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Case Report

A case of diabetic mastopathy: An unusual breast lesion mimicking cancer in type 1 diabetes mellitus

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ABSTRACT

Background: Diabetic mastopathy is a rare fibroinflammatory disorder seen among middle aged and premenopausal age group. It is also called lymphocytic mastopathy or sclerosing lymphocytic mastitis. This is seen associated with type 1 diabetes mellitus and other autoimmune disorders specially related to endocrine disorders like thyroid. The definite diagnosis of diabetic mastopathy is truly based on biopsy and histopathological examination.

Case Report: A 33 year old female came to hospital with complaints of swelling in right breast since one month and pain since one week. She was a known case of type 1 diabetes mellitus since 10 years and on regular medications. Radiological Impression was possibilities of mastitis with abscess formation more likely to be considered. But infiltrating malignant neoplasm with areas of necrosis is also a differential diagnosis. Our histopathology laboratory, we received incision biopsy from right breast and microscopic examination from multiple tissue sections showed breast parenchyma with extensive fibrosis and periductal inflammatory infiltrate predominantly lymphocytes, plasma cells and a few neutrophils. Some of the ducts show epithelial proliferation forming bridges and micropapillae. Histopathological diagnosis was Lymphocytic Mastitis with features of Atypical Ductal Hyperplasia.

Conclusion: The diagnosis of Diabetic Mastopathy is based on clinical details, radiological evaluation and biopsy correlation. Sometimes it's difficult to differentiate from carcinoma breast, so histopathological examination is indicated for a definitive diagnosis and management.

1. Introduction

Diabetic mastopathy is an uncommon inflammatory disorder of breast associated with type 1 diabetes mellitus and other autoimmune diseases. Also called lymphocytic mastopathy, sclerosing lymphocytic mastitis and diabetic fibrous breast disease. Patients with Diabetic Mastopathy presented with palpable, hard, painless, irregular mass in one or bilateral breast. The diagnosis of Diabetic Mastopathy is based on histopathological examination and characterised by a triad of keloidal type fibrosis, perivascular lymphocytic infiltration and epitheloid stromal myofibroblasts. The clinical and imaging findings are inconclusive for a definitive diagnosis and sometimes misdiagnosed as malignancy. So biopsy confirmation is needed for a definitive management. [1,2]

2. Case Report

A 33 year old female presented with complaint of swelling in right breast since one month and pain since one week. She was a known case of type 1 diabetes mellitus since 10 years and on regular medications. On local examination of right breast, there was a palpable firm tender swelling

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roughly measuring 6x6cm in the upper inner and outer quadrant. No history of pus or blood mixed nipple discharge present. Ultrasound examination of right breast showed a large ill defined predominantly hyperechoic lesion seen in medial half of right breast, small collection with mobile internal echoes and irregular margins seen in the lateral aspect of the lesion. Left Breast parenchyma shows normal echogenicity. No evidence of bilateral enlarged axillary lymph nodes. Radiological Impression was possibilities of mastitis with abscess formation more likely to be considered. But infiltrating malignant neoplasm with areas of necrosis is also a differential diagnosis.

Complete blood count showed hemoglobin of 11.8g/dl, RBC of 4.43millions/ml, total count of 11,000 and platelet was 4.42 lakhs/ml. Fasting blood sugar (FBS) and postprandial blood sugar (PPBS) were high, 273 and 337 respectively.HbA1c was also very high (13.8%). Thyroid function test, RFT and LFT were within normal limits.

In our histopathology laboratory, we received incision biopsy from right breast, consist of multiple grey brown soft tissue bits, largest measuring 2x1x0.5cm and smallest measuring 1x1x0.5cm.

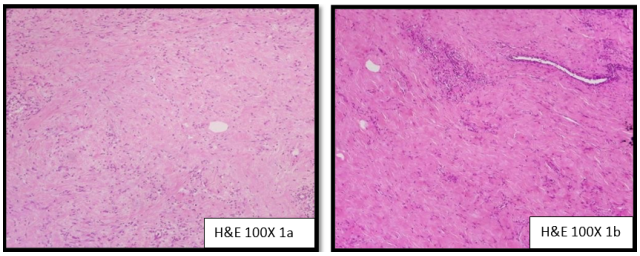

Figure 1: a and **b:** Breast parenchyma showing extensive areas of keloidal type fibrosis.

Microscopic examination from multiple tissue sections showed breast parenchyma with periductal inflammatory infiltrate predominantly lymphocytes, plasma cells and a few neutrophils. Also seen are numerous proliferating blood vessels, many of them exhibiting hyaline change with areas of necrosis embedded in a fibrocollagenous stroma. Some of the ducts show epithelial proliferation forming bridges and micropapillae. Histopathological diagnosis was Lymphocytic Mastitis with features of Atypical Ductal Hyperplasia – incision biopsy right breast.

