

Treatment Modality of Idiopathic Granulomatous Mastitis with Surgery Alone or in Combination with Steroid

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ABSTRACT: Background: Idiopathic Granulomatous Mastitis (IGM) is a rare chronic inflammatory disease. Diagnosis and treatment is still a challenge because of obscure etiology and rareness. Owing to wide spectrum of IGM it is difficult to standardize and optimize the treatment. The aim of our study was to evaluate the outcome of surgical excision or in combination with steroid in treating IGM. **Methodology:** A randomized controlled clinical trial was done in BIRDEM (Bangladesh Institute of Research and Rehabilitation of Diabetic, Endocrine and Metabolic Disorder) Hospital, Dhaka, Bangladesh from July'2008 to June'2018. Overall 82 patients met the inclusion criteria. We analyzed therapeutic modalities and compared the patients' outcomes based on treatment. **Results:** All patients underwent wide excision with clear margin under general anesthesia. Post operatively steroid was given in 41 patients. Duration of steroid therapy was 6 months after surgery. We have seen that recovery time was short in steroid group (Gr-II) average 167.07 days in compared without steroid (Gr I) average 253.28 days. Patients who underwent surgery only (GR-I) about 49.90% patients experienced recurrence (e.g. fistula formation and inflammatory mass etc.) On the other hand, 12.1% patients developed recurrences that were treated with steroid following surgery (Gr-II). **Conclusion:** Surgery with steroid is more effective in treatment of idiopathic granulomatous mastitis than surgery alone.

KEYWORDS: Idiopathic granulomatous mastitis, Steroid.

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Introduction

Idiopathic granulomatous mastitis is a rare benign chronic inflammatory disease of breast which was first described in 1972 by Kessler and Wolloch.¹ It presents with varied local presentations.² Although easily confused with tuberculosis or malignancy and diagnosis is confirmed only by histopathological examination.³ This disease occurs mostly in women with child bearing age.^{4,5} The lesions are mainly unilateral presenting as a single, firm, palpable, painful mass varying in size from 0.5 to 10 cm mostly peri-areolar region. It may occur in any of the four quadrants accompany regional lymphadenopathy.^{6,7} Its reported causes include hypersensitivity to lactation products extravasated in to breast tissue, localized breast trauma, subclinical breast infection, and to immune processes. That result in noncaseating granulomas and micro abscess localized to breast lobule. This type is referred to as idiopathic lobular granulomatous mastitis (IGM). There is no universally accepted guideline available for management of IGM. Wide local excision with or without steroid therapy is the most commonly recommended treatment.^{8,9,10}

Materials and Methods

This is a randomized controlled clinical trial done in BIRDEM (Bangladesh Institute of Research and Rehabilitation of Diabetic, Endocrine and Metabolic Disorder) Hospital from

July'2008 to June'2018. Patients with breast lump with or without single discharging sinus and single breast involvement histologically (done by core biopsy or open biopsy) proved granulomatous mastitis were included in this study. Male patients, lactating mother, patients with diabetes mellitus, tuberculosis or any other disease which causing granulomatous inflammation, bilateral mastitis and failed to follow up to 2 years were excluded from this study. During the study period, 1570 cases of benign breast disease were operated. Of those 82 cases were enrolled. They were divided in two groups by randomization. In Gr-I, 41 patients underwent only wide excision and in Gr-II, same number of patients underwent wide excision followed by with steroid (Prednisolone) therapy. Initially oral Prednisolone, 20 mg was given daily. The dose was then reduced to 10 mg/ day when symptoms improved. Duration of steroid therapy was 6 months. Disease recurrence was defined as reappearance of fistula, skin change like erythema, edema or mass. Each patient was followed up for 2 years. Informed written consent was taken from all patients. This study was approved by ethical committee of BIRDEM Hospital, Dhaka. Analysis was performed by using a computer based statistical program SPSS (Statistical Package for Social Sciences) version 16. Quantitative data were expressed as means \pm SD. 95% confidence interval was calculated and p value of <0.05 was considered as significance.

