

## **Granulomatous Mastitis: A Descriptive Study of 08 Cases Observed in the Department of Gynecology - Obstetrics II of the HASSAN II Teaching Hospital of Fez**

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### **Abstract**

**Introduction:** Granulomatous mastitis (GM) is a chronic benign inflammatory disease of the breast that can mimic breast cancer. The goal of this study was to describe the clinical and radiological aspects of granulomatous mastitis in order to improve their management in our department.

**Methodology:** This was a prospective, descriptive study of 08 cases of granulomatous mastitis managed in the department of gynecology and obstetrics 2 of the HASSAN II hospital in Fez.

**Result:** The average age of patients was 40.63 years with extremes of 26 to 70 years. The main reason for consultation was the management of a breast nodule (3 of 8 cases). Clinically, fistulization with pus discharge was found in 4 cases. Opacities with irregular limits and density asymmetry were the main abnormalities found at mammography (5/8 cases). Breast ultrasound described heterogeneous hypo-echogenic ranges with multiple collections in six patients.

The diagnosis was based on histology. Management was surgical and medical in half of cases, medical in 3 of cases. The etiological research was negative in the majority of cases. The evolution was marked by a complete remission of symptomatology after 02 months in 7 cases from the sample.

**Conclusion:** Granulomatous mastitis is a rare entity. Its symptomatology is not specific. The diagnosis is histological. The prognosis is often favorable with complete remission of symptomatology. In some cases, symptomatology can persist despite well-conducted medical treatment. Surgery could be needed.

**Keywords:** *Granulomatous Mastitis; Diagnosis; Management*

### **Introduction**

Granulomatous mastitis (GM) is a chronic benign inflammatory breast disease that can mimic breast cancer [1]. It is an inflammation of the breast of unknown origin that must be distinguished from tumors and breast infections, including tuberculosis [2]. Its symptomatology is nonspecific and the diagnosis is often not obvious. It is an entity not well known to clinicians and radiologists [3]. The goal of this study was to describe the clinical and radiological aspects of granulomatous mastitis in order to improve their management in our department.

## Methodology

This is a prospective, descriptive study over 22 months from January 2019 to October 2020 carried out in the department of gynecology and obstetrics 2 of the HASSAN II teaching hospital of Fez. In this study, we included patients who consulted for a breast condition whose histological diagnosis was in favor of granulomatous mastitis. Granulomatous mastitis was defined histologically by the presence within tissue fragments taken from regular ducto-lobular structures with palisade tissue dissociated by epithelioid and giantocellular granulomas centered or not by suppurative necrosis without tumor proliferation. Epidemiological, clinical, imagery, therapeutic and evolutionary data were collected from all of our patients.

## Results

During the study period, we managed 08 cases of granulomatous mastitis. The average age of patients was 40.63 years with the extremes of 26 to 70 years. No patient had a specific history. The main reason for consultation was the management of a breast nodule in 3/8 cases, followed by the management of an inflammatory breast in 2 cases. The flow, abscess and mastodynia each accounted for 12.5% of cases. The onset of symptomatology was more than 6 months ago in 5 of our patients. Patients in periods of genital activity were the most numerous (5/8), followed by menopausal patients (2/8) and patients in perimenopause (1/8). Among the 08 patients of our serie, two were breastfeeding. Breast involvement was unilateral in the majority of cases 7 versus bilateral in 1 patient.

Clinically, fistulization with pus discharge was found in half of cases, breast hardening in ¼ of cases with skin modification. All the patients had homolateral axillary adenopathy. On mammography, well-limited opacities were present in three patients, irregular opacities with density asymmetry in 5 patients. Breast ultrasound described heterogeneous hypo-echogenic areas with multiple collections in 6 patients and heterogeneous hypo-echogenic areas with skin thickening in 2 other patients. Serous sampling in the 6 patients with multiple collections on ultrasound returned sterile with no specific germs.

All the patients performed biopsy that results initially came in favor of granulomatous mastitis without caseous necrosis in 6 of our cases, fibrous mastopathy in one case and a significantly normal breast parenchyma in one other case.

The Management was medical and surgical in 4 cases, medical in 3 cases, one patient received no treatment. Medical treatment was based on oral corticotherapy (prednisone 20mg) for 6 weeks in some cases and 10 weeks in other cases and antibiotic based on clavulanic amoxicillin 1g/8 h for 21 days and metronidazole 500mg per 8 hours for 14 days. The dose of the corticosteroid was 1mg/kg/day with progressive degression.

Surgical treatment was made of a lumpectomy in two patients, a lumpectomy with abscess drainage in two other patients and a simple abscess drainage in one patient. The diagnosis of granulomatous mastitis was made in two patients after surgery.

The etiological assessment did not find any etiology in the majority of patients (7/8), tuberculosis was found in one patient. This etiological assessment consisted of serologies (HIV, hepatitis B, C and syphilis), BK research, research of anticytoplasm antibodies in the polynuclear neutrophils (ANCA), C3 and C4 supplements, evaluation of kidney function (urea, creatine and proteinuria) and blood glucose assessment.

