Original Article

The