



## Retrospective Review of a Case Series of Idiopathic Granulomatous Mastitis Chinese Patients Treated with Ductal Lavage

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### Short Communication

Idiopathic granulomatous mastitis (IGM) is a rare, chronic benign inflammatory disease of the breast. It was first reported in 1972 by Kessler and Wolloch [1], with the etiology unknown. For non-lactational patients with pathologically diagnosis of IGM, the current treatments include antibiotics and/or corticosteroids [2-6], surgery [6-12], drainage [6], methotrexate [13,14], or observation alone [6, 15]. In most of the hospital, surgery is usually the last choice, when the diseases cannot be controlled [3,7,16]. Corticosteroids is the major conservative treatment nowadays. However, its long-term use may lead to side effects such as steroid-induced diabetes mellitus (DM), the potential risk of infections, glucose intolerance and cushingoid features [8,13]. We hypothesized that ductal obstruction might be one of the causes of IGM, and we proposed that ductal lavage could be used for treatment of IGM patients. In this retrospective case series study, we reported the efficacy and safety outcomes of the ductal lavage as the first-line treatment for IGM female Chinese patients.

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### Method

We retrospectively reviewed our database and identified 20 IGM patients that had received ductal lavage as the first-line treatment.

#### Inclusion criteria

- 1) 18-65 year's old female patients
- 2) Mastitis occurred at least 1 year after the cessation of the last lactation
- 3) Pathologically diagnosed as IGM
- 4) Received ductal lavage as first-line treatment

#### Exclusion criteria

- 1) Pregnant women or women with breast carcinoma
- 2) Patients with systemic lupus erythematosus (SLE), rheumatic disorders, or tuberculosis

We reviewed the medical charts and extracted demographic features, the clinical presentations of the IGM and the treatment outcomes. For the ductal lavage, we inserted the infusion cannula (21-23 G) into 4-5 lactiferous ducts from the nipple under local anesthesia, and pump 10ml irrigation solution (2% Lidocaine 5ml, Triamcinolone acetonide 40 mg, 0.9% saline 10ml and ceftriaxone 1.0 g) into the ducts. The patient returns to the clinic the next day, with the irrigation solution staying in the lactiferous ducts overnight, and receives breast massage. Repeat the infusion and massage procedure every other day, for 2 weeks. We reviewed the charts and information of these patients, and obtained the follow-up information by telephone and face-to-face visit at clinic. Complete response (CR) is defined as the disappearance of palpable mass and all related symptoms (redness, tenderness, etc.). Partial response (PR) was defined as significant relief of symptoms, but does not reach the CR criteria. Stable and progressive diseases (SD/PD) were defined as unchanged and progressive symptoms, respectively, indicating the ineffectiveness of the treatment.

### Results

A total of 20 patients were identified as eligible. The median age was 34.5 (15-53) years old.

The median (range) size of the mass by palpation was 6.25(1.5-12) cm. There were 12 patients had a history of breast feeding and one of them had lactational mastitis during the breast feeding period with a median follow-up of 5.7 months. There were 9 patients achieved CR. The median (range) months to CR was 1.8 (0.7-6.3) months. These patients did not receive any further treatments. There were 10 patients achieve PR. Among them, two received surgical treatment, and one received steroid treatments. The others did not receive any further treatment. There was one patient who had SD/PD, and received surgical treatment. The procedure of the ductal lavage is safe and painless, without any adverse events.

## Discussion

Idiopathic granulomatous mastitis (IGM) is a rare benign inflammatory disease that mimics carcinoma of the breast [1,8,17]. Because of its unknown etiology and low incidence, the gold standard of treatment has not yet been established whilst surgical resection, corticosteroid, methotrexate or observation alone have been previously proposed. Most of the published studies are case reports or small series [2-17]. Surgical excision of is the most commonly reported treatment [2]. In a study conducted by Hur et al. [6], surgical excision was shown to have short recovery time, high possibility of success (90.3%) and low risk of recurrence (8.7%). However, higher risk of recurrence after surgical excision, 17% to 23% were also reported in the other studies [2,12]. Meanwhile, surgery such as lumpectomy, partial or total mastectomy, may lead to delayed wound healing, the formation of abscesses or fistulae, and poor cosmetic results [3,7,16]. Therefore, more efforts are made to search for conservative treatments. In recent years, many investigators have advocated corticosteroid therapy rather than excision (2-5). Mizrakli T et al. [4] reported that 44 (85.6 %) of 49 patients received the standard treatment dose of steroid (0.5 mg/kg/day), and 40 (81.6 %) patients had a disease-free follow-up period time of 6 months. Therapy with corticosteroids might be an effective and appropriate treatment option for IGM. But it is worth noting that although two of the 49 patients responded well to steroid therapy, NSAIDs were administered because of their developed side effects. The side effects of corticosteroids should not be ignored [8, 13]. Bouton ME et al. [15] suggested IGM is a self-limited disease that will resolve spontaneously without treatment. 27 cases resolved without surgical excision or other medications, the average (range) time for the palpable mass to resolve after presentation of symptoms was 7.4 months (0 to 20). However, it is currently unknown which patients will resolve, when which will have diseases progress, when no treatments were given. Therefore, observation alone should be cautious for these patients, and we should balance the benefit of reducing additional cost and treatment, and the risk of diseases progress, when we used these approach. Also, the quality of life would not be good for patients with no treatments. In our study, The median (range) months to CR was 1.8 (0.7-6.3) months, which suggest the effectiveness of ductal lavage. No adverse event was observed during the therapy. But the longest follow-up time is 15 months, and a longer time of follow-up is need. This retrospective study suggested the efficacy and safety of ductal lavage used as the first-line therapy for non-lactational IGM patients. However, due to its retrospective design, some baseline information was not available. Additionally, lack of standard procedures for efficacy evaluations and patient follow-up may also bring significant bias during analysis. Therefore, we need a prospective designed study to confirm our results. A prospective, single arm study with more data collected was registered (NCT02794688) and initiated.

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