The evolution was marked by a complete remission of symptomatology after 02 months in 6 cases, and a persistence of symptomatology for more than 3 months in 2 cases before the complete remission after 5 months.

## Discussion

Granulomatous mastitis (GM) is a very rare disease among breast diseases managed in our department. Idiopathic granulomatous mastitis (IGM) is a benign chronic inflammatory condition of the breast of unknown etiology and characterized by the presence of non-

caseous granulomas with micro-abscess formation confined to the breast lobule [4]. It is more common in women of childbearing age [5]. Most of our patients were in childbearing period without any particular disease record. The mean age of onset in our serie was 40,63 years, with extremes ranging from 26 to 70 years old. It mainly affects women during periods of genital activity but can affect women in post-menopausal period [6].

MGI is often unilateral, but a few cases of bilateral involvement have been reported [7,8]. We recorded one case of bilateral involvement. The most common presentation is a breast mass, either as a lump or abscess. The lump may involve the overlying skin or penetrate the underlying pectoralis muscle with nipple retraction, axillary lymphadenopathy and sinus formation, clinically mimicking inflammatory breast carcinoma. It is commonly unilateral [9]. In our study, breast mass represented 1/3 of the clinical presentation followed by the modification of breast skin as inflammatory breast in ¼ of cases and the clinical exam found axillary lymphadenopathy in all the patient. GM mastitis remains not well known in our context. Which lead to the delay of diagnosis. As we can notice most of our patients came to us more than 6 months after the onset of the symptoms. During the period between the onset and the consultation in our health care center, they passed in the hands of several medical doctor who treated them as breast abscess without success. On imaging, it is likely to be that there is no specific signs. Neither mammography nor ultrasound nor the MRI could give proper idea for the diagnosis of IGM [3] although it can mimic breast cancer. There is no pathognomonic sign for GM on US, mammography, and MRI [10]. Irregular tubular hypoechoic lesions, lobulated hypoechoic masses, parenchymal irregularities without a mass, fistulization to skin or axillary lymphadenopathies, could be recognized on US. Typically, US examination demonstrates a solid mass, often with one or more abscesses. According to Yildiz S and al [11] multiple irregular hypoechoic masses and collections with tubular connections with fingerlike aspects and skin fistulae in patients with breastfeeding history, suggests IGM rather than carcinoma. In our study, the most frequent finding on mammography were irregular opacities with density asymmetry, Breast ultrasound described heterogeneous hypo-echogenic ranges with multiple collections, and heterogeneous hypo-echogenic ranges with skin thickening. In a study made by Bouteffal H and al [12], the mammography showed poorly limited opacities in 65% of their cases and the breast ultrasound found 50% of circumscribed images hypoechoic homogeneous and 50% hypoechoic heterogeneous images. The imagery finding is different from one study to another and has not been subject of large consensus probably due to the size of samples in different series.

Despite the contributions of imaging in the diagnostic orientation, certainty remains histological by the pathological examination of the biopsy fragments or the tissues of surgical excision. The histological diagnosis requires a good experience from the pathologist. The disease is characterized by the formation of a non-necrotizing granuloma in combination with a localized infiltrate of multi-nucleated giant cells, epithelioid histiocytes, lymphocytes, and plasma cells. Sometimes, organized sterile micro-abscesses occur with neutrophilic infiltrates. Inflammation that extends into adjacent lobules can indicate a higher severity. The involved parenchyma mostly shows loss of acinar structures and damaged ducts [13,14].

In our study, we defined GM by the presence within tissue fragments taken of regular ducto-lobular structures with pallial tissue dissociated by epithelioid and giantocellular granulomas centered or not by suppurative necrosis without tumor proliferation.

The differential diagnosis of MGI arises clinically with carcinomatous mastitis and mastitis, infectious or not (lipophagic granuloma, cytosteatonecrosis, sarcoidosis, Wegener's disease, etc.). Histological examination helps to differentiate these pathologies [8].

The treatment of idiopathic granulomatous mastitis is still controversial, probably due to its low incidence and lack of understanding its pathophysiology and its prevalence in impoverished patients. Treatment approaches include observation, oral antibiotics, oral corticosteroids, limited or wide surgical excision, and mastectomies [15,16]. The treatment-using mastectomy should be avoided as much as possible because GM is not a cancer and neither a disease with the possibility of metastasis.

The goal of this study was to improve the management of granulomatous mastitis in our department by describing its clinical and radiological aspects. Despite the results out of this study, the small size of our sample might be a limit. it could not allow us to retain strong clinical and radiological criteria for the diagnosis of GM.

## Conclusion

GM is a rare entity not well known by clinician. Its symptomatology is not specific. The clinical context, the diversity of the imaging appearance and essentially the histological examination, make the diagnosis and adapt the treatment, thus avoiding mutilating surgery. The prognosis is often favorable with complete remission of symptomatology. In some cases, symptomatology can persist despite well-conducted medical treatment. Surgery might also be needed. Most of the time the etiology is unknown. More study should be done in a large sample to identify specific clinical and imagery finding which might lead to the improvement of its management.

## Conflicts of Interest

There are no any conflicts of interest between the authors of this present manuscript.

## Contributions of the Authors

All the authors participated to the present study.

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