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IDIOPATHIC GRANULOMATOUS MASTITIS: A REPORT OF 8 CASES AND CLINICAL REVIEW

Breast Surgery

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ABSTRACT

Idiopathic granulomatous mastitis(IGM) is an uncommon benign chronic inflammatory disorder with unknown etiology. This disease can clinically and radiographically mimic a cancerous lesion. Diagnosis is made by Histopathological examination and exclusion of an identifying etiology. The aim of this study is to report and describe the clinical presentations , radiological findings and modes of treatments A total of 8 patients were diagnosed with IGM between March 2019- Feb 2022 . All 8 patients were subjected to Core needle Biopsies of the breast lesion and the diagnosis was confirmed to be IGM. Most patients were treated with a combination of steroids and antibiotics (n= 6, 75%). Aspiration was done in 62.5%(n=5). Incision and drainage was required in 3 patients (37.5%). Surgical excision of the lesion was done in 25% of the patients. Recurrence was noted in 3 of them (37.5%) with a median follow up of 12 months IGM is a disease with variable presentation and requires a complete work up of the patient to be able to diagnose this disorder early and thus avoid any delay in initiating treatment. Multimodality treatment is recommended as an appropriate way to manage this disease.

KEYWORDS

idiopathic, granulomatous, mastitis, breast, steroids, mammogram.

INTRODUCTION:
Idiopathic Granulomatous Mastitis is a benign breast disease that was first described in 1972 by Kessler and Wolloch as an "uncommon chronic granulomatous inflammatory disorder often mimicking breast cancer" [1].

IGM often affects parous women with a history of lactation in the recent past or with hyperprolactinemia [2]. The presentation is variable , with a wide spectrum of clinical and imaging manifestations with no specific radiological findings [3].

The most common clinical presentation of IGM is a painful, firm and distinct mass in one of the breasts with associated inflammation of the overlying skin with or withouta discharging sinus.

Often there is a delay in diagnosis and treatment. A definitive diagnosis of IGM is made by doing a biopsy of the breast mass. The management of a case of idiopathic granulomatous mastitis is complicated and involves either conservative medical treatment or surgical management or both depending on the nature of the disease.

In this study we describe our experience with respect to diagnosing and managing cases of Idiopathic granulomatous mastitis.

Objective:
To review the presentation, diagnosis and management of IGM in a tertiary care hospital.

METHODS:
All patients diagnosed with IGM between July 2019 and June 2021 were identified from the Radiological information system (RIS). Clinical presentation, radiological, pathological and microbiological results, and management were reviewed.

RESULTS:
Clinical manifestations
A total of 8 women were diagnosed with IGM, with a median age of 34 (range, 27- 45). 87.5% (n=7) of patients was of child- bearing age, 25% (n=2) were post- partum, 12.5% (n=1) with history of breastfeeding within 1 year and 25% (n=2) were nulliparous. 1 patient (12.5%) was pregnant (2nd trimester) at the time of presentation. 50% (n=4) patients gave a history of pregnancy in the last 5 years and one patient lactating at the time of presentation.

All 8 patients presented with a breast mass (n=8 ,100%). Five of them also had a developing abscess (n=5, 62.5%) and an external sinus with discharge was noted in two patients (n=2,25%). All of them presented with unilateral disease.The size of the breast mass ranged from 1 cm to 5 cms with a mean size of 3.1 cms.A Sono mammogram was performed in 7 patients. Only USG was done in the pregnant female and a mammogram was avoided given the risk involved with radiation. Malignancy was initially suspected on imaging in 3 of the 8 patients (n=3, 37.5%)

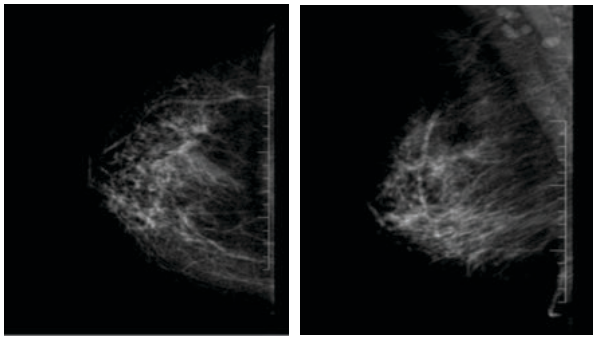

Figure 1. A 1.5 cm mass of equal-to-low-density is seen in the central inner quadrant at anterior third depth and is associated with subtle architectural distortion. It abuts a tubular subareolar duct of 0.6 cm calibre with evidence of subtle areolar skin thickening and flattening of nipple.

