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Case Report

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A case of idiopathic granulomatous mastitis that can mimic a breast cancer

Abstract

Introduction: Idiopathic granulomatous mastitis (IGM) is an uncommon and persistent inflammatory breast disease with no identified cause. It affects women of reproductive age who have previously breastfed. Diagnosis of IGM is difficult because clinical and radiological features might mimic breast cancer. We report an unusual case of IGM in a breastfeeding mother mimicking breast cancer.

Observation: A 32-year-old female patient, with no particular pathological history, has been presenting for 3 months mass of the right breast with erythema. A few weeks later, she presented a suppuration and ulceration of the right breast. The breast examination revealed a painless and poorly marginated mass, mobile in relation to the muscle plane and adherent to the skin at the junction of the external quadrants measuring 40*40mm. Breast ultrasound showed a heterogeneous hypoechoic irregular mass in the outer quadrants with surrounding edema, and dilatation of the milk ducts, classified as BI-RADS 4. Histologically, there was an epithelioid and gigantocellular granulomatous reaction of the mammary parenchyma, with a polymorphic inflammatory infiltrating of lymphocytes, plasma cells, and neutrophils. The patient received corticosteroids, bromocriptine, amoxicillin and clavulanic acid associated with topical care of the lesion. The evolution was favorable with the regression of the mass after 18 months.

Discussion: IGM is an uncommon and benign condition that is frequently misdiagnosed. It mostly occurs in young women during the genital period. IGM does not have any pathognomonic mammographic characteristics. Breast ultrasound can show a nodular hypoechoic image with irregular contours with a long axis parallel to the skin. IGM is characterized by lobulocentric non-caseating granulomas made up of epithelioid histiocytes mixed with Langhan's multinucleate giant cells on histological examination. The treatment of IGM is not well established. The management of the disease is based on its clinical form. IGM is a gradual and recurrent disease that has a major impact on the quality of life and requires close surveillance.

Conclusion: IGM is an uncommon and persistent inflammatory disorder of the breast that can be difficult to diagnose. Breast cancer is the predominant differential diagnosis, with the possibility of an association. Increased awareness of this disorder will lead to more accurate and timely diagnosis and treatment.

Keywords: idiopathic granulomatous mastitis, breast mass, breast ultrasound, breast cancer, inflammatory breast disease.

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Soukaina Cherradi,[1] Mohamed Hamid,[2] Mariam Mahtate,[1] Amina lakhdar,[1] Najia Zeraidi,[1] Aziz Baidada[1]

[1]Department of Obstetric and Gynecology and Endoscopy, Souissi Maternity Hospital, ibn sina University Hospital, Mohammed V University, Morocco

[2]Department of neurology, Mohamed V Military Teaching Hospital, Morocco

Correspondence: Soukaina Cherradi. Department of Obstetric and Gynecology and Endoscopy, Souissi Maternity Hospital, ibn sina University Hospital, Mohammed V University, Rabat, Morocco, Tel +212677695186, Email dr.soukaina.cherradi@gmail.com

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Introduction

Idiopathic granulomatous mastitis (IGM) is a chronic and uncommon inflammatory breast disease with no identified cause, described for the first time in 1972 by Wolloch and Kessler.[1] It mainly affects women of childbearing age. The diagnosis of IGM is delicate because clinical and radiological features might mimic breast cancer. Because of its unclear etiology and rareness, diagnosis and treatment of IGM are a challenge.[2]

The therapeutic strategy is not consensual. The evolution is often toward chronicity, marked by the risk of abscess and recurrence. The prognosis is essentially functional but not life-threatening. We describe a rare case of a breastfeeding mother presenting with an idiopathic granulomatous mastitis resembling a breast cancer.

Observation

A 32-year-old female patient, second gesture, second part, with no particular pathological history, has been presenting for 3 months mass of the right breast with erythema. Her last child, aged 8 months still under breastfeeding. She took antibiotics without clinical improvement. A few weeks later, she presented a suppuration and ulceration of the right breast.

