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Research Article

Clinical profile of granulomatous mastitis at a tertiary care Hospital Kashmir

Refut Arah Banoo[1], Altaf Hussain Kambay [2], Awhad Mueed Yousuf[3]

[1]*Assistant professor, Department of Surgery, Government Medical College Srinagar*
[2]*Associate professor, Department of paediatric Haematology, Government Medical College Srinagar*
[3]*Senior Resident, Department of Surgery, Government Medical College Srinagar*
Corresponding Author: Dr. Altaf Hussain Kambay

ABSTRACT

Background: Chronic granulomatous mastitis (CGM) is a rare benign inflammatory breast entity characterized by lobulo-centric granulomas. The nonspecific manifestations and varied demographic features of this condition, as well as similarities in presentation with other breast conditions, pose substantial diagnostic and treatment challenges (1). **Aim:** the study was aimed to evaluate different clinical presentations and treatment approaches for granulomatous mastitis in resource limited setting. **Material and Methods:** This is a retrospective observational study of 28 patients in the department of surgery at a tertiary care hospital, Government Medical college Srinagar, Jammu and Kashmir. Results were noted and found to be, mostly, in consensus with other International Studies with some subtle differences specific to Indian population. CGM was observed to be present most commonly in parous women of reproductive age group with a lump, followed by abscess and formation of discharging sinuses. Close surveillance with a minimally required surgical procedure might be the first-line treatment of Granulomatous Mastitis. **Conclusion:** GM is a rare benign breast disease that is difficult to distinguish from other inflammatory breast diseases or cancer. The side effects of corticosteroid treatment may be challenging and observation or drainage without corticosteroids remain the treatment modality of choice for GM.

INTRODUCTION

This study focuses on granulomatous mastitis (GM), a rare inflammatory condition of the breast that has been increasingly diagnosed over the recent years. It is a rare differential diagnosis with an estimated incidence of 2.4 per 100,000 women and 0.37% in the United States [2]**.** This research attempts to understand the incidence and prevalence of GM and its treatment modalities. the diagnosis and treatment of a patient with this disease is a challenge for the clinician as well as for the patient who often has to suffer a protracted disease course with a significant impact on quality of life. CGM frequently affects parous premenopausal women with a history of lactation. The most common clinical sign is a palpable tender mass. However, the nonspecific manifestations and similarities in presentation with other breast conditions, pose substantial diagnostic and treatment challenges. Definitive diagnosis of CGM is especially important as it can mimic Carcinoma breast as well as Tuberculosis of breast; both conditions a very serious and common health concern in India.

MATERIAL & Methods:

This is a retrospective study over 5 years (January 2021 to December 2025). The incidence and prevalence of GM by age, and lactation were analysed. All other possible causes of granuloma formation were excluded. The most common treatments for GM (antibiotics, steroids, incision and drainage and breast excision were analysed.

RESULTS :

28 patients of granulomatous mastitis were studied during this period. Age distribution is shown in the table below

Age	number
25-29 years	3
30-34 Years	13
35-39	7
40- 44	5
Total	**28**

Table: *Age Distribution of granulomatous mastitis.*

Majority of the patients were of the age 30 to 45 years. Four patients were sent by paediatrician because of lactational failure. All of the patients had unilateral lesion. Palpable lump was the most common complaint (26/28) followed by pain 23/28 patients. Discharge from wound in 15 patients, fever in 4 patients, generalized symptoms in the form of malaise and decreased appetite in 4 patients. Previous treatment of antibiotic failure was seen in 14 patients. There was history of incision and drainage done in 2 patients but both had continued with draining pus.

Ultrasonography (USG) was performed for all of the patients. USG showed an irregular hypoechoic and heterogeneous masses in all cases, and abscess formation in 10 cases. 6 patients were examined with mammography which showed ill-defined mass in all patients. Breast magnetic resonance imaging (MRI) was performed in 7 patients. MRI showed a heterogeneous enhanced area with an irregular border in all of the patients. Because most of the clinical and radiologic findings were nonspecific, exclusion of malignancy was not simple. USG was used for evaluation of the depth of abscess and also for evaluation of resolution as previously recommended. Resolution was determined with disappearance of hypoechoic lesion. Microscopically, all of the patients showed noncaseating granuloma formation with variable numbers of Langhans-type multinucleated giant cells, neutrophil polymorphs, and lymphocytes around the breast lobules. Microabscess formation were also observed. Specific stains for microorganisms (Gram), tuberculosis (Ziehl-Neelsen), and fungal infections were negative. Microbiologic cultures of aspiration samples were also sent.

