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Case Report

Idiopathic granulomatous mastitis of the male breast: A Case Report

Granulomatous mastitis of the male breast

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Abstract

Introduction: Idiopathic granulomatous mastitis (IGM) is a rare chronic inflammatory breast disease that predominantly affects women of reproductive age and is exceptionally uncommon in male patients. Because it can clinically and radiologically mimic breast carcinoma, histopathological evaluation is essential for definitive diagnosis.

Case Presentation: A 55-year-old male patient presented with a painful mass in the left breast. Imaging demonstrated a thick-walled cystic lesion. Core needle biopsy revealed inflammatory changes, and surgical excision was performed due to persistent symptoms. Histopathological examination showed lobulocentric granulomatous inflammation composed of lymphocytes, polymorphonuclear leukocytes, and Langhans-type giant cells, consistent with idiopathic granulomatous mastitis. No recurrence was detected during one year of follow-up.

Conclusion: Although extremely rare in males, idiopathic granulomatous mastitis should be considered in the differential diagnosis of male breast masses. Awareness of this entity and histopathological confirmation are crucial for accurate diagnosis and appropriate management.

Keywords

idiopathic granulomatous mastitis, male breast disease, granulomatous inflammation

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Introduction

Idiopathic granulomatous mastitis (IGM) is a chronic inflammatory disease of the breast with an unknown etiology, first described by Kessler et al. in 1972.[1] Owing to its clinical and radiological resemblance to breast carcinoma and its high rate of local recurrence, IGM represents a challenging clinical condition to manage. Patients typically present with a painful or painless breast mass. Definitive diagnosis requires histopathological confirmation by biopsy, with non-caseating granulomas constituting the characteristic finding.[2]

The clinical spectrum of idiopathic granulomatous mastitis is broad, ranging from a painful or painless palpable breast mass to abscess formation, fistula development, and ulcerative lesions. Although the optimal treatment strategy remains controversial, management options include observation, antibiotic therapy, oral or intralesional corticosteroids, non-steroidal immunosuppressive agents, and surgical excision.[3]

IGM predominantly affects women of reproductive age and is extremely rare in males. Only a limited number of male IGM cases have been reported in the literature, all of whom presented with a painful or painless breast mass.[4] The rarity of IGM in males has been attributed to the absence of breast lobules; however, it has been suggested that estrogen stimulation in males may lead to acinar and lobular formation, potentially contributing to the development of IGM.[5]

In this case report, we present the case of a 55-year-old male patient who was admitted with a breast mass and subsequently diagnosed with idiopathic granulomatous mastitis.

Case Presentation

A 55-year-old male patient presented to our center with a complaint of a painful mass in the left breast that had been present for approximately one month. Physical examination revealed a palpable, tender lesion measuring approximately 4–5 cm located in the inner central quadrant of the left breast.

Breast ultrasonography demonstrated a thick-walled, septated cystic lesion with dense internal content, measuring approximately 40 × 13 mm, located at the 8–9 o'clock position of the left breast, approximately 12 mm beneath the skin and posterior to the pectoral muscle. An ultrasound-guided core needle biopsy was performed using a 14-G Tru-Cut needle. Histopathological examination revealed predominantly striated muscle tissue and mixed-type inflammatory cell infiltration surrounding vascular structures within a fibrolipomatous stroma.

Due to the patient's severe pain associated with the lesion, a decision was made to proceed with surgical excision. The mass located within the muscle planes at the 9 o'clock position of the left breast was completely excised. Final pathological examination demonstrated lobulocentric granulomatous mastitis, characterized by granulomatous structures containing lymphocytes, polymorphonuclear leukocytes, and Langhans-type giant cells (Figure 1).

The patient was discharged on postoperative day 1 without any complications. Follow-up ultrasonography performed at one year postoperatively revealed no evidence of recurrence or residual lesion.

Ethical Approval

Ethical approval was not required for this case report according to the relevant guidelines.

This case report is presented in accordance with the CARE guidelines.

