

## Anatomopathological Diagnosis of Granulomatous Mastitis by *Histoplasma Capsulatum*: Case Report

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### ABSTRACT

The goal of this case report is to describe the clinical, ultrasound, mammographic and histological features of fungal granulomatous mastitis caused by *Histoplasma capsulatum*. The importance of the subject lies in the fact that this entity can mimic neoplasia and, therefore, the differential diagnosis must be established, thus importance of the pathological examination and the research of the etiologic agent through special staining.

**Keywords:** Fungal granulomatous mastitis, Chronic idiopathic granulomatous mastitis, Chronic obstructive pulmonary disease, Mammography, Anatomopathological examination

### INTRODUCTION

We present a case of granulomatous mastitis by *Histoplasma capsulatum*, whose clinical, radiological and ultrasonographic manifestations are similar to those of breast cancer. The lesion was removed and treated with antifungal. The objective, from the histopathological and clinical perspective is to establish the diagnostic parameters and discuss differential diagnoses.

### CASE REPORT

A 33 years old Caucasian Female patient, presented, with breast enlargement with a nodular mass associated with HIV negative serology and family history of breast cancer.

She was referred to the hospital in 2015 for evaluation of a complex, hypoechogenic nodule located at the junction of the upper quadrants within the left breast, 8 mm on the largest axis, BIRADS 3. The lesion evolved in 6 months, echocardiographically, for three hypoechogenic and asymmetric nodules, 8.1 mm to 13.6 mm, whose aspiration puncture was inconclusive. After 9 months of the initial presentation, the ultrasound revealed hypoechogenic, nodular images in the union of the superior quadrants of 22 mm. A similar nodule, BIRADS 4a, measuring 13.0 mm was found on mammography in the left medial-left quadrant.

The patient was submitted to a left sectorectomy with needles, on 02/16/2017. The piece weighed 13.3 g and measured 5.0 × 3.4 × 2.3 cm. In the cuts, it had a well

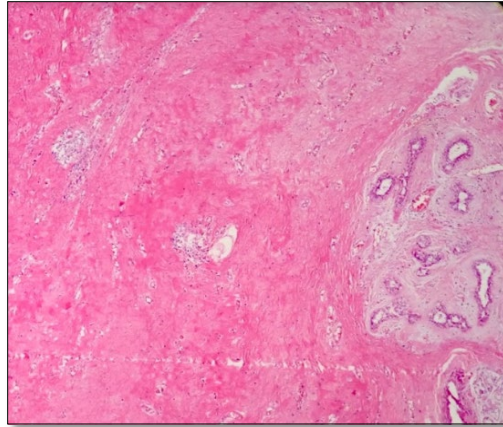
delimited nodule, cystic, with thickened walls and yellowish and pasty contents. Another lesion of the same characteristics was identified, measuring 0.5 × 0.5 × 0.4 cm both in a retroareolar region.

Under microscopy vision, there is a mixed inflammatory infiltrate (mononuclear and polymorphonuclear), rich in histiocytes, with granulomas, microabscesses and central necrosis compatible with chronic granulomatous mastitis with caseous necrosis (**Figures 1-3**).

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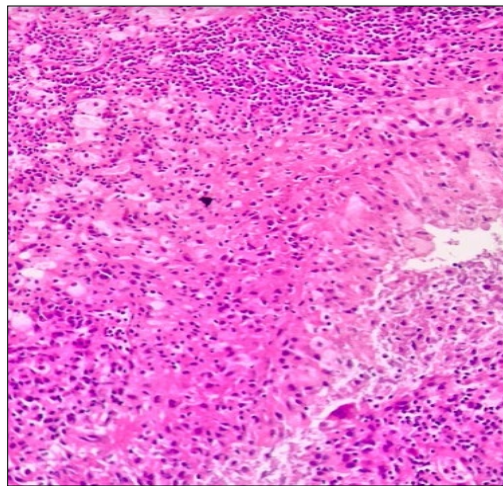
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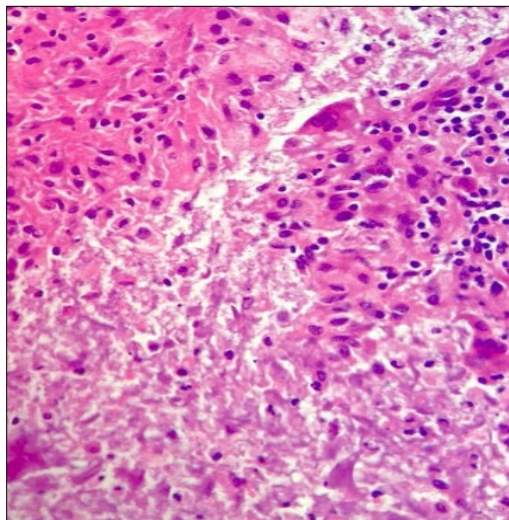
**Figure 1.** Breast lobule with cell inflammatory.

