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Idiopathic Granulomatous Mastitis in a 46-Year-Old Woman: A Case Report

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Abstract : ***Background:*** *Granulomatous mastitis is a rare inflammatory condition of the breast that can mimic malignancy, presenting significant diagnostic challenges.* ***Case Presentation:*** *We report a 46-year-old woman with unilateral breast swelling and mastalgia, diagnosed with idiopathic granulomatous mastitis after comprehensive imaging and histological evaluation.* ***Conclusion:*** *This case emphasizes the importance of differential diagnosis in similar presentations and highlights effective management strategies.*

Introduction

Granulomatous mastitis is an uncommon disorder characterized by the formation of non-caseating granulomas in the breast tissue. It typically affects women of reproductive age and can present with symptoms that closely resemble those of breast cancer. The idiopathic form, which lacks an identifiable cause, presents particular challenges in diagnosis and management. This report details a case of idiopathic granulomatous mastitis in a 46-year-old woman, focusing on clinical presentation, diagnostic approach, and management.

Case Presentation

Patient Information

A 46-year-old woman with no significant medical history and three uncomplicated pregnancies presented to our clinic with complaints of right breast swelling and pain (mastalgia) for one month. She had been using hormonal contraception for eight years.

Clinical Findings

Physical examination revealed:

- A unilateral, tender mass in the right breast, approximately 4 cm in diameter.
- Fistulization to the skin distal to the lesion.
- No signs of inflammation, such as erythema or warmth, and no axillary lymphadenopathy.

Imaging Studies

Ultrasound

The ultrasound showed:

- A heterogeneous, poorly defined hypoechoic mass in the upper outer quadrant of the right breast.
- An associated small abscess with surrounding edema and dilated galactophoric ducts.

Mammography

Mammography findings included:

- An irregular hypodense mass in the right upper outer quadrant, measuring 4.5 cm, without microcalcifications.
- Classified as BIRADS 5, indicating high suspicion for malignancy, prompting further diagnostic intervention.

Histological Examination

A stereotactic core biopsy was performed, revealing:

- Granulomatous inflammation with non-caseating granulomas.
- Absence of malignant cells, confirming idiopathic granulomatous mastitis.

Laboratory Findings

Laboratory results indicated:

- Mild elevation of inflammatory markers (C-reactive protein and erythrocyte sedimentation rate).
- Normal biochemical tests, including liver and kidney function.

- Negative serologies for viral infections (Hepatitis B, C, HIV, CMV, EBV).
- Negative tumor markers (CA 15-3, CEA).
- Negative tuberculin skin test and QuantiFERON-TB test.

Etiological Assessment

The extensive workup revealed no infectious or autoimmune etiology, leading to the diagnosis of idiopathic granulomatous mastitis.

Management

The patient was treated with:

- **Antibiotic Therapy:** Amoxicillin-clavulanate was prescribed for potential secondary bacterial infection.
- **Corticosteroid Therapy:** A course of systemic corticosteroids (prednisone 40 mg daily) was initiated, leading to significant symptom relief within two weeks.

Discussion

Idiopathic granulomatous mastitis (IGM) is a challenging diagnosis due to its clinical resemblance to breast cancer and other inflammatory breast diseases. The precise etiology of IGM remains unclear, but it has been associated with several factors, including hormonal changes, autoimmune conditions, and previous breast surgeries (Rogers et al., 2016).

Clinical Presentation

The presentation of IGM typically includes unilateral breast swelling, tenderness, and sometimes the development of abscesses and fistulas, as seen in our patient. This clinical profile can lead to confusion with more common breast pathologies, necessitating a high index of suspicion and thorough investigation (Huang et al., 2019).

Imaging Characteristics

Imaging modalities, including ultrasound and mammography, play crucial roles in the assessment of IGM. Ultrasound may reveal irregular hypoechoic masses with associated abscesses, while mammography can demonstrate irregular, hypodense lesions. BIRADS classification assists in determining the need for biopsy (Ranjbar et al., 2018). In our case, imaging findings were indicative of a high suspicion for malignancy, underscoring the importance of histological confirmation.

Diagnostic Approach

Histological evaluation remains the gold standard for diagnosing IGM. The presence of non-caseating granulomas, along with the absence of malignancy and infectious organisms, confirms the diagnosis (Mokhtar et al., 2020). In our case, the biopsy results were critical in ruling out breast cancer and other granulomatous diseases, allowing for appropriate management.

Management Strategies

Management of IGM is tailored to the individual, often beginning with conservative approaches. Antibiotic therapy may be used initially, but corticosteroids are frequently the mainstay of treatment due to their anti-inflammatory effects (Kumar et al., 2018). Surgical intervention is usually reserved for cases resistant to medical therapy or when significant abscess formation occurs (Esposito et al., 2020). Our patient's response to corticosteroids highlights the efficacy of this treatment strategy.

Literature Context

Recent literature has emphasized the increasing recognition of IGM, particularly in women of reproductive age. A study by Adhikari et al. (2021) reported a growing number of cases being diagnosed, reflecting improved awareness among healthcare providers. The idiopathic nature of IGM necessitates an extensive workup to rule out underlying conditions, including infectious diseases and malignancies (Alshahrani et al., 2022).

Conclusion

Idiopathic granulomatous mastitis should be considered in the differential diagnosis of unilateral breast masses, particularly in women presenting with inflammatory symptoms. Accurate diagnosis through imaging and histological analysis is crucial for effective management. This case emphasizes the importance of awareness of IGM among healthcare providers to facilitate timely diagnosis and appropriate treatment.

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Conflict of Interest

The authors declare no conflicts of interest related to this case report.

Data Availability

The data supporting the findings of this case report are available upon request from the corresponding author.

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