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LUPUS MASTITIS MIMICKING BILATERAL INFLAMMATORY BREAST CARCINOMA

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ABSTRACT
Systemic lupus erythematosus (SLE) is one of the most common autoimmune disorders, with clinical manifestations ranging from dermal-epidermal layer involvement to systemic disease. Lupus mastitis is a rare clinical presentation of SLE detectable on clinical examination but poorly characterized on mammography. We describe a female patient from a Brazilian oncology referral center diagnosed with breast panniculitis and SLE-related breast node enlargement mimicking inflammatory breast carcinoma.

KEY WORDS: Mastitis. Lupus. Breast. Inflammatory breast carcinoma.

INTRODUCTION

Systemic lupus erythematosus (SLE) is characterized by inflammatory foci in organs and other body tissues, especially the joints, serous membranes, glomerules, and skin.[1] Patients with SLE usually experience periods of flares and remissions. Lupus mastitis (LM), a rare clinical presentation of panniculitis involving the deep subcutaneous adipose tissue of the breast, is observed in 2-3% of cases.[2]

LM may be suspected based on the presence of breast nodules in SLE patients. On mammography, a breast mass can easily be mistaken for carcinoma, especially of the inflammatory type. The occurrence of microcalcifications in the dermal layer and lobular septa is not restricted to SLE patients, but may also occur in association with other forms of collagenosis, such as dermatomyositis, polymyositis and Sjögren's syndrome.[3]

CASE REPORT

A 53-year old female patient was referred to the Ceará Cancer Institute (ICC) with suspicion of bilateral inflammatory breast carcinoma. Upon the first appointment, the patient described the development of nodules in both breasts and armpits, followed by edema, reddening and increase in breast volume. The patient had been treated for SLE 5 years earlier, but had since been considered in remission, with no need for therapy. The clinical history also featured two reduction mammoplasties, including the excision of breast nodules identified as fibroadenoma on histology.

The clinical evaluation revealed breast hypertrophy, edema and hyperemia affecting the skin of both beasts completely and exclusively. Upon palpation, a 5-cm and irregular nodule was found between the upper quadrants of the left breast. A 4 cm nodule was found in the retroareolar region of the right breast. Having confirmed the diagnosis of SLE by lab tests, the patient was referred to the rheumatology outpatient service for SLE treatment. Resumption of SLE therapy led to the complete regression of the cutaneous inflammation and partial reduction of the nodules (**Figure 1**).

Ultrasound scanning (US) revealed a highly heterogeneous and hypoechogenic echotexture, also multiple nodules of similar echographic appearance diffusely scattered in both breasts. A US-guided core biopsy of the nodules was performed. The histological analysis showed columnar cell changes and stromal fibrosis, but no signs of malignancy (**Figure 2**). The

patient was subsequently submitted to another reduction mammoplasty, with excision of the largest nodules (**Figure 3**).

The histological sections showed neoplastic proliferation of the connective tissue involving mammary ducts and lobules of different forms and sizes separated by collagenized connective tissue (intracanalicular breast fibroadenoma). Two years after surgery, the patient remained asymptomatic. Upon physical examination, the skin in the breast region was normal and the breast volume was preserved (**Figure 4**). Remaind showing some axilares nodules with the same features and the breast skin appeared normal, the exception of the mammoplasty scar, dense consistency. No substantial changes were observed in the mammographic and US images. The blood tests indicated
no disease activity.

DISCUSSION

Lupus Mastitis mimics breast carcinoma both clinically and radiographically.[4] The spectrum of clinical presentation ranges from skin rash, lipoatrophy and breast hypertrophy to parenchymal nodules,[5] requiring special attention during the differential diagnosis. Affecting predominantly women (male/female ratio 1:7),[6] LM is on average diagnosed at 40 years of age (range: 18-70).[7] Clinical and image findings are highly variable in LM. Mammography is important when LM patients present fat necrosis with calcifications mimicking localized ductal carcinoma.[8,9] Due to exacerbated breast hypertrophy and nodular hyperplasia, our patient required three mammoplasties.