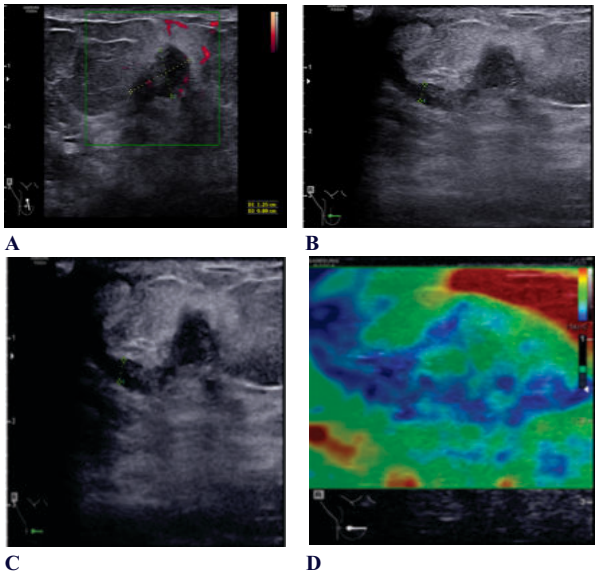

Figure 2. A 35 year old lady presented with a hard, painful lump in the right breast.

(A) 1.3 x 0.8 x 1.0 cm predominantly circumscribed mass with predominantly peripheral vascularity and a hyperechoic halo. Elasticity pattern is hard at the periphery.
(B) Contiguous 0.3 cm calibre duct extends towards the nipple and shows hypoechoic contents.
(C) Another 0.8 x 0.3 cm mass-like lesion or ductal debris is seen at 3:00 radian 1 cm from the nipple.
(D) No intraductal vascularity.

Pathological diagnosis and evaluation

2 patients underwent a FNAC of the lesion which showed features s/o mastitis with granulomatous inflammation.

All patients included in the study were subjected to Core needle Biopsies of the breast lesion and the diagnosis was confirmed to be IGM.

Histopathological examination of the breast tissue cores showed inflammatory cells such as plasma cells, neutrophils, lymphocytes and histiocytes along with multiple clusters of multinucleated giant cell and non-caseating granulomas.

DCIS or malignancy were ruled out in all the 8 specimens. Cultures for bacteria and ZN staining were negative.

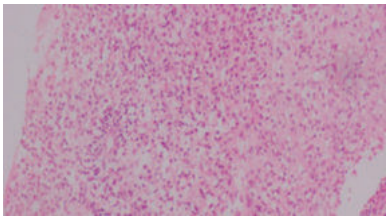

Figure 3. Granuloma comprised of epitheloid cells rimmed by lymphocytes,plasma cells and fibrosis. Occasional giant cells also seen.

Treatment and Follow-up:

Most patients were treated with a combination of steroids and antibiotics (n= 6,75%). Aspiration under local anesthesia was done in 62.5%(n=5). Incision and drainage was required in 3 patients (37.5%). Wide excision of the diseased area was required after conservative management in 2 patients. Recurrence was noted in 3 of them (37.5%) with a median follow up of 12 months.

DISCUSSION:

IGM is a rare benign inflammatory breast disease. It is an idiopathic condition and is a diagnosis of exclusion. It is characterized histologically by non- caseous chronic granulomatous inflammation by core biopsy. Other causes of granulomatous breastdisease have to be excluded.

Prasad et al. reported that 73 patients with GM had a mean age of approximately 33 years and a history of childbirth 4.6 years before mastitis on average [4].

In our study, which had similar characteristics to previously reported studies, the median age of the patients was 34 years (range 27–45), 50% patients had a history of childbirth within the last 5 years, 12.5% patients had concurrent pregnancy, and 1 patient was currently breastfeeding.

These findings indicated that hormones play an important role and may be related to the secretion theory, which has an important place in the pathophysiology of granulomatous mastitis[5].

Imaging features of IGM are non-specific which often mimic breast abscess and malignancy. There are no pathognomonic Ultrasound features, with most reported finding being an irregular hypoechoic mass associated with multiple tubular extensions [6,7].Less reported findings included abscesses, with prevalence ranging from 6.6% to 54% ; and parenchymal distortion without a discrete mass. Associated findings included skin thickening, edema, axillary adenopathy and sinus tract formation[8,9].

The more commonly reported Mammogram appearances were focal asymmetry and irregularly shaped or obscured mass[10].

Other findings included axillary lymphadenopathy, skin thickening or edema. There was no established etiology for IGM. However, association with pregnancy, lactation and autoimmune reaction were described. Some researchers also reported association with hyperprolactinemia and Corynebacterium species as a risk factor for IGM[11].

IGM is a rare disease without standardized guidelines regarding surveillance or treatment. Conservative, antibiotics and drainage, steroids ,immunomodulatory drugs and surgical excision have all been described.

For patients with mildly symptomatic disease and those who opt for expectant management , Gautier et al suggest that the affected breast be examined with a mammogram anually and with an Ultrasonogram every 3-6 months following the acute episode until resolution of the disease[12].

CONCLUSION:

IGM is a benign, rare chronic inflammatory breast disorder seen in women of child bearing age. The presentation mimics inflammatory conditions of the breast and malignancy of the breast. A high degree of suspicion is required to make a timely diagnosis as the clinical and imaging features are non-specific. There is no consensus on the definite treatment of IGM. Surveillance, medication therapy and surgery are the options available. IGM has a persistent or recurrent nature with eventual burnout at 1-2 years after presentation.

Conflict of interest statement

The authors declare that they have no competing interests

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