

CASE REPORT

Diabetic mastopathy: a case report

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Abstract

Diabetic mastopathy (DMP) is a source of confusion with breast carcinoma. The association between mastopathy and type 1 diabetes mellitus (DM) of long duration has been reported. A case of diabetic mastopathy in a young nulliparous woman with a long-standing, previously unrecognized DM is presented. The diagnosis was established only after an excisional biopsy of the masses in both breasts, as the other traditional investigations (ultrasound, and fine needle aspiration cytology) were all inconclusive.

Keywords: *Diabetis mellitus, breast mass, mastopathy,*

Case report

A twenty-five year old woman presented to the OB/GYN Department at the New Medical Centre Specialty Hospital in Dubai (UAE) in October 2008 as a case of abnormal uterine bleeding for few months. She was nulliparous and only recently married, with no significant past medical and surgical history, and negative family history of hereditary illness and cancer. A bilateral hard breast masses were identified on routine breast examination by the gynecologist (about which the patient was totally unaware). The patient was referred to the surgeon for further evaluation and management of the breast masses.

Physical examination of the breasts revealed a six centimeter hard mass in the retro-areolar space of the right breast and a seven centimeter hard mass at the subareolar area of the left breast. There was neither skin dimpling, peau d'orange edema, nor discharge from nipples. There was no clinical evidence of axillary or supraclavicular lymphadenopathy.

On mammography, both breasts consisted of dense glandular tissue, no discrete nodules were found. Neither microcalcification nor architectural distortion was detected. However, an irregular mass with acoustic shadowing was demonstrated on ultrasound scan (USS) in both breasts, indistinguishable from that of breast carcinoma.

Fine needle aspiration (FNA) with cytology and core biopsy of the lesion was non informative as the lesions were too hard for the needle to successfully penetrate the lesions. Thereafter, localized incisional biopsy of the masses in the two breasts was planned. The patient was discovered to be diabetic only during routine preoperative investigation

where her fasting blood glucose level was 31.24 mmol/l, Hb A1c; 15.3 %.

Thorough medical examination by the physician suggested early features of retinopathy and peripheral neuropathy, indicating an undiagnosed diabetic state for a substantial period of time. The thyroid function tests were normal, and anti-GAD antibody titer was negative (< 6.06 kU/L). Both tests were performed to rule out a possible involvement of autoimmune disease.

Microscopic features of the bilaterally biopsied breast tissue comprised of dense periductular, intracellular and perivascular mononuclear "inflammatory infiltrate" with increased dense fibrocollagenous intralobular stroma. No dysplastic or malignant cells were detected in all sections examined (Fig. 1).

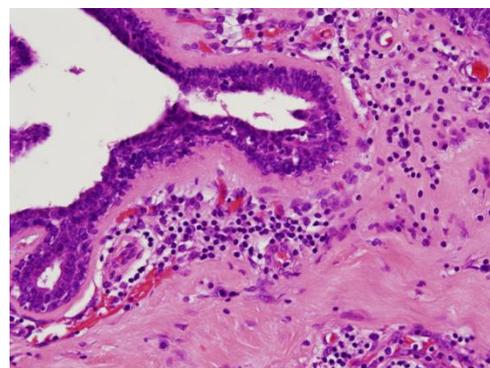


Figure 1: Microscopic features of the bilaterally biopsied breast tissue

Comments

Diabetic mastopathy (DMP) is a rare tumour-like fibrous proliferation of the breast that occurs in patients who have a long history of diabetes mellitus (DM).^{1,2} At the time of presentation with breast symptoms, patients often have associated complications of DM such as retinopathy, nephropathy, and neuropathy.^{3,4}

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Histologically, it consists of lymphocytic mastitis and stromal fibrosis.^{1,3,4,5} Most published reports on DMP are on premenopausal women with long-standing type 1 DM.^{1,2,5} Seidman et al reported a mean duration of greater than 13 years (range 4 - 27) for DMP to develop.⁶

Although the pathogenesis is still obscure and could be multifactorial, it is generally believed that these lesions are attributable to extracellular matrix expansion secondary to increased collagen production and decreased degradation, in part related to the hyperglycaemic state.⁴ However, some studies have attributed the changes to an autoimmune reaction to diabetogenic matrix accumulations.⁷

As DMP may be confused with breast carcinoma, it is difficult to distinguish these two entities both physically and by imaging. There is no consensus on the diagnostic criteria for DMP.^{2,7,8,9} Although Logan and Hoffman mentioned several criteria for the clinical and radiological diagnosis of DMP including: long term history of insulin dependent diabetes mellitus (IDDM); radiographically demonstrated dense glandular tissue; one or more hard irregular easily movable, discrete, painless and palpable masses and strong ultrasound acoustic shadowing.² They have also advocated the use of FNAC in the diagnosis of DMP. They mentioned that the firm resistance experienced during the back and forth motions of the needle are stronger than that of benign and malignant breast conditions. Hence, this could be a clue to the diagnosis of DMP,² though, unfortunately, DMP contains little cellular material, making cytological diagnosis difficult.⁷

The clinical characteristic of this disease is that it tends to be recurrent and bilateral in 63 % of the cases, enabling it to be followed closely with ultrasound, avoiding unnecessary surgical biopsies.^{3,5,9}

In conclusion, recognizing DMP requires an awareness that this entity exists. A careful correlation between the patient's clinical history and the physical, radiological, and pathological examinations of the breasts, and the presence of significant acoustic shadowing on ultrasound of the mass or masses, which may be multiple and bilateral, may point to the possibility of DMP, but a histological confirmation is still required to rule out serious malignant conditions presenting in a similar way.

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