast clinic with a palpable breast lump. She had incidentally discovered a painless lump in her left breast that had increased in size over the last 3 months. She denied nipple discharge or overlying skin changes but reported a family history of one maternal aunt who had breast cancer diagnosed in her sixties.

Clinical examination revealed an irregular hard mass at the upper outer quadrant of the left breast with no evidence of axillary lymphadenopathy. The right breast was unremarkable.

Mammography showed heterogeneously dense breasts with asymmetrical density at the left upper breast, but no discrete mass or spiculations (Fig 1). There were also no suspicious microcalcifications or architectural distortion. Ultrasonography revealed an approximately 4-cm irregular hypoechoic lesion with strong posterior acoustic shadowing at the

upper outer quadrant of the left breast and no increase in vascularity (Fig 2). Overall features were suspicious of malignancy.

Ultrasound-guided core biopsy was performed. Histological examination showed lymphocytic lobular mastitis associated with stromal fibrosis of the breast, findings compatible with diabetic mastopathy (Fig 3).

Diabetic mastopathy is a rare fibro-inflammatory disease of the breast. It is usually seen in association with type 1 diabetes mellitus,¹ although rarely can also be seen with long-standing type 2 diabetes mellitus. It is typically found in premenopausal women. Many such patients are known to have other complications of diabetes mellitus such as retinopathy, nephropathy, and neuropathy.¹ Its exact pathogenesis is not well understood but likely multifactorial, probably related to an inflammatory or immunological reaction.

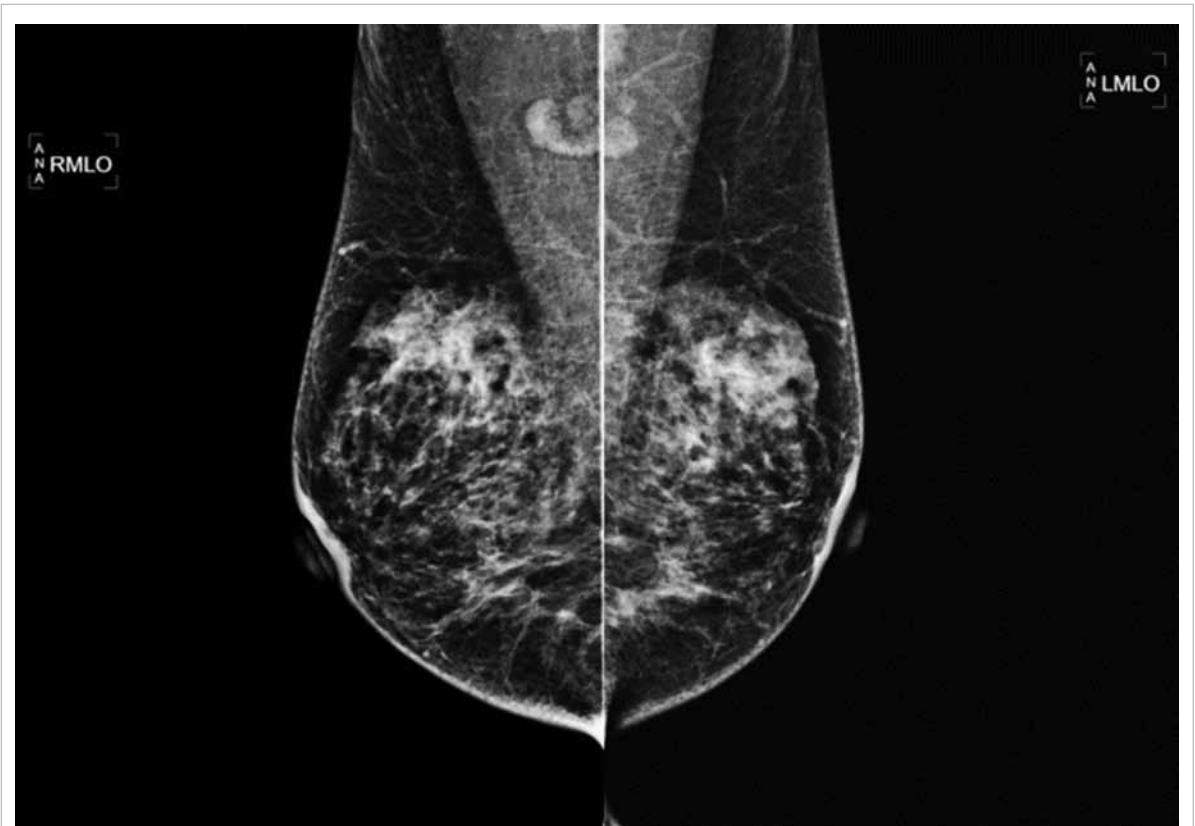


FIG 1. Bilateral mammogram (mediolateral oblique views) showing heterogeneously dense breasts with asymmetrical density at the left upper breast. No suspicious microcalcifications or architectural distortions are visible. Prominent axillary lymph nodes with fatty hila are visible bilaterally

