

## Lymphocytic Mastopathy: A Great Mimicry Of Carcinoma

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### Abstract

Three elderly ladies presented with clinical suspicion of breast cancer. Lumpectomy was performed in all 3 cases and histopathological examination came back as lymphocytic mastopathy. Only one of them had a classical long history of diabetes to suggest diabetic mastopathy. The other two cases was non-diabetic and not associated with autoimmune disease. Clinicopathologic and imaging revisited. The disease posed a diagnostic challenges and management dilemma.

**Keywords:** diabetic mastopathy, lymphocytic mastopathy, suspicious breast lesion, breast carcinoma

### Introduction

Diabetic mastopathy is a rare benign fibro-inflammatory disease typically found in premenopausal lady with type I diabetes mellitus and poor diabetic control. It is also found in a poorly controlled, long standing type II diabetic mellitus. Commonly it is associated with micro and macrovascular complications such as diabetic nephropathy or diabetic retinopathy. Other synonyms are sclerosing lymphocytic lobulitis or lymphocytic mastopathy. The clinical sign and features may mimic breast carcinoma and thus posed a diagnostic challenges to surgeons. Despite of its benign potential, the recurrence rate can be high especially in poorly controlled diabetes. Thus, a good review in this topic is important.

### Case Report

#### Patient 1

A 60 year-old lady presented with a hard and irregular left retroareolar breast lump for 6 weeks with no risk factor for malignancy. On Mammogram and Ultrasound axilla, it was reported as a BIRADS 4 breast lesion with no axillary lymphadenopathy. An ultrasound-guided biopsy showed benign fibro-collagenous tissue with mild chronic inflammation. Because of clinical suspicion of malignancy, it was proceeded with an excision biopsy and the histopathology report came back as lymphocytic mastopathy.

#### Patient 2

A 65 year-old lady presented with a 6 months history of a left breast lump. She had a long standing type II diabetes mellitus, hypertension and dyslipidemia since 2007. She was on both insulin and two oral hypoglycemic agents. The HbA1c range from 6.1 to 9%. Despite that, she developed diabetic retinopathy since 2016. She had a strong family history of diabetes. Otherwise, she has no risk factor for malignancy.

Mammogram showed an irregular dense mass occupying the left upper mid to outer quadrant with architectural distortion. No suspicious group of microcalcification. On

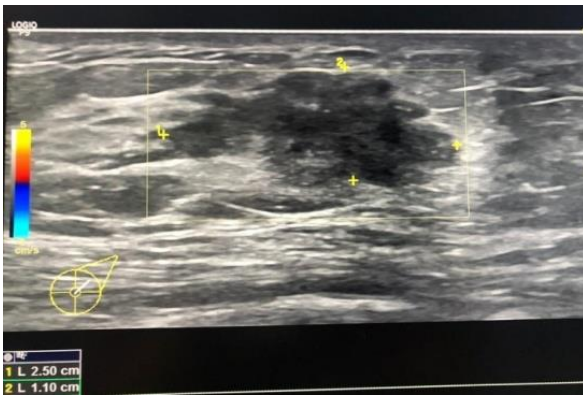
ultrasound, it was an irregular hypoechoic mass with posterior shadowing measuring 3.6 x 2.0 x 4.7cm. Minimal peripheral vascularity seen with adjacent architectural distortion. Left axillary nodes was classified as suspicious because of thick cortex measuring 0.4cm. Ultrasound guided biopsy reported as lymphocytic mastopathy. But in view of discordant finding and need to rule out malignancy in this lady, excision biopsy done. Histopathology report came back as diabetic mastopathy.

#### Patient 3

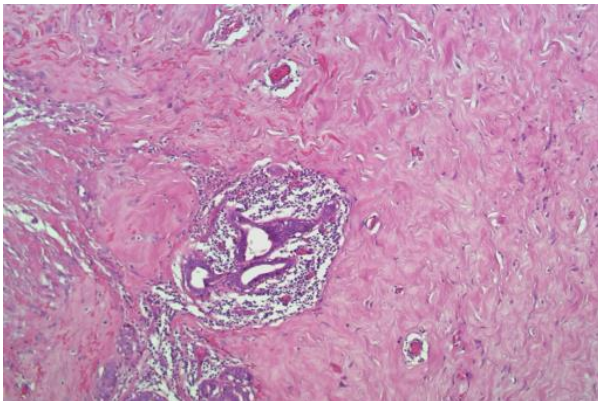
A 51 years old lady presented with painful right breast lump for 2 weeks with no history of trauma and no risk factor for malignancy. Mammogram showed no obvious abnormal density or calcification. Ultrasound showed ill-defined lesion at 10 o'clock 5cm from nipple measuring 0.9 x 2.1 x 2.7cm. No abnormal looking axillary nodes seen. Guided core biopsy came back as inflammatory tissue. Excision biopsy performed and histology report was lymphocytic mastopathy.



Figure 1: Mammogram imaging of patient 1 showing irregular density at upper half of left breast.



