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Research Article

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A Retrospective study on Frequency of Modified Radical Mastectomy and Breast Conserving Surgery and its Association with Breast Cancer Stage in Southwest Iran

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ABSTRACT

To evaluate the frequency of modified radical mastectomy (MRM) and breast conserving surgery (BCS) and its relationship with breast cancer stage. This retrospective study was conducted at Golestan Referral Hospital, located in Ahvaz city, the only cancer center in southwest Iran, between 2004 and 2008.Pathological records from female patients who underwent surgery for breast cancer were reviewed and the MRM and BCS rates were calculated. The statistical analyses were used to assess factors associated with type of surgical treatment and to compare trends in treatment type over the years. A total of 1202 female breast cancer specimens were evaluated. Except of 63 patients who had undergone only biopsy in stage IV disease, a total of 1139 cases had undergone breast cancer surgery in all stages,991pts (87%) were treated with MRM, and148 pts (13%) were treated with BCS. MRM and BCS rates did not differ significantly across the period of study (P= 0.401). But, there was a significant relationship between stage and type of surgery with more BCS in lower stages (P<0.001). This study, in southwest of Iran, demonstrated that although the rate of BCS in early stage of breast cancer is more than other stages, the preferred treatment chosen by surgeons is MRM and BCS is done much lower.

Keywords: Breast conservation surgery (BCS), Modified radical mastectomy (MRM), Breast cancer

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INTRODUCTION

Breast cancer is the most common cancer and the cause of cancer death in women worldwide(1).Based on the latest Iranian national cancer department report, the total number of women registered with breast cancer was 6976 cases during 2007(2). Although several non-invasive techniques have been developed for the treatment of cancers, surgery is the gold standard option for most of life-threatening diseases (3). Surgery for operable breast cancer has evolved a long way since W. Halsted first described this malignancy (4).There is three options for the surgical treatment of early stage breast cancer: (a) breast conserving surgery (BCS) (b) mastectomy with reconstruction and (c) mastectomy alone(5).The choice of BCS or mastectomy depends on the extent of the cancer, the size of the tumor relative to the size of the breast, its location, and the patient's preference(6). Breast conservation therapy is an effective and widely accepted treatment since the 1980s(7, 8). Local tumor excision followed by external beam radiation to the whole breast is a standard of care for patients with first and second stage, based on extensive evidence from randomized trials (9-12).Many factors are known to influence the decision regarding BCS versus mastectomy. There are contraindications usually taken into consideration for BCS: multicentric tumors, inflammatory breast carcinoma, and large tumor in relation to breast size, inability to obtain negative surgical

margins, patient's choice and contraindications for radiotherapy. Other factors are the surgeon's preference, histopathological tumor type, positivity of axillary lymph nodes, healthcare availability, findings from imaging studies and genetic abnormalities(13).Many developed countries have reported decreasing mastectomy rates for early breast cancer (14, 15). There is no available data from Southwest Iran in the medical literature. The aim of this study was to determine the frequency of MRM and BCS and its association with breast cancer stage, at a referral hospital, located in Ahvaz, Southwest Iran**.**

MATERIALS AND METHODS

We retrospectively reviewed medical records of patients with histological diagnosis of breast cancer that had undergone MRM or BCS, at Referral Golestan Hospital in Ahvaz city located in Southwest Iran between 2004 and2008.The study was approved by the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences. Tumor staging was performed in accordance with the American Joint Committee on Cancer (AJCC) Cancer Staging Manual. Breast conserving surgery was defined as partial removal of the breast and axillary lymph node dissection followed by adjuvant radiotherapy. In contrast, an MRM involved complete excision of the breast and an axillary lymph node dissection. Clinical variables of age and year at diagnosis, tumor size, regional lymph node status, were recorded. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) software. A significant statistical difference was considered when P-value was less than 0.05.

RESULTS

A total of 1202 female breast cancer specimens were evaluated. The pts' stage at diagnosis was analyzed (table 1).

Table1.Stage frequency of patients

stage	Pts number	percentage
I	99	8.2
II	529	44
III	456	37.9
IV	118	9.8

Except of 63 patients who had undergone only biopsy in stage IV disease, a total of 1139 cases had undertaken breast cancer surgery in all stages from 2004 to 2008.A total of 991 (87%) of them were treated with MRM, and148 (13%) of them were treated with BCS regardless of disease stage. The total number of surgeries increased over the years, from 153 cases in 2004 to 289 in 2008. MRM surgery increased from 140 cases in 2004to 246cases in 2008.BCS cases increased from 13 in 2004 to 43 cases in 2008. The highest number of patients was in the fifth decade of life(40-49 year old), with 469patients (39%), and the lowest number of patients was in the ninth decade(89-80 years)with4 patients (0.3 %)(table 2).

Table 2. Age frequency of the patients

Age	Frequency	Percentage
20-29	30	2.5
30-39	230	19.1
40-49	469	39
50-59	312	26
60-69	108	9
70-79	49	4.1
80-89	4	0.3

Table3. Frequency of different surgical procedures with respect to disease stage

stage	surgery	frequency	percentage
I	MRM	74	74.7
	BCS	25	25.3
II	MRM	436	82.4
	BCS	93	17.6
III	MRM	430	94.3
	BCS	26	5.7
IV	MRM	51	43.2
	BCS	4	3.4
	BX	63	53.4

In our study, 99(8.2%) of patient had stage I disease at presentation, 529(44%) stage II, 456(37.9%) stage III and 118(9.8%) stage IV. During the 5 years study period, in stage I, MRM and BCS were performed in 74 (74.7%) and

25 (25.3%) patients respectively. In stage II, MRM and BCS were done in 436 (82.4%), and 93 (17.6%) patients respectively. In stage III, 430(94.3%) and 26 (5.7%), patients underwent MRM and BCS respectively. In stage IV, 51 cases (43.2%) underwent MRM and 4 cases (3.4%) underwent BCS (table 3).

From stage I to stage III, MRM rate was increased and BCS rate was decreased significantly (P<0.001).

DISCUSSION

During the last 20 years, the results of several large, randomized, controlled trials have shown that the extent of mastectomy does not influence breast cancer mortality. These studies indicate that women with early stage invasive breast carcinoma can be treated with either breast conservation therapy or total mastectomy.

Other than tumor size and lymph node status, many other factors are known to affect the use of BCS or MRM. Our study analyzed the patients who were underwent breast cancer surgery ata hospital in Southwest Iran that is the only reference center for breast cancer treatment. This study demonstrated that MRM rates decreased from 91.5% in 2004 to 85.2% in 2008, but this decrease was not statistically significant. So, in contrast to some other centers, there is not any meaningful shift from MRM to BCS cases at our center. This may reflect more advanced stages of disease at presentation possibly due to lack of breast cancer screening, surgeons experiences, preferences and slow consolidation of BCS between them, Patients believes, culture and preferences, and the price and limited local availability of radiation therapy. Zorzi et al. (16) reported the higher mastectomy rates in older women. Our patients age distribution seems to be similar to other studies and patient age appear to exert little influence on such a high rate of MRM. The findings of our study are limited by its retrospective method and potential errors and omissions in the database. It was not possible to determine the exact extent of resection in patients receiving BCS from the database. The extent of resection varied between pts.

CONCLUSION

This study shows that although the percentage of BCS in early stage disease is more than other stages, the preferred treatment chosen by most surgeons is MRM and the percentage of BCS is much lower than MRM.

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