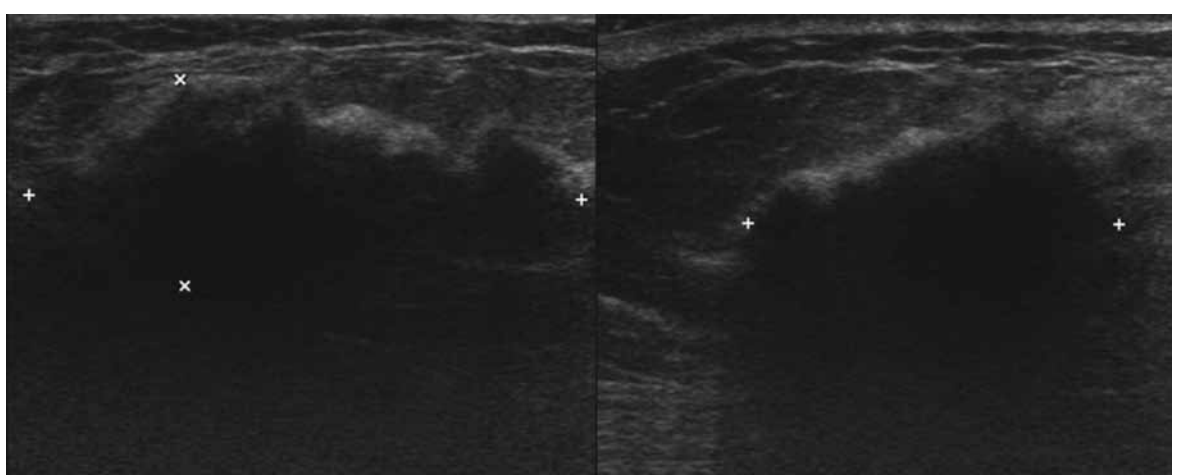


FIG 2. Ultrasonogram of the left breast (transverse and longitudinal images) showing that the palpable lump corresponded to an approximately 4-cm irregular hypoechoic lesion with strong posterior acoustic shadowing at the upper outer quadrant of left breast

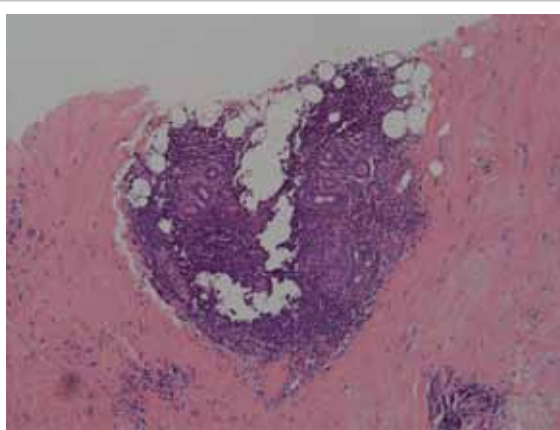


FIG 3. Micrograph showing atrophic breast tissue with well-delineated dense perilobular lymphocytic infiltrates. The stroma is fibrosclerotic with scattered plump to stellate shaped fibroblasts. Findings are characteristic of diabetic mastopathy. No malignancy is evident (haematoxylin and eosin; $\times 100$)

Clinically, diabetic mastopathy often presents as a hard, painless, irregular breast mass that can also be multiple and bilateral (60% of the cases). The clinical findings are often suspicious of breast carcinoma and patients are thus referred for imaging.

On mammogram, diabetic mastopathy may appear as an ill-defined mass or asymmetric density, without associated calcifications or spiculations, corresponding to the site of presenting palpable abnormality, but very often obscured by dense breast tissue.² On ultrasonogram, diabetic mastopathy appears as an irregular poorly defined hypoechoic

mass of between 2 and 6 cm in size, with moderate to marked posterior shadowing and absence of vascularity on colour Doppler imaging.³

Clinical examination and imaging studies cannot differentiate diabetic mastopathy from breast carcinoma, and ultimately the diagnosis can only be made on histology from core or excisional biopsy.

Diabetic mastopathy is a benign entity without malignant potential^{4,5} and should therefore be treated conservatively. Surgery should be avoided as the recurrence rate following surgical excision has been reported to be rather high at around 32%, and usually within 5 years.⁶ Recurrences can be single or multiple, and can occur at the ipsilateral, contralateral, or bilateral breasts. Clinicians should be aware of this entity if a diabetic patient presents with a palpable breast lump, after eliminating the possibility of breast carcinoma. Once this benign condition is diagnosed, the patient should be advised to perform routine breast self-examination and have regular clinical breast examinations. If any changes are detected, they should be referred for imaging and core biopsy performed if necessary.

In summary, diabetic mastopathy is an uncommon but important benign entity that can mimic breast carcinoma clinically and radiologically. Ultrasound-guided core needle biopsy of the lesion is required to establish the diagnosis. Increasing awareness of this condition and careful correlation of radiological and pathological findings are essential to avoid unnecessary surgical intervention, reduce patient anxiety, and ensure optimal patient care.

Author contributions

All authors have made substantial contributions to the concept or design of the study, acquisition of data, analysis or

interpretation of data, drafting of the manuscript, and critical revision for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

The authors have no conflicts of interest to disclose.

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Ethics approval

This study was conducted in accordance with the principles outlined in the Declaration of Helsinki. The patient provided verbal informed consent.

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