Seven patients had Small (<5 cm), unilateral lesions in early-stage disease**.** They were managed with close observation only and spontaneous resolution occurred in all within 12–20 months as shown in table below. Oral Corticosteroids (Prednisolone) were given in 10 patients for 3 weeks. Among these 6 has complete resolution and 4 developed abscesses over period of time. A total of 15 patients developed abscesses during the clinical course, and abscess drainage was done in all patients. the abscesses penetrated the retromammary space in 6 patients. We treated 4 of these 6 patients with multidirectional deep drainage and obtained complete remission in each in 6 months. These times were much shorter than those in the other 2 patients. Overall outcome by drainage was comparable with that of corticosteroid treatment reported in the literature.

Trial of prolonged antibiotics (clarithromycin) was given in four patients without abscess after aspiration and cytological studies, although cultures were found to be sterile. These patients later on developed pus and were shifted to other modalities of treatment. 2 patients were taken for wide local excision and one patient needed mastectomy in view of failure of other modalities of treatment.

Because the natural history of GM is thought to be self-limiting, close observation and minimally required drainage of abscesses without corticosteroid administration remain the treatment modality of choice.

Treatment	Number of patients	Outcome *(Resolution)*
Wait & watch	7	7
Corticosteroids:	10	6
Abscess drainage	15	8
Antibiotics	4	NIL
Excisional	2	2
mastectomy	1	1

Table: *Management of patients with granulomatous mastitis*

DISCUSSION:

GM is considered as a rare, chronic, nonspecific, granulomatous process with unknown aetiology, affecting the breast in relatively young, parous women. It usually presents with a tender, firm lump with a lobular distribution, and frequently associated with inflammation of the overlying skin. GM was first described as a distinct clinical entity by Kessler and Wolloch in 1972. Recently, the term, mammary *duct–associated inflammatory disease sequence* has been introduced. The mammary duct–associated inflammatory disease sequence concept is that all of these disorders result from obstruction, distention, inflammation, and rupture of the lactiferous ducts. According to the concept of mammary duct–associated inflammatory disease sequence, certain conditions, such as pregnancy, breast-feeding, and drug-induced hyperprolactinemia or galactorrhoea, might be associated with an increased risk of GM. Drug history of levosulpride intake was present in two patients in our study. Levosulpride can induce and may cause breast swelling and/or galactorrhoea, predisposing to granulomatous mastitis (3). Findings of mammography are usually nonspecific. MRI findings were also nonspecific in our study. USG may characterize GM lesions better than other modalities, especially when they are shown as tubular hypoechoic foci associated with an irregular hypoechoic mass. However, USG is still limited in excluding malignancy because associated carcinomas are sometimes obscured by the granulomatous reaction (4). Although the coexistence of GM and breast cancer has not been reported, we repeated pathologic examinations, even after the diagnosis of GM was confirmed during the clinical course, until complete remission was obtained. Management of IGM is multimodal and individualized**.** Mild cases may resolve spontaneously, while moderate to severe disease benefits from corticosteroids, immunosuppressive therapy, or a combination with surgery. Our study was

spanned a period of five years and 28 patients participated in the study. Due to a lack of large-scale studies on CGM, there is not a clear consensus on its diagnosis or treatment. Due to clinical presentations (mass, erythema, swelling, fistula formation) and radiological findings (abscess formation, enlarged lymph nodes, hypo echoic lesions, calcifications, and asymmetric increased density), it may be confused with carcinomas or infections like tuberculosis.