The breast examination noted symmetrical breasts of average size with a purulent ulceration at the junction of the external quadrants of the right breast. Palpation of the breast revealed a hard, painless, and poorly limited mass, mobile in relation to the muscle plane and adherent to the skin at the junction of the external quadrants measuring 40*40mm. The nipple was neither umbilicated nor retracted (Figure 1).

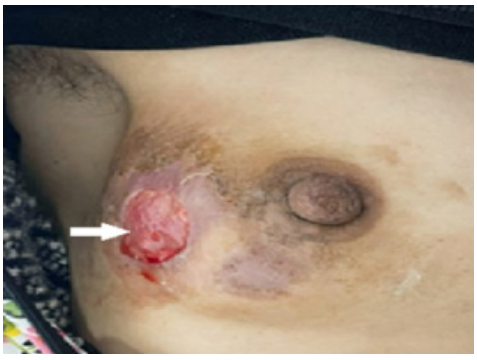

Figure 1 image showing a purulent ulceration at the junction of the external quadrants of the right breast.

A clinical examination of the left breast was normal. The lymph nodes were free. Breast ultrasound was performed showing a heterogeneous hypoechoic irregular and poorly marginated mass in the outer quadrants with surrounding edema, associated with dilatation of the milk ducts classified as BI-RADS 4 (Figure 2).

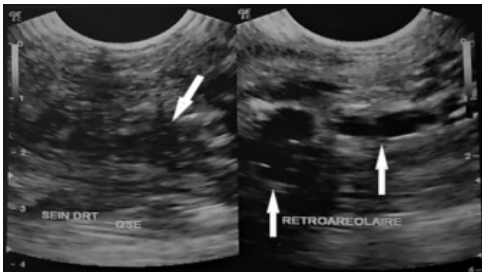

Figure 2 Breast ultrasound revealing a heterogeneous hypoechoic irregular and poorly marginated mass in the outer quadrants of the right breast with surrounding edema and dilatation of the milk ducts classified as BI-RADS 4.

The biological tests were normal. A mammary parenchyma with an epithelioid and gigantocellular granulomatous reaction was discovered histologically, along with a polymorphic inflammatory infiltrating of lymphocytes, plasma cells and neutrophils suggestive of mastitis epithelioid with gigantic-cell granulomatous without caseous necrosis or tumor lesions (Figure 3) (Figure 4).

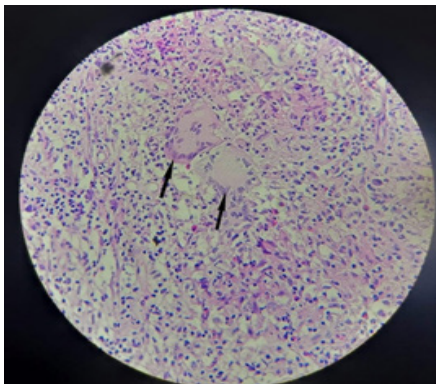

Figure 3 Granulomas with gigantic-cell granulomatous without caseous necrosis. (Hematoxylin &Eosin stain, 400X).

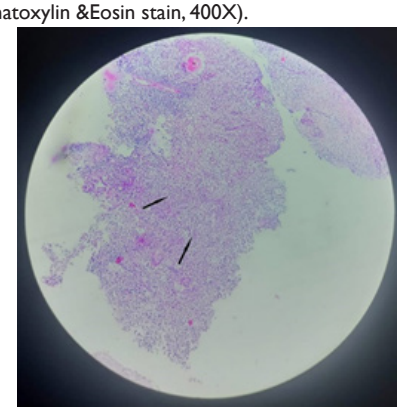

Figure 4 High-power view of the granuloma shows a mixture of epithelioid histiocytes and lymphocytes and neutrophils. (Hematoxylin &Eosin stain, 400X).

The treatment was based on corticosteroids with bromocriptine to inhibit milk production and decrease hyperprolactinemia. She received amoxicillin and clavulanic acid at a dosage of 1g/d for 15 days, and 60mg/d of prednisone for 2 months decreased to 30mg/day for 1 month, associated with topical care of the lesion. The evolution was favorable with regression of the mass, healing of the ulcer, and stabilization of the lesion after 18 months.

