First Report of Idiopathic Granulomatous Mastitis Treated with Methotrexate Monotherapy

To the Editor:

Idiopathic granulomatous mastitis (IGM) is a rare, benign, but disfiguring inflammatory disease of the breast. It usually presents as a unilateral, expanding breast mass, occasionally with surrounding local inflammation[1]. Diagnosis is made by excisional biopsy: histology shows epithelioid and multinucleated giant cell granulomas limited to the mammary lobules with microabcesses[2]. Other causes of granulomatous lesions must be excluded, including infections with tuberculosis or fungi, and systemic diseases such as Wegener's granulomatosus, sarcoidosis, and polyarteritis nodosa.

The optimal treatment for IGM is unclear: most patients have been treated with wide surgical excision or total mastectomy, though recurrence is common[1,3]. High-dose glucocorticoids have been shown to be effective but not without complications, including difficult wound healing, fistula formation, and recurrence on withdrawal[1,4,5]. More recently, Kim and others have reported the use of methotrexate (MTX) in combination with high-dose prednisone for refractory cases of IGM[6,7]. Here, we describe the first known cases of IGM treated successfully with MTX alone.

Patient 1 is a 32-year-old Asian woman who developed a left-sided, tender, 8×8 cm breast mass in 2005. Her past medical history was remarkable for diet-controlled diabetes, 3 early term spontaneous abortions, and a uterine fibroid that had been surgically removed. She had 1 child born at full term in 2004 who had been breast fed for several months. She was taking no medications but had taken oral contraceptive pills (OCP) prior to 2003. There was no family history of malignancy or autoimmune disease. A biopsy of the mass showed granulomatous lobar mastitis and cultures and stains for bacteria and acid-fast bacilli were negative. She was initially prescribed ciprofloxacin for presumed bacterial mastitis. The breast mass showed no improvement, but her course was complicated by pain in her wrists, knees, and ankles, without synovitis. She was given a 7-day course of prednisone 10 mg daily with resolution of her joint symptoms. She developed drainage from the breast mass distal to the areas of biopsy, and a fistula was diagnosed. The mass increased in size, with persistent pain, fluctuance, and serosanguinous drainage. A second biopsy confirmed granulomatous lobar mastitis.

Patient 2 is a healthy 35-year-old South Asian woman who developed a right-sided, tender, 10×5 cm breast mass in 2007 associated with fevers and chills and overlying erythema. She had 2 children born in 2001 and 2004 who had been breast fed for 12 months each. She was taking no medications and had never taken OCP. There was no family history of malignancy or autoimmune disease. She was treated presumptively with multiple courses of antibiotics, including doxycycline and amoxicillin/clavulanate. A biopsy revealed granulomatous lobar mastitis. Stains and cultures were negative for bacteria, fungi, and acid-fast bacilli. She was given a 2-week course of prednisone 40 mg daily, and the erythema overlying the mass improved, but there was no change in the size of the mass or the amount of induration. The mass was partially resected several weeks later, but a large area of induration with erythema remained. Again, histologic analysis showed granulomatous mastitis.

Both patients were referred to our clinic for consideration of mastectomy-sparing treatment options. Neither patient showed evidence of systemic inflammatory disease. They were started on oral MTX 15 mg weekly in combination with daily folic acid. After 6 weeks, the MTX dose was increased to 20 mg. Over the next several months, both patients experienced shrinking of the breast mass, and by 12 months following the initiation of MTX, no mass was palpable and the breast tissue was soft, without erythema or fistulae.

Patient 1 was treated for 24 months before slowly tapering off the MTX; she remains disease free today. Patient 2 has received 12 months of treatment to date, and we will taper this dose after she has been disease-free for at least 12 months.

Idiopathic granulomatous mastitis can be a devastating, disfiguring illness that frequently results in total mastectomy. Glucocorticoids are the primary medical therapy for IGM, but they have been used with limited success. To our knowledge, these are the first reported cases of IGM treated successfully with MTX alone. Moderate doses of oral weekly MTX resulted in shrinking of the breast mass over a period of months. We propose that IGM may be treated with MTX monotherapy, without the use of glucocorticoids or wide surgical excision. Further study is needed to confirm our encouraging experience and to determine the optimal dose and duration of treatment.

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