3. Discussion

Diabetic mastopathy is an uncommon breast fibroinflammatory disorder and usually associated with Type I insulin-dependant diabetes mellitus, but also seen associated with Type 2 Diabetes mellitus, endocrine disorders like thyroid and other autoimmune disorders in premenopausal women. The diagnosis of Diabetic Mastopathy is based on clinical features like breast tissue thickening or breast lump, radiological like increased breast

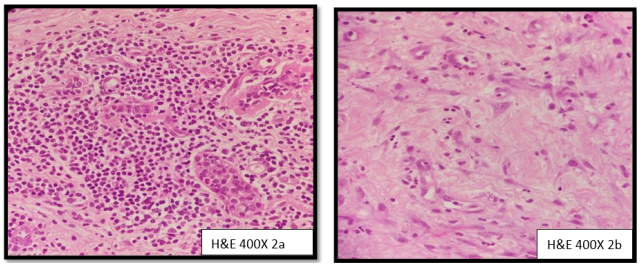

Figure 2: a and **b:** Breast tissue with periductal lymphocytic infiltration and stromal epitheloid myofibroblasts.

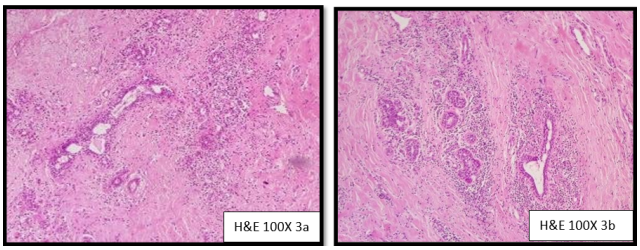

Figure 3: a and **b:** Breast parenchyma showing atypical ductal hyperplasia

density, presence of mass/ calcifications and mainly based on histopathological examination. But sometimes clinical and imaging findings are inconclusive and lesions are misdiagnosed as breast carcinoma. [1,3]

Diabetic Mastopathy is also known as lymphocytic mastitis, fibrotic mastopathy or sclerosing lymphocytic lobulitis. The main differential diagnosis for this benign lesion is carcinoma breast.

Clinical findings include hard, irreguar, easily movable, painless breast masses more often seen in subareolar region. This lesion present with single or multiple, unilateral or bilateral hardened mass and clinically or radiologically mimic a carcinoma. Mammographic features usually show a localised increased density in the glandular pattern, with no distinct calcification, mass or spicules.

Ultrasonogram shows irregular hyperechoic mass with intense posterior acoustic shadowing. Fine needle aspiration cytology yields usually less cellular material making diagnosis more difficult.

Ultrasound guided biopsy or surgical biopsy can result in a final or definitive diagnosis. [2,3]

The histomorphological features are dense, keloid type fibrosis containing little or no adiopose tissue with periductal lymphocytic infiltration, lymphocytic lobulitis, lobular atrophy and varying degrees of epitheloid fibroblasts. For the diagnosis of Diabetic mastopathy, should meet three conditions like 1: A long history of insulin- dependant Diabetes Mellitus, 2: painless, hard, irregular, poorly demarcated and mobile breast masses that are often unilateral or bilateral, 3: Fine needle aspiration indicating benign lesions. Fine needle aspiration yields

usually mild to moderately cellular smear with benign ductal epithelium and fragments of hyalinised fibrous tissue. Its difficult to get a cellular smear because of dense fibrous stroma. Because of the inadequate aspiration material, guided biopsy or surgical biopsy is preferred for the confirmative diagnosis. [3–5]

The pathogenesis of Diabetic mastopathy involves multifactorial etiologies, like secondary autoimmune reaction to abnormal extracellular matrix accumulation because of the effects of hyperglycemia on connective tissue. These matrix and advanced glycosylated end products acts as neoantigens which triggers a secondary autoimmune response with B-cell proliferation and autoantibody production. [3,6]

When a palpable breast lump is observed investigations like mammography, ultrasonography and also breast MRI can be considered an essential tool in the diagnostic and therapeutic management of Diabetic Mastopathy. But sometimes breast carcinoma may be hidden within dense fibrotic lesions in radiological examination. Histopathological examination by core biopsy is the key evaluation to rule out carcinoma of breast. [7–9]

4. Conclusion

Diabetic mastopathy is an uncommon fibroinflammatory benign lesion of breast seen among young and middle-aged women. Associated with type 1 diabetes mellitus and autoimmune diseases especially thyroid. These lesions can mimic carcinoma both clinically and radiologically. So breast carcinoma is the main differential diagnosis of diabetic mastopathy and histopathological examination is having paramount importance in differentiating from malignancy.

5. Source of Funding

None.

6. Conflict of Interest

None.

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