**Figure 2: USG feature showed irregular hypoechoic mass with posterior shadowing. (Patient 1)**



**Figure 3: Lymphocytic mastitis characterized by keloid-like fibrosis and prominent lymphocytic (refer Patient 1)**

## Discussion

Lymphocytic mastopathy was first described as diabetic mastopathy, as early as 1984 by Soler and Khardori. It was described as a dense fibrous stromal proliferation of the breast in women typically in premenopausal lady with longstanding type I diabetes mellitus (DM)<sup>1</sup>. It represent less than 1% of all benign breast disease. It also can occur in poor diabetic control in type II diabetes mellitus. Diabetic microvascular end organ complication is commonly associated. It mostly affects women, but has also been reported in men.<sup>2,3</sup> Only a small percentage been reported in non-diabetic patient (0.13%) and some co-exist with autoimmune disease (0.02%) e.g Hashimoto's thyroiditis, Grave's disease, pernicious anemia, rheumatoid arthritis.<sup>2,5</sup> The term 'diabetic mastopathy' is referred to those with underlying diabetes mellitus. Collectively, it is known as lymphocytic mastopathy in patients without diabetes, thus probably explained the possibility of autoimmune component in its pathology. They also observed a possible link with thyroiditis and autoimmune disease.<sup>5,8</sup> The exact etiopathogenesis is unknown. The postulation theory behind this basically the advanced glycosylated end products formed in long standing hyperglycemia state act as neoantigen and trigger an autoimmune response with B cell proliferation, autoantibody production, the cytokine release that lead to matrix expansion and stromal proliferation.<sup>7,8</sup>

All of our patients are postmenopausal lady, age more than 50 years old. Only the second patient had strong risk factor which are the long standing history type II diabetes mellitus and diabetic retinopathy with poor glycemic

control as evidence of her HbA1c persistently more than 6%. The other two patients have no association with diabetic or autoimmune disease. One case have been reported with vitiligo with no other sign to suggest autoimmune disease which is slightly similar to our two patients.<sup>9</sup> Any female, age more than 50 years old presented with hard, palpable breast lump with radiological suspicion of malignancy (Biraz's 5), thus breast carcinoma need to be considered. On mammogram, lymphocytic mastopathy may appear as an ill-defined mass or asymmetric density without associated calcifications or spiculations very often found in a dense breast<sup>4,4,5</sup>

On ultrasonography, lymphocytic mastopathy classically appears as an irregular, poorly defined hypoechoic mass usually between 2 and 6 cm in size, with moderate to marked posterior shadowing and absence of vascularity on colour Doppler imaging.<sup>4,5</sup> For all 3 patients, only second patient's ultrasound guided core biopsy showed lymphocytic mastitis. The first patient's core biopsy only showed benign fibrous tissue while the third patient was suggestive of an inflammatory tissue. False negative rate for cytology is 3-5%.<sup>2</sup> Core biopsy is essential for diagnosis to demonstrate the dense fibrosis and perivascular lymphocyte infiltrate.<sup>5,7</sup> However, in reality usually it is a postoperative diagnosis. Thus, the confirmatory diagnosis is through histopathological examination needed to differentiate diabetic mastopathy and malignancy.<sup>7</sup>

The histopathological diagnosis of lymphocytic mastitis is well documented. The pathologic constellation are (1) lymphocytic lobulitis and ductitis, (2) glandular atrophy, (3) lymphocytic/mononuclear perivascular inflammation (4) dense often keloid-like fibrosis, and (5) epithelioid-like fibroblasts.<sup>2,3</sup> In diabetes mastopathy, the perivascular/perilobular inflammation is more predominant of B cell but in lymphocytic mastitis, it is predominantly T cell.<sup>2,3</sup> Other than that, in diabetic mastopathy it has more pronounced stromal fibrosis, lobular atrophy and epithelioid myofibroblast.<sup>2</sup>

To date, diabetic mastopathy is a rare, self-limiting fibro-inflammatory breast disease as a benign entity with no malignant potential.<sup>2,3,6</sup> On review, the recurrence rate after surgery is quite high, about 32% especially in type I diabetes mellitus.<sup>3</sup> Possible explanation of recurrence usually the surrounding tissue fibrosis in previous area can trigger an autoimmune response as acute in chronic inflammation based on the etiopathogenesis theory discussed earlier<sup>7,8</sup>. There is also a possibility of a new lesion at the contralateral of different quadrant of breast. A 10 year retrospective study on diabetic mastopathy in type I diabetes mellitus have proved that the clinical and imaging findings are inconclusive and these lesions are often misdiagnosed as breast carcinomas.<sup>10</sup> More studies need to be done to understand more of its etiopathogenesis in the emerging trend of higher prevalence and incidence of diabetes mellitus in Malaysia.

## Summary

Lymphocytic mastopathy is a diagnostic challenges and a masquerade of malignancy. Thus, the recognition of rare

benign disease is crucial to prevent unnecessary surgical intervention.

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