Results

All patients were divided in four age groups. More patients (48.78%) were found within 41-60 years but a few number patients in extreme age groups (Table-1). The recovery time is shorter in Gr-II (average 167.07 days) in compared with Gr-I (average 253.28 days). (Table-2). Patients who underwent

wide excision only (Gr-I), 49.90% experienced recurrence of disease but only 12.1% patients who received steroid after surgery (Gr-II) had recurrence (Table-3). Among 41 Patients who received steroid therapy, 10 experienced weight gain. None of the patients developed any other side effects.

Table-1. Age distribution of patients

Age(yrs)	Wide excision(Gr-I)		Wide excision+ steroid (GrII)		Total	%	p value
	N	%	N	%			
0-20	1	1.2	0	0	1	1.2	0.30
21-40	18	21.95	19	23.17	37	45.12	0.50
41-60	19	23.17	21	25.64	40	48.78	0.70
61-80	3	3.66	1	1.2	4	4.88	0.30

The differences were not statistically significant ($P > 0.05$).

Table-2. Analysis of recovery time of patients

Age(yrs)	Wide Excision (N=41)Gr-I (Days)	Wide Excision + steroid (N=41)Gr-II (Days)	P value
0-20	54	0	0.07
21-40	243	180.52	0.002
41-60	286	153	0.002
61-80	71	69	0.002
Average	253.28	167.07	0.003

The differences were statistically significant ($P < 0.05$).

Table-3. Analysis of recurrence of disease

Age(yrs)	Wide Excision		Wide Excision+ Steroid		P value
	N	%	N	%	
0-20	1	100	0	0	0.30
21-40	9	50	1	11.11	0.50
41-60	8	42.10	3	14.28	0.50
61-80	0	0	1	11.11	0.30
	18	49.90	5	12.1	0.50

The differences were not statistically significant ($P > 0.05$).

Discussion

Idiopathic granulomatous mastitis (IGM) is a rare benign, chronic, nonspecific granulomatous inflammatory breast disease mostly seen in females at a re-productive age.¹¹ We analyzed the clinical features, disease manifestations, treatment modalities and treatment outcome in each case. We aimed to evaluate the efficacy of wide excision and wide excision with steroid therapy for the treatment of granulomatous mastitis. Patients present most commonly with a painful, firm, tender ill-defined mass in the breast.^{12,13} The lesion may be located in any quadrant of the breast.¹³ Antibiotic was given in all patients until definitive histological diagnosis of granulomatous mastitis was made. In our study, only 5 patients (12.1%) developed recurrence among the 41 patients who were treated with wide excision with steroid therapy. Others did not develop new symptoms or

complications over 2 years of follow up period. In many studies, steroids were used for adjuvant therapy following surgical excision.^{14,15} Wide local excision is the oldest and traditional treatment modality. In our study, recurrence rate was 49.9%. The use of steroid for the treatment of IGM was first proposed by DeHertogh et al in 1980.¹⁶ However, optimum dose and duration of steroid administration has not been established yet. Previous studies suggested an initial treatment dose 30-60 mg/day of prednisolone which was gradually tapered over several weeks. More recent studies have reported favorable outcomes using short term, low dose steroid therapy. In our study, treatment was initiated with a dose 20 mg/day. This was tapered over 1-6 months based on patient's symptoms. There were some studies comparing surgery and steroid therapy for treating granulomatous mastitis. Oran et al reported that steroid therapy group and surgery group showed comparable treatment outcome in view

of recurrence (20% versus 16.7%).¹⁷ Rather, Akahane K et al reported no recurrence in steroid group, whereas maximum recurrence in surgery group.¹⁸

Conclusion

Surgery with steroid is more effective in treatment of idiopathic granulomatous mastitis than surgery alone.