*Increase of 10x*



**Figure 2.** Chronic granulomatous inflammation with central necrosis.

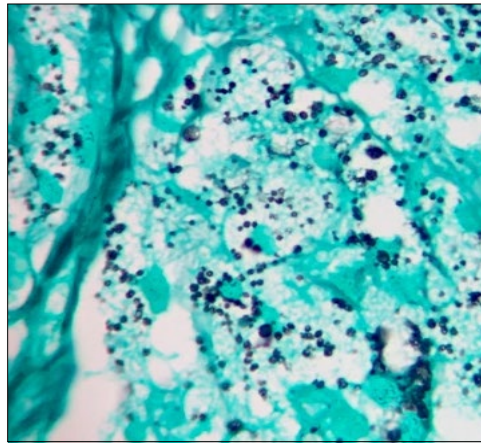
*Increase of 20x. Left Breast*



**Figure 3.** Presence of mononuclear inflammatory cells, epithelioid cells, multinucleated giant cells and central necrosis. *Left breast. 40x magnification*

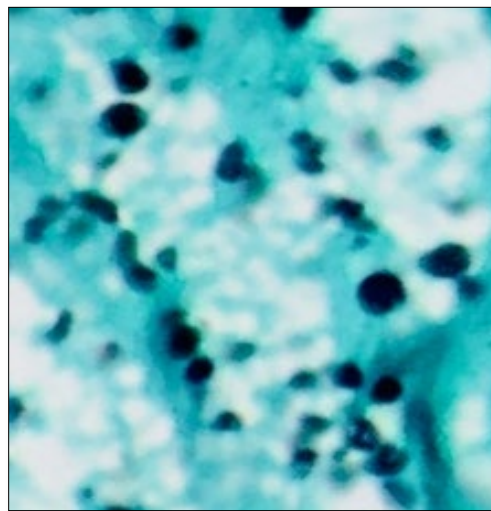
The fungus research by Grocott-Gomori showed fungal structures constituted by spores, compatible with infection

by *Histoplasma capsulatum*. The search for BAAR was negative (Figures 4 and 5).



**Figure 4.** Presence of fungal structures, consisting of spores, compatible with histoplasmosis.

Left breast. Increase of 40x. Grocott coloration



**Figure 5.** Presence of spores (*Histoplasma capsulatum*).

Left breast. Increase of 100x. Grocott coloration

## DISCUSSION

Granulomatous mastitis is a rare disease, described in 1972, presenting two forms: idiopathic and secondary.

Idiopathic mastitis presents a strong etiopathogenic relationship with pregnancy and lactation. It is associated with the use of oral contraceptives, alpha 1-antitrypsin deficiency and hyperprolactinemia associated with phenothiazine or metoclopramide. The diagnosis of idiopathic granulomatous mastitis is one of exclusion.

Chronic granulomatous secondary mastitis can be caused by tuberculosis, sarcoidosis, Wegener's granulomatosis, syphilis, corynebacterium, foreign body, vasculitis, cat-scratch disease (CSD), diabetes mellitus, sarcoidosis, fungal and parasitic infections [1]. The appearance of necrotizing granulomatosis is suggestive of infections. The possibility of

an autoimmune phenomenon should be considered. However, immunological markers are usually unchanged.

The presentation of granulomatous mastitis is of fixed mass, with induration, ulceration, inflammation, pain, galactorrhea, abscesses, fistulas and nipple retraction. The findings may cause confusion with the diagnosis of carcinoma. It affects women between 30-50 years [2,3].

On mammography, the findings range from normal to small, poorly delimited nodules. There is an asymmetric density, thickening and distortion of the underlying skin, without microcalcifications, which is difficult to differentiate from carcinoma [4].

On ultrasonography, the findings may also vary and the presence of tubular, heterogeneous, often confluent images is described.

Macroscopy shows a firm and whitish lesion with central necrosis and microscopy, necrotizing granuloma with lobular inflammation and histiocytes containing positive intracellular fungi in Grocott-Gomori and PAS [5]. PAS staining is usually negative in cases of histoplasmosis.

The diagnosis of mastitis by histoplasma is done by cytology, histopathology, culture or serology. In fine needle puncture, it can be difficult to distinguish histiocytic cells from neoplastic cells. The culture for fungi is generally negative in these cases.

Differential diagnoses include: Mycobacterium tuberculosis, sarcoidosis, Wegener granulomatous, autoimmune disease, cat scratching disease and granulomatous idiopathic mastitis.

Treatment of *H. capsulatum* includes complete excision of the lesion, followed by antibiotic therapy with amphotericin B [5].

## CONCLUSION

Mycotic granulomatous mastitis is rare and should be considered in the differential diagnosis of mammary carcinoma.

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