Our Therapeutic Approach to Idiopathic Granulomatous Mastitis

İdiyopatik Granülomatöz Mastitte Tedavi Yaklaşımımız

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Abstract

Aim: Granulomatous mastitis is a rare disease of the breast. Initial findings during admission can be mistaken for breast cancer. In this study, we aimed to present our experience with idiopathic granulomatous mastitis (IGM).

Materials and Methods: Patients who had been treated and followed up after a diagnosis of GM at the surgical clinic of the Istanbul University Institute of Oncology between 2007 and 2017 were categorized into two groups: those who had received steroid treatment only (Group 1), and those who had received steroids in combination with surgical treatment (Group 2). The groups were compared in terms of clinical and demographic characteristics and recurrence rates.

Findings: We included a total of seventy-nine patients in our study. The mean patient age was 36.41±6.93 years and the mean follow-up 57.34±20.39 months. There was no significant difference between the two groups in terms of mean age, age at menarche, maternal age at first delivery, and the side involved (right, left, bilateral). The disease had recurred in 19 patients in Group 1 while no recurrence had been observed in Group 2 (p=0.001).

Discussion and Conclusion: IGM is a disease that is rare but easily mistakable for breast cancer. The diagnosis necessitates confirmation through a biopsy. Steroid therapy combined with surgery can be the first choice in the treatment of this disease, on which no consensus has yet been reached. Such combination is capable of reducing recurrence rates.

Keywords: granulomatous mastitis; autoimmune diseases

Öz

Amaç: Granülomatöz mastit nadir görülen bir meme hastalığıdır. Müracaat bulguları meme kanseri ile karıştırılabilir. Bu çalışmada idiyopatik granülomatöz mastit (İGM) deneyimimizi sunmayı amaçladık.

Gereç ve Yöntemler: İstanbul Üniversitesi Onkoloji Enstitüsü Cerrahi Polikliniği'nde granülomatöz mastit tanısı ile 2007–2017 döneminde tedavi ve takip edilmiş olan hastalar, sadece steroit tedavisi görmüş olanlar (Grup 1) ve steroit tedavisine ilaveten cerrahi tedavi görmüş olanlar (Grup 2) olarak iki gruba ayrıldı. Gruplar klinik ve demografik özellikleri ile nüks oranları açısından karşılaştırıldı.

Bulgular: Çalışmamız kapsamına toplam 79 hasta alınmıştır. Hastaların ortalama yaşı 36,41±6,93 yıl, ortalama takip süresi 57,34±20,39 ay idi. İki grup arasında yaş ortalaması, ilk adet yaşı, ilk doğum yaşı ve tutulan taraf (sağ, sol, bilateral) yönünden anlamlı fark yoktu. Grup 1'de 19 hastada nüks gözlenirken Grup 2'de hiç nüks gözlenmemişti (p=0,001).

Tartışma ve Sonuç: İGM nadir görülen fakat meme kanseri ile karıştırılabilen bir hastalıktır. Tanıda biyopsi ile teyit şarttır. Tedavisi konusunda henüz konsensüse varılamamış olan bu hastalıkta steroit tedavisiyle cerrahi tedavinin kombine edilmesi ilk tercih olabilir. Bu kombinasyon ile nüks oranları azaltılabilmektedir.

Anahtar Sözcükler: granülomatöz mastit; otoimmün hastalıklar

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INTRODUCTION

Granulomatous mastitis (GM) is a rare disease of the breast that was first identified in the medical literature by Kessler in 1972 (1). Although sarcoidosis and infections such as tuberculosis, histoplasmosis, and coccidioidomycosis are known factors for GM, in most patients diagnosed the etiology cannot be elucidated and the disease is termed as idiopathic granulomatous mastitis (IGM) (1–3).

Generally the patients present with lumps, induration, ulceration, local pain, increased sensitivity, abscesses, or fistulae. Since the condition is most frequently mistaken for breast cancer, it is recommended that the diagnosis be confirmed through a biopsy prior to initiating treatment (4–6).