Discussion

IGM is an uncommon and benign condition that is frequently misdiagnosed. Its prevalence is difficult to estimate. It mostly occurs in young women during the genital period.[3,4] The extreme ages reported are 17 and 78 years with a mean age of 32 years.[3]

IGM is described as a firm inflammatory mass, poorly limited that may become abscess. Fahmy et al.[5] confirmed that IGM can manifests as mass or ulceration. In the study of Dora,[6] IGM was discovered in 50% of cases through auto-palpation of the breast mass, 42% of these patients had mastodynia, and 14% had nipple discharge. Our patient had a clinical aspect similar to the description of Fahmy et al., which is a purulent ulceration with a painless, and poorly limited mass without adenopathy.

IGM does not have any pathognomonic mammographic characteristics. Skin thickening, nipple inversion, or axillary lymphadenopathy may be associated with parenchymal heterogeneity with a localized asymmetrical density matching the palpable mass.[7–9] The breast abscess can be identified as a single masse, whereas other mammographic characteristics can identify carcinoma.[10]

Breast ultrasound can show a nodular hypoechoic image with irregular contours with a long axis parallel to the skin.[7] In our case, breast ultrasound showed a suspicious radiological aspect of malignancy with galactophoric ectasia, classified as BI-RADS 4.

IGM is characterized by lobulocentric non-caseating granulomas made up of epithelioid histiocytes mixed with Langhan's multinucleate giant cells on histological examination. Lymphocytes, plasma cells, and polymorph leukocytes are part of a chronic inflammatory reaction. Squamous metaplasia of both the ductal and lobular epithelium can occur, resulting in the production of micro-abscesses. The lack of microorganisms on staining for bacteria and fungi, which rules out infective granulomas, is a significant characteristic of IGM. The absence of caseous necrosis with granulomas affecting lobules rather than ducts distinguishes this disease from tuberculosis.[11]

The treatment of IGM is not well established. The management of the disease is based on the clinical form. In the acute form, antibiotic therapy is systematically administered combined with anti-inflammatory drugs to control the inflammation. The findings of microbiological culture should guide antibiotic treatment.[12] In a study by Dora,[6] 92.8% of patients received antibiotics as first-line treatment. Corticosteroid therapy was used as the second intention. Boufetal et al.[13] prescribed only corticosteroids at a dose of 60 mg/d for 2 months, followed by a gradual decrease in dose. Corticosteroid treatment has a considerable failure rate, with recurrence rates ranging from 16 to 50 percent.[7]

The treatment of IGM during breastfeeding must be modulated, corticosteroids are associated with bromocriptine to inhibit the milking rise and thus decrease hyperprolactinemia. Overstimulation of breast parenchymal tissue by hyperprolactinemia may play an etiological role in the development of IGM.[14]

Aghajanzadeh et al.[15] reported that 16 of their patients were treated with a combination of steroids and bromocriptine, with a favorable response in 31% of cases. If steroid therapy was not efficient, methotrexate may be another alternative. This may allow to completely resolve the condition without the use of long-term steroid treatments.[16,17]

Basic surgical concepts should be used to manage an abscess or other complications. Most of IGM patients were first treated by

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surgical excision, which intended to excise the IGM center as well as the margin of normal breast tissue surrounding it. Localized, simple lesions that may be excised with a clean margin without the requirement for adjuvant treatments are good candidates for surgical excision.[18] Our patient did not benefit from any surgical treatment. She only received a medical treatment.

IGM is a gradual and recurrent disease that has a major impact on the quality of life.[19] Because of the high frequency of recurrence, close surveillance is recommended. Our patient had a good outcome with the regression of the mass, and stabilization of the lesions, without recurrence after 18 months.

Conclusion

IGM is an uncommon and persistent inflammatory disorder of the breast that can be difficult to diagnose and treat. Its diagnosis is based on histological examination. Breast cancer is the predominant differential diagnosis, with the possibility of an association.

The therapeutic strategy of this condition is not well documented. Increased awareness of this disorder will lead to more accurate and timely diagnosis and treatment, which may include antibiotics, steroid therapy, immunosuppressants, and surgical excision.

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Conflicts of interest

The authors declare having no conflict of interest.

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