Treatment, though prolonged, when given appropriately leads to complete remission of the disease. There is still no generally accepted optimal treatment for GM. Bhavna Abbi *et al* **(5)** reported that 66 % GM spontaneously resolved in 11 to 105 weeks, regardless of the treatment used. Another report described a variable treatment response for GM, ranging from 3 to 27 months. These two overall outcomes are also comparable with our results. Because the natural history of GM is supposed to be self-limiting, our experience indicates that close surveillance with a minimally required surgical procedure might be the first-line treatment of GM. Wilson analysed 116 cases of GM reported in the literature in 2007. The use of oral corticosteroids as primary therapy was reported in 26 patients, and 15 (58%) had only a partial response. Similar results with corticosteroids were found in our study. However, some studies have reported that treatment with oral corticosteroids, alone or in combination with surgery, is effective. Satisfactory results have been reported with high dosages of prednisone (60 mg/d for 2–3 weeks) (6) however, the recurrence rate can be as high as 30% (7). Sakurai *et al* **(8)** reported a series of 8 patients with GM. They treated 7 of the 8 patients with only corticosteroids and obtained complete remission in 5 to 10 months. Most of the patients were in the early stage of GM. They did not report any complications or side effects during corticosteroid therapy. However, in other reports, weight gain, hyperglycaemia, oral candidiasis and gastritis side effects of corticosteroid treatment. If a side effect is not critical but ameliorable, the corticosteroid treatment can be completed. Recently, Ogura *et al* **(9)** reported GM cases in which an infiltrate of immunoglobulin G4–positive ($IgG4^+$) plasma cells were present, and speculated that patients with IgG4-related GM might benefit from corticosteroid therapy, as do those with IgG4-related autoimmune disorders. If prediction of the efficacy of corticosteroid therapy is possible, early recognition and administration of corticosteroid treatment might prevent invasive surgical treatment that deforms the breast. Dixon *et al* (10) argued that with a definitive diagnosis of GM, a nonsurgical approach is the ideal treatment

option, with aspiration or I&D of abscesses performed only when required. However, the role of I&D is controversial because it may not improve the condition and may lead to intractable incision tracks, which subsequently lead to sinus formation **(11**). in our study we did drainage of 15 patients and observed complete resolution of abscess in eight. In contrast to the abscesses in non-GM patients, the abscesses in GM patients are intractable, even if they remained within the mammary gland. Drainage of these abscesses may become insufficient, and therefore abscesses may progress to a deep part of the breast or incision tracts may lead to sinus formation. We did (multidirectional drainage) MDD procedure to enable thorough drainage of whole abscesses. Intraoperative USG was necessary to ensure that drainage was sufficient and to perform multiple CNBs, which is important to rule out malignancy. This unique drainage, which matches the characteristic of abscesses of GM, enabled the thorough drainage of abscesses and was effective. Abscesses in patients with GM should be treated with aspiration, I&D, and MDD according to the size and depth of the abscesses. Close observation and repeated minimally invasive surgical treatments, such as aspiration or I&D, might be sufficient for patients with abscesses remaining within the mammary gland. However, when a complicated abscess extends to the retromammary space, MDD might shorten the time to complete remission. Wide excision of lesion was done in two patients and mastectomy in one patient in our study. Although wide excision of the mass is traditionally performed, complete excision of the whole inflammatory mass with a negative margin might be impossible, especially when it involves more than one quadrant, because the cosmetic outcome would be unacceptable. Dixon et al. argued that with a definitive diagnosis of GM, a nonsurgical approach is the ideal treatment option, with aspiration or I&D of abscesses performed only when required. However, the role of I&D is controversial because it may not improve the condition and may lead to intractable incision tracks, which subsequently lead to sinus formation.[18] In our study, in 4 patients, the abscess penetrated the retromammary space, and in 2 patients this occurred after I&D. In contrast to the abscesses in non-GM patients, the abscesses in GM patients were intractable, even if they remained within the mammary gland. Baslaim *et al* **(12)** described abscesses in GM as differing from acute pyogenic abscesses, in GM, they are more diffuse and composed of multiple small loculi that communicate through tiny channels. Abscesses in patients with GM should be treated with aspiration, I&D, and MDD according to the size and depth of the abscesses.

The abscesses should also be sufficiently drained. Close observation and repeated minimally invasive surgical treatments, such as aspiration or I&D, might be sufficient for patients with abscesses remaining within the mammary gland. However, when a complicated abscess extends to the retromammary space, MDD might shorten the time to complete remission. Al-Khaffaf *et al* (13) reported that 18 cases of GM spontaneously resolved in 11 to 105 weeks, regardless of the treatment used. Different other studies have described a variable treatment response for GM, ranging from 3 to 27 months. The overall outcomes are also comparable with our results. Because the natural history of GM is supposed to be self-limiting, our experience indicates that close surveillance with a minimally required surgical procedure might be the first-line treatment of GM.

In conclusion, GM is a rare benign breast disease that is difficult to distinguish from other inflammatory breast diseases or cancer. The side effects of corticosteroid treatment may be challenging in such a benign disease, which is curable by close observation and thorough drainage, in a time comparable with that of corticosteroid treatment and with fewer complications. Therefore, observation and drainage without corticosteroids remain the treatment modality of choice for GM.

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