Besides the difficulties concerning diagnosis, there is also the difficulty that no standard therapeutic modality has yet been established to treat IGM. The various methods include use of large surgical excisions, antibiotics, corticosteroids, or a combination of these (4,7–9).

Corticosteroids appear to be effective in shrinking the lumps, and there are accepted therapeutic approaches based solely on corticosteroid medication (10). The fact that it is highly responsive to corticosteroids is supportive to the hypothesis that GM is essentially an autoimmune disease.

In this study, we aimed to present the clinical characteristics of our patients with IGM as well as our therapeutic approach and findings during the follow-up.

MATERIALS AND METHODS

The data of the patients who had been treated and followed up after a diagnosis of GM at the surgical clinic of the Istanbul University Institute of Oncology between 2007 and 2017 were reviewed retrospectively. In the cases indicating presence of GM on the basis of the patient's anamnesis and physical examination findings, the diagnosis had been confirmed by pathological investigation through a core biopsy. In those presenting with an abscess, an incisional biopsy had been performed together with the drainage. After the diagnostic confirmation, the patients had been screened for the presence of any of the known causes of GM, including tuberculosis and sarcoidosis; only the idiopathic cases where we had failed to identify the cause were included in this study. Following the permitted clinical photography of the involved area, the patients diagnosed with IGM had been commenced on steroid treatment with methylprednisolone (Prednol®, Mustafa Nevzat, Istanbul, Turkey), at a daily dose of 0.5 mg/kg. The patients had been reevaluated after two weeks, and the treatment had been completed in those showing no deterioration after four weeks. The patients had subsequently been put on follow-up and continued to receive steroid medication at a dose gradually lowered in each following week. The patients with ongoing symptoms, showing deterioration, or who had required prolonged follow-up had been operated for large mass excision. Ultrasonography, mammography, or MRI had been chosen in accordance with patient age for radiological imaging, and the investigations had been repeated by use of the same method when clinically required during the follow-up.

We categorized the patients diagnosed with IGM into two groups: those who received steroid treatment only (Group 1), and those who received steroid medication in combination with surgical treatment (Group 2). Wound site infections were not considered recurrence. Only the patients who had needed additional surgical and/or steroid treatment after the completion of the initial regimen were considered recurrent cases.

The patients' clinical, demographic and follow-up data were gathered on Microsoft Excel. The statistical analyses were performed by using the software package SPSS Statistics 24.

RESULTS

Our study included a total of seventy-nine patients. The mean age of the total sample was 36.41±6.93 years. The mean maternal age at first delivery of the patients who had children was 20.79±5.97 years. Almost all (78; 99%) of the patients included were premenopausal. Most of them had a low level of education, only 25 (32%) having graduated from high school or a higher educational institution. The number of the patients who had been smoking was 15 (19%). Detection of a palpable lump was the most common reason for com-

Table 1. Clinical and demographic characteristics

	n (%)
Mean age (±SD)	36.41±6.93
Mean maternal age at first delivery (±SD)	20.79±5.97
Clinical findings	
Rubor	12 (15.2%)
Abscess	13 (16.5%)
Fistula	9 (11.4%)
Lump	45 (57%)
Side involved	
Right	38 (48.1%)
Left	36 (45.6%)
Bilateral	5 (6.3%)
Level of education	
Illiterate	4 (5.1%)
Elementary school graduate	38 (48.1%)
Middle school graduate	12 (15.2%)
High school graduate	21 (26.6%)
University graduate or postgraduate	4 (5.1%)

ing to our clinic, having been the case in 45 (57%) of all patients included (Table 1).

Group 1 consisted of fifty-two patients who had received steroid treatment only and Group 2 twenty-seven patients who had been administered steroids in combination with surgical treatment. There was no significant difference between the groups in terms of mean age, age at menarche, maternal age at first delivery, and the side involved (right, left, bilateral) (p=0.001). The disease had recurred in 19 patients in Group 1 while no recurrence had been observed in Group 2. The nineteen patients had subsequently received additional surgical treatment and experienced no recurrence thereafter (Table 2).