References

1. Kessler E and Wolloch Y. Granulomatous mastitis: a lesion clinically simulating carcinoma. *American journal of clinical pathology* 1972; 58(6): pp.642-646.
2. Baslaim MM, Khayat HA and Al-Amoudi SA. Idiopathic granulomatous mastitis: a heterogeneous disease with variable clinical presentation. *World journal of surgery* 2007; 31(8): pp.1677-1681.
3. Sakurai K, Fujisaki S, Enomoto K, Amano S and Sugitani M. Evaluation of follow-up strategies for corticosteroid therapy of idiopathic granulomatous mastitis. *Surgery today* 2011; 41(3): pp.333-337.
4. Kok KYY and Telisinghe PU. Granulomatous mastitis: presentation, treatment and outcome in 43 patients. *The surgeon* 2010; 8(4): pp.197-201.
5. Larsen LJH, Peyvandi B, Klipfel N, Grant E and Iyengar G. Granulomatous lobular mastitis: imaging, diagnosis, and treatment. *American Journal of Roentgenology* 2009; 193(2): pp.574-581.
6. Imoto S, Kitaya T, Kodama T, Hasebe T and Mukai K. Idiopathic granulomatous mastitis: case report and review of the literature. *Japanese Journal of Clinical Oncology* 1997; 27(4): pp.27-277.
7. Yip CH, Jayaram G and Swain M. The value of cytology in granulomatous mastitis: a report of 16 cases from Malaysia. *Australian and New Zealand Journal of Surgery* 2000; 70(2): pp.103-105.
8. Akcan A, Akyıldız H, Deneme MA, Akgun H and Aritas Y. Granulomatous lobular mastitis: a complex diagnostic and therapeutic problem. *World journal of surgery* 2006; 30(8): pp.1403-1409.
9. Azlina AF, Ariza Z, Arni T and Hisham AN. Chronic granulomatous mastitis: diagnostic and therapeutic considerations. *World journal of surgery* 2003; 27(5): pp.515-518.
10. Heer R, Shrimankar J and Griffith CDM. Granulomatous mastitis can mimic breast cancer on clinical, radiological or cytological examination: a cautionary tale. *The breast* 2003; 12(4): pp.283-288.
11. Özel L, Ünal A, Ünal E, Kara M, Erdoğan E, Krand O, et al. Granulomatous mastitis: is it an autoimmune disease? Diagnostic and therapeutic dilemmas. *Surgery today* 2012; 42(8): pp.729-733.
12. Akcan A, Akyıldız H, Deneme MA, Akgun H and Aritas Y. Granulomatous lobular mastitis: a complex diagnostic and therapeutic problem. *World journal of surgery* 2006; 30(8): pp.1403-1409.
13. Patel RA, Strickland P, Sankara IR, Pinkston G, Many W and Rodriguez M. Idiopathic granulomatous mastitis: case reports and review of literature. *Journal of general internal medicine*, 2010; 25(3): pp.270-273.
14. Eroozen F, Ersoy YE, Akaydin M, Memmi N, Celik AS, Celebi F, et al. Corticosteroid treatment and timing of surgery in idiopathic granulomatous mastitis confusing with breast carcinoma. *Breast cancer research and treatment* 2010; 123(2): pp.447-452.
15. Eroozen F, Ersoy YE, Akaydin M, Memmi N, Celik AS, Celebi F, et al. Corticosteroid treatment and timing of surgery in idiopathic granulomatous mastitis confusing with breast carcinoma. *Breast cancer research and treatment* 2010; 123(2): pp.447-452.
16. DeHertogh DA, Rossof AH, Harris AA and Economou SG. Prednisone management of granulomatous mastitis. *New England Journal of Medicine* 1980; 303(14): pp.799-800.
17. Oran EŞ, Gürdal SÖ, Yankol Y, Öznur M, Calay Z, Tunacı M et al. Management of idiopathic granulomatous mastitis diagnosed by core biopsy: a retrospective multicenter study. *The breast journal* 2013; 19(4): pp.411-418.
18. Akahane K, Tsunoda N, Kato M, Noda S, Shimoyama Y, Ishigaki S, et al. Therapeutic strategy for granulomatous lobular mastitis: a clinicopathological study of 12 patients. *Nagoya Journal of Medical Science* 2013; 75(3-4): p.193.