The differential diagnosis of LM should include lactational mastitis, ductal ectasia, granulomatous mastitis, fat necrosis, diabetic mastopathy and breast cancer.[10] There is no pathognomonic finding for LM in breast images. Mammography may show calcifications, areas of asymmetric density and irregular and dense breast tissue. On US, thickening of the subcutaneous tissue, calcifications, solid masses, moderate vascularization and multiple cysts may be visualized.[6] Thus, our patient displayed a predominance of well-defined hypoechogenic bosselated nodules extending to the armpits. LM keep on having the mechanisms involved not fully understood. The anatomopathological findings of LM, as described in this report, are similar to those of panniculitis and fat necrosis.

The result of the anatomopathological study is decisive to confirm the diagnosis of LM in view of the low accuracy of currently available breast imaging technologies, such as mammography, US and Magnetic Resonance Imaging. Due to the absence of clinical epidermal findings, the histopathological diagnosis of LM is established by US-guided needle biopsy of a fragment.[4]

Findings include histology suggestive of chronic adipose tissue inflammation associated with areas of fat necrosis, lymphocytic infiltration, lobular panniculitis, microcalcifications, lymphocytic vasculitis, and even hyalinization of the dermal substrate and lobular septa. In addition to the findings described in the literature, our patient presented cyst formation, fibrosis and lobular atrophy.

The present case report highlights the importance of including this rare clinical manifestation mimicking breast cancer in the differential diagnosis of SLE, and the importance of using a minimally invasive technique when sampling tissue for histology. However, if SLE activity is detected, surgical interventions should be postponed until proper therapy can be instituted and LM has gone into remission.

FIGURE

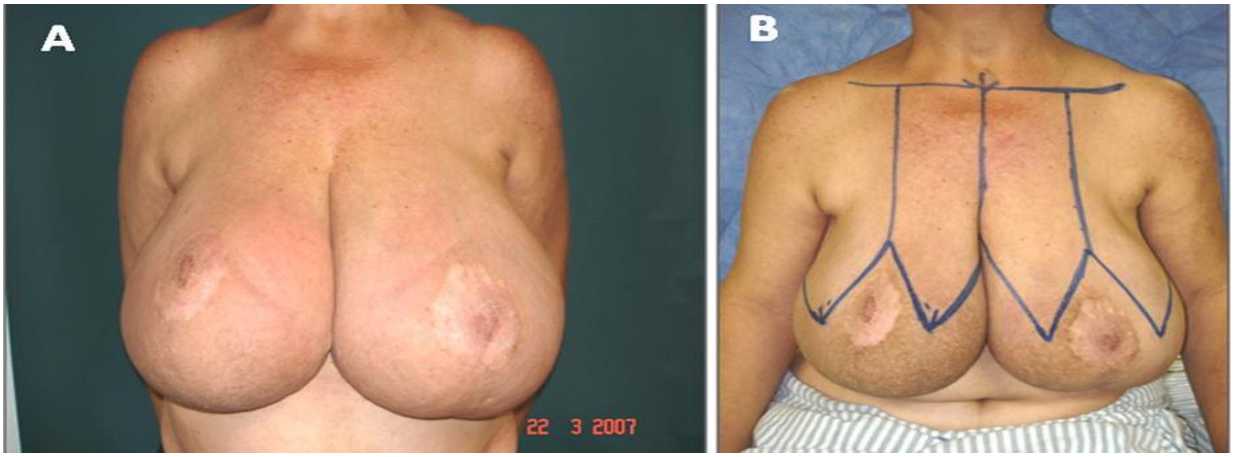

Figure 1: Appearance of breasts after resumption of SLE therapy. *A:* Note breast hypertrophy despite two reduction mammoplasties. *B:* Immediate preoperative marking.