DISCUSSION AND CONCLUSION

IGM is a rare disease, for which a standard treatment has still not been established (4,11–14). Generally the patients present with the clinical manifestation of a lump (15). The literature contains reports of patients with IGM who underwent aggressive mastectomies because the radiological and clinical findings were similar to those in breast cancer. This increases the significance of confirming the diagnosis through a biopsy prior to initiating any treatment (8,16). Accordingly, our therapeutic approach is based on biopsy-confirmed diagnosis in patients with clinically suspicious symptoms and the subsequent planning of the treatment in light of the ensuring biopsy results.

The disease generally manifests in the fourth decade of life (4,8). In our study also, the mean age was 36.41±6.9 years, consistent with the literature.

Surgical treatment is curative when the diseased tissues are excised entirely. In case of extensive involvement, however, breast reconstruction is necessary. Steroid treatment can be considered an option capable of providing shrinkage and thus improving the patient's eligibility for a greater variety of surgical procedures. Although it is easier to control the disease when steroids are administered in higher doses, the frequency of the pharmaceutical side effects also increases with

Table 2. Comparison of the groups

	Group 1	Group 2	p*
Total number of patients	52	27	
Mean age	36.63±6.27	35.96±8.16	0.686
Age at menarche	13±1.25	12.45±0.82	0.198
Number of nullipara	2 (4.8%)	1 (5.3%)	0.392
Mean maternal age at first delivery	20.98±5.90	20.39±6.27	0.733
Number of those who breastfed for <1 year	8 (22.2%)	5 (35.7%)	0.264
Number of smokers	9 (20.9%)	6 (28.6%)	0.352
Side involved			
Right	28 (53.8%)	10 (37%)	0.237
Left	22 (42.3%)	14 (51.9%)	
Bilateral	2 (3.8%)	3 (11.1%)	
Follow-up length (months)	57.34±21.39	57.39±18.39	0.994
Number of recurrent cases	19 (36.5%)	0	**0.001**

*A p-value <0.05 was considered statistically significant.

increased dosage (12). Consistently, the absence of serious side effects due to the low-dose use of steroids is a noteworthy finding in our study. The literature also contains studies where during the IGM treatment steroids were administered topically to avoid their many side effects. Nonetheless, the long-term topical use of steroids can in turn lead to skin conditions, and it is seen that no better results are achieved in terms of recurrence rates when steroids are used topically rather than systemically (17). There is still no established methodology to be followed in evaluating the effects of steroid treatment. Despite the various techniques reported in the literature, the general approach is the reuse of the method used initially during the follow-up procedures (11,18–20). In our study, the patients were followed up by clinical breast examination in addition to the investigation methods determined by patient age and breast density.

The reported rates of recurrence following surgical treatment vary widely in the literature from 5% to 50% (4,21). In our series of patients, the disease recurred in 19 (36.5%) of the patients who received steroid treatment only while no recurrence was observed in those who received steroids in combination with surgical treatment. The mean follow-up reported in the literature varies from 6 to 38 months (17,22–24). In our study, the mean follow-up was 57 months for each group and there was no significant difference between the groups.

There are also studies indicating that IGM is an autoimmune disease and thus can be treated with methotrexate and azathioprine rather than surgically, although in these studies recurrence rates can reach as high as 50% (25). It has been reported that findings indicating systemic autoimmunity such as *erythema nodosum* can, though less frequently, be observed in patients under treatment for IGM. In our study, the nonrecurrence of the disease in the patients who underwent steroid treatment combined with surgery is a fact supporting the implication that it has been effective to have excised the involved breast tissues that could otherwise have been resistant to the steroid medication and triggered autoimmunity. This clinical suggestion, however, is certainly in need of support from studies to be conducted at the molecular level.

In conclusion, IGM is a disease that is rare but easily mistakable for breast cancer. The diagnosis necessitates confirmation through a biopsy. Steroid therapy combined with surgery can be the first choice in the treatment of this disease, on which no consensus has yet been reached. Such combination is capable of reducing recurrence rates.

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