Granulomatous Mastitis: A Case Report and Review of the Literature

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Granulomatous mastitis first described by Kessler and Wolloch [1] in 1972 is being recognized more and more as a clinicopathological entity of its own. Seventy-seven cases have been published in the world literature [1-4,7-16]. Its etiology remains to be elucidated. It presents clinically as a breast lump which mimics carcinoma. Histologically it consists of noncaseating lobular granulomatous reaction with micro-abscesses. Because of its distinctive pathological features, particularly a lobule centered distribution, Going et al [2] recommended the term “granulomatous lobular mastitis” and distinguished it from the granulomatous variants of duct estasia/periductal mastitis. The diagnosis should not be made until other known causes of granulomatous mastitis have been excluded. Surgery, steroids, or both, have been used to treat this condition which is known to have a tendency for persistence and recurrence [2-4].

Case Report

A 39-year-old Saudi woman presented with an extra-areolar right breast lump which she had had for the last 7 months. She was a multiparous, obese woman with her last pregnancy 4 years previously. She breastfed all her children and never used contraceptive pills. She was hypertensive and on Atenolol 100 mg daily with no other complaints. There was a mass that was firm and fixed, measuring approximately 6 × 5 × 5 cm in size in the inner-upper quadrant of the right breast. There were no lymph nodes in the right or left axilla.

A clinical diagnosis of carcinoma was made and the patient had an excision of the lump performed. Frozen section biopsy specimen showed granulomatous mastitis with no evidence of malignancy. Paraffin sections revealed noncaseating granulomatous lobulitis with micro-abscesses (Figure 1). In some areas foreign body giant cell reaction and a few dilated ducts were seen. Special stains for bacteria, fungi and mycobacteria were negative. The culture for mycobacterium tuberculosis was negative. A diagnosis of granulomatous mastitis was made.

The patient has been followed-up for 13 months postoperatively with no evidence of recurrence.

Discussion

Granulomatous mastitis is now a well recognized entity of its own. Kessler and Wolloch [1] were the first to describe it as a separate entity in 1972. Our review of the literature [1-4,7-16] revealed that since then, 77 cases of this form of mastitis have been reported. Among these, there have been several detailed reports on the subject, especially those of Going et al [2] in 1982 (9 cases) and Fletcher et al [3] in 1987 (7 cases).

Figure 1. Histological section of the breast mass showing many lobules with granulomatous inflammation. (Hematoxylin and eosin staining; original magnification, × 100.)
The lesion mimics carcinoma clinically. Diagnosis by fine needle aspiration seems to be difficult, if not impossible, because of the similarity with other granulomas, and the limited number of cases reported which provide limited experience with the condition. Even with the paraffin section the lesion can be difficult to diagnose and has to be distinguished from other known causes of granulomatous mastitis, granulomatous variants of duct ectasia, and periductal mastitis. Special stains for bacteria, fungi and mycobacteria should be performed. Absence of caseation necrosis, negative staining and culture for mycobacterium tuberculosis would be negative for tuberculosis. Fat necrosis in early stages should show foreign body giant cells, lipid filled macrophages, lymphocytes and occasional plasma cells. In late stages, features of fat necrosis are fibrosis and may be calcification. The diagnosis of sarcoidosis requires correlation of pathologic and clinicoradiologic findings [5]. Noncaseating granulomas on histology, Kveim test, chest radiography, and measurement of serum angiotensin converting enzyme (ACE) and lysozyme should help to distinguish sarcoidosis [5,6].

Going et al [2] compared clinical and pathological features of 9 cases of granulomatous mastitis with those of ten cases of duct ectasia/periductal mastitis, all of which were associated with active granulomatous inflammation. They found that although there is some overlap with duct ectasia/ periductal mastitis, granulomatous mastitis has distinctive pathological features, particularly a lobule centered distribution for which they recommend the term “granulomatous lobular mastitis.” In duct ectasia/periductal mastitis, the lesions in most cases were mainly periductal in distribution. The mean age of their patients with granulomatous mastitis was 28.4 years, while that of duct ectasia/periductal mastitis was 45 years.

The etiology and pathogenesis of granulomatous mastitis remains unclear. It has been reported post-lactational [7], post-partum [8], and with hyper-prolactinemia [9]. Most of the reported cases in the literature have been young parous women.

No definite association with contraceptive pills or breast feeding could be found [2,3].

Some have speculated that granulomatous mastitis may represent a localized autoimmune or hypersensitivity response [1,7]. Others [4] found no evidence of immune dysfunction or vasculitis.

Granulomatous mastitis has a strong tendency for persistence and recurrence [3]. Awareness of the condition is important because surgery does not offer the best treatment of recurrent disease and trials of adequate drug treatment, including corticosteroids, may be required [4].

References