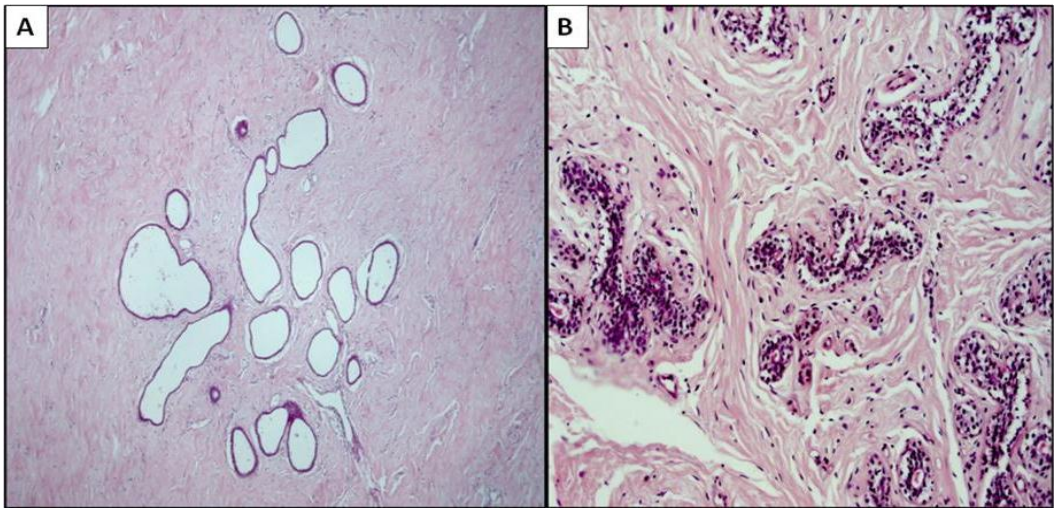

Figure 2: Histopahtological analysis. A: Hyalinized stromal fibrosis and cystification of ducts (H&E; magnification: 100x). B: Lobular atrophy with periductal and perilobular hyalinization foci (H&E; magnification 400x).

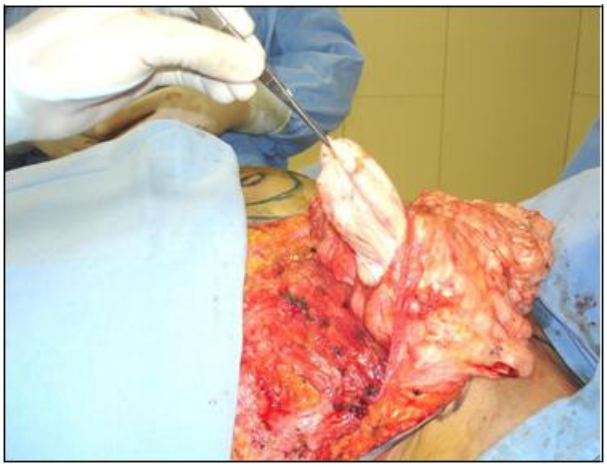

Figure 3: Intraoperative view. Note excision of large nodule.

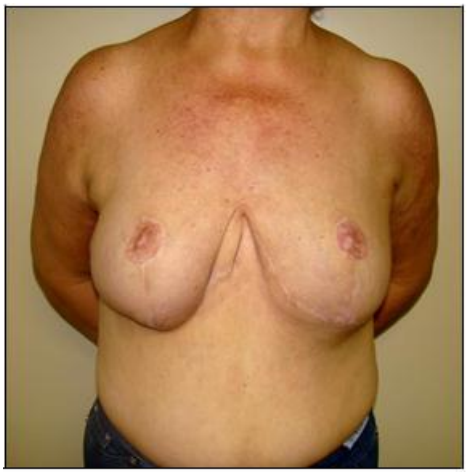

Figure 4: Late postoperative view of patient, with no signs of lupus mastitis.

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