Discussion

Idiopathic granulomatous mastitis (IGM) is a breast pathology whose etiology has not yet been clearly elucidated. Proposed underlying factors include autoimmunity, oral contraceptive use, hyperprolactinemia, breastfeeding, smoking, diabetes mellitus, alpha-1 antitrypsin deficiency, and lactation. The diagnosis is established through histopathological examination and by excluding other potential causes. The strong association of IGM with pregnancy and lactation in the majority of female patients suggests a possible relationship between the disease and estrogen exposure.[6]

To date, 17 cases of IGM in male patients have been reported in the literature. In these cases, patients were found either to have received estrogen therapy or to have an increased estrogen-to-androgen ratio. The adult male breast contains only a small amount of adipose and stromal tissue and, in the absence of lobular development, includes only a few residual ducts. Since IGM primarily involves the lobules, this may explain its extreme rarity in males. In affected male patients, estrogen stimulation is thought to promote acinar and lobular formation, providing a substrate for the development of the disease.[7]

More than half of the reported male IGM cases, including our patient, were older than 49 years. It is suggested that an age-related decrease in the androgen-to-estrogen ratio may contribute to disease development in male patients.[7] One reported case involved a transgender patient who had received estrogen therapy for six years.[5] Another patient was 60 years old and had a history of bilateral gynecomastia, a condition thought to be associated with an increased estradiol-to-testosterone ratio in senile gynecomastia. A 21-year-old patient had a history of cryptorchidism surgically corrected at the age of 10. In another case report, a 49-year-old patient developed IGM following intravesical Bacillus Calmette–Guérin therapy for bladder cancer.[6] In rare cases of bladder carcinoma, secretion of β-human chorionic gonadotropin and estradiol has been suggested to be associated with this condition.

As with its etiology, there is currently no global consensus regarding the optimal treatment strategy for IGM. Treatment options include systemic corticosteroids, intralesional steroid administration, immunosuppressive therapy, observation without treatment, surgical excision, and combinations of these approaches.[8]

Limitations

The main limitation of this report is its single-case nature, which limits the generalizability of the findings.

Conclusion

In conclusion, although rare, IGM should be considered in male patients as well. In suspicious breast lesions, Tru-Cut biopsy should be performed in male patients as in female patients, and treatment planning should be based on histopathological findings. Particularly in middle-aged and elderly male patients presenting with a breast mass, IGM should be included in the differential diagnosis.

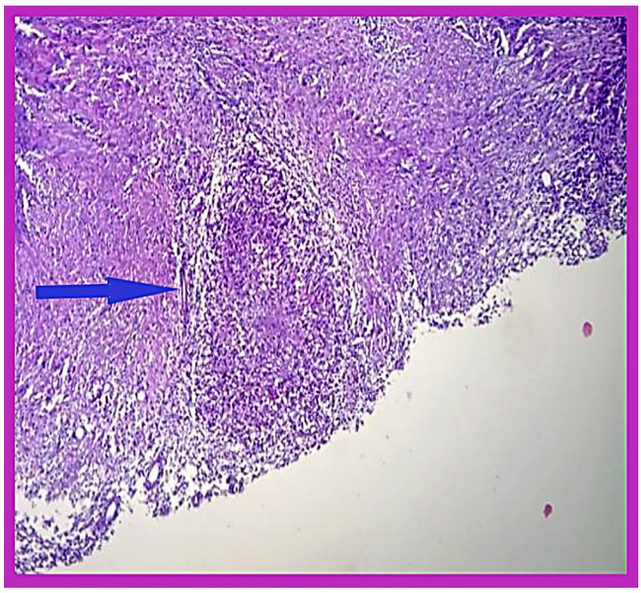


Figure 1. *Granulomatous Structures Composed of Epithelioid Histiocytes and Lymphocytes are Observed on Hematoxylin and Eosin Staining at × 40 Magnification*

Declarations

Animal and Human Rights Statement

All procedures performed in this case report were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and the accompanying images.

Data Availability

The datasets used and/or analyzed during the current study are not publicly available due to patient privacy reasons but are available from the corresponding author on reasonable request.

Conflict of Interest

The authors declare no conflict of interest.

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Author Contributions (CRediT Taxonomy)

Conceptualization: B.D., M.T.K., S.G.
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Visualization: B.D.
Supervision: S.G.
Project administration: S.G.

AI Usage Disclosure

The authors declare that no AI-assisted technologies were used.

Abbreviations

IGM: Idiopathic granulomatous mastitis

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