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Case Series

Granulomatous lobular mastitis: A case series

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Abstract

Introduction: Granulomatous lobular mastitis (GLM) is an inflammatory disease of the breast, which can mimic breast cancer in clinical and radiological findings. We conducted the present study in order to determine the diagnostic and other important aspects of this disease

Methods: In this study, we reviewed the records of 38 patients with GLM in order to describe the clinical, imaging, laboratory, pathologic, and treatment aspects of this disease.

Results: All of the patients' ages were in the range of 22-62 years (mean age: 42 years). All of them had children, history of oral contraceptive pill (OCP) usage, antibiotic therapy and mammoplasty. In physical examination, dimpling, edema, inflammation, ulcer, abscess, and firm mass were detected. Size of masses was in the range of 2 × 2 to 8 × 6 cm and their location, in most cases, was in the superior lateral quadrant or central region. In Ultrasonography, a hypoechoic fibroglandular mass and collection, and in pathologic findings, granulomatous reaction was reported. These patients were treated by antibiotics, corticosteroids, and surgery.

Conclusion: GLM is a chronic inflammatory lesion of the breast which can mimic breast cancer. A history of child bearing, lactation, and OCP drug usage have suspicious roles in the formation of GLM. The most common clinical sign in these patients is a painful mass in the breast. We uncovered that clinical and radiological findings are not specific and sufficient for diagnosis of GLM. Therefore, for better diagnosis of this disease, usage of core, incisional, or excisional biopsy are recommended.

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Introduction

Granulomatous lobular mastitis (GLM) is one of the rare inflammatory diseases of the breast.[1] It can mimic breast cancer in clinical findings and mammography.[1] GLM is characterized by non-caseating granulomas and microabscess confined to the breast lobule.[2,3] The etiology of GLM is unclear, but some researchers believed that infection, oral contraceptive pill (OCP) usage, lactation, and autoimmune disease may be its causes.[4] This disease usually affects women of childbearing age.[3] The treatment of GLM remains controversial.[5-7] Complete surgical excision with or without corticosteroids has been suggested in the literature.[5-7] The purpose of this study is to review and describe the clinical, imaging, and pathologic features of GLM with emphasis on incidental findings, and to discuss diagnostic protocols and different treatment plans. We hope this will lead to the better diagnosis and treatment of this rare inflammatory disease.

Methods

We reviewed 38 cases of GLM records between November 2009 and September 2012. The records containing clinical presentation, past medical history, familial history, drug usage, laboratory and pathologic findings, and imaging were

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reviewed. All of the women underwent a clinical breast examination to identify palpable mass, skin thickening, dimpling, and axillary lymphadenopathy. A mammogram was obtained from patients older than 35 years. Incisional biopsies from the abscess wall were performed on 14 patients who presented with abscess. Fine-needle aspiration (FNA), core biopsy, and incisional biopsy were used for pathological diagnosis. Definitive diagnosis was obtained by FNA using an 18-gauge needle, percutaneous ultrasound-guided core biopsy, or surgical excision in other patients. For 34 cases, local excision was performed for their lesions. All samples were stained with Papanicolaou staining procedure (PAP). In addition, 11 patients were under treatment of antibiotics and corticosteroids.

Results

The mean age of patients was 42 years (range: 22-62 years). Symptoms persisted in spite of several courses of various antibiotics, including Tazocin-Sulbactam and corticosteroid therapy, in 11 cases. The duration of symptoms was 1 week to 12 months. The mass was hard on palpation in 50% of the women and clinically measured 1.0-8.2 cm. None of the women had any systemic disorders or history of specific infection.

All of the patients had children. No patient had a family history of breast cancer, and none were smokers. The most common symptoms were abscess, erythema, edema, inflammation, and ulcer. Suppurative exudate and firm mass were observed 8 patients in physical examination. Associated nipple discharge and ulceration were seen in 8 and 3 patients, respectively. Moreover, 3 cases had a history of contraceptive usage, 2 cases had a history of mammoplasty and lumpectomy, and 20 cases had a history of antibiotic therapy.

In pathologic findings, fibrocystic changes, inflammation, abscess, edema, microcystic formation, apocrine metaplasia, giant cell, epithelioid cells, fat necrosis, and eventually granulomatous reaction were seen. Size of masses was in the range of 2 × 2 cm to 8 × 6 cm (Table 1). Ultrasonography showed a hypoechoic fibroglandular mass and collection. Position of masses in most cases was in the upper outer quadrant or central region. Left and right breasts were affected equally in our patients. In one case, her infant refused to suck at the affected breast and in 2 cases lesions were bilateral.

Table 1. Symptoms and signs in patients with GLM (granulomatous lobular mastitis)

Palpable mass	All
Location of mass	Central or upper outer quadrant
Size of mass	2 × 2-8 × 6 cm
Unilateral	36
Bilateral	2
Abscess	14
Ulcer	3
Nipple retraction	2
Suppurative exudate	8
WBC	4500-13500

WBC: White blood cells

Discussion

GLM is a chronic, inflammatory, and rare lesion of the breast which can mimic breast cancer. It is characterized by presence of epithelioid and multinucleated giant cell granuloma limited to the mammary lobules with microabscess in the absence of obvious etiology.[8] There was no evidence of infection, trauma, or foreign materials.[9] Serologic and bacteriologic tests are usually negative in GLM.[10] Based on our findings and that of other authors, a recent history of child bearing, lactation, and OCP play an important role in the formation of GLM.[10] For this reason, history taking should be done carefully at first admission. GLM should be differentiated from other causes of chronic inflammatory breast diseases, such as plasma cell mastitis, Wegener's granulomatosis, ruptured cyst, sarcoidosis, fat necrosis, tuberculosis, carcinoma, duct ecstasies, and fungal infection.[9]

Increase in serum prolactin may cause the rupture of acini and ducts, inducing granulomatous reaction.[7,11] In this study,

most patients were porous and young. In most patients with GLM, unilateral painful breast mass were seen. Only 2 cases were bilateral. Ultrasound identified a collection, fibroglandular and hypoechoic ill-defined mass in the majority of patients.[6,12] Han et al. reported finding similar to these findings.[13] The information obtained from imaging was nonspecific. Yilmaz et al.[14] and Memis et al.[15] identified a focal asymmetric density as the most frequent pattern.[12] The affected breast mammographic findings included a lobulated or irregular mass and diffusely increased density. Because of an overlying density of the breast in most women, lesions were mammographically occult.

For this reason, imaging could not differentiate GLM from malignant or true inflammatory conditions. Lesions seen clinically and radiologically, or by ultrasound could be misdiagnosed easily as carcinoma. Therefore, histopathological evaluation plays a very important role in differentiating GLM from other lesions. For diagnosis of GLM, we used FNA, core, and incisional biopsy. FNA is an option for tissue diagnosis, because it is easily available and provides faster results than core biopsy.[16] FNA may be helpful in differentiating malignancy from an inflammatory condition, even though it may not be as specific as core biopsy.[17]

GLM is characterized histologically by the presence of non-necrotizing granulomas, usually admixed with neutrophils originating in the breast lobules.[9,18,19] In our study, 8 cases, who were reported as abscess in FNA, were reported as GLM after biopsy, in histopathologic study. There is still no accepted strategy for management of GLM, but antibiotic, corticosteroid therapy, and surgery are used widely, even though optional treatment has not been established.[6,11,20] In this study, for 8 cases prednisolone 20 mg/day and Tazocin-Sulbactam were ordered for 1 month. At the end of treatment a complete remission was seen. Our study also indicates that wide surgical excision is more beneficial than limited excision in patients with localized disease.

Conclusions

In this study, we found that clinical and radiological findings are insufficient for diagnosis of GLM, as they are not disease specific. Therefore, histopathological findings play a very important role in differentiating these lesions from other diseases. For definitive diagnosis of GLM, core, incisional, or excisional biopsy should be used.[21-23]

Awareness of GLM in young women with painful breast mass leads to a more accurate diagnosis by medical practitioners. Eventually, histopathologic examination establishes the correct diagnosis, and corticosteroid use in this inflammatory disease shows a regression, good cosmetic results, and low recurrence rate.[10]

Conflict of Interests

Authors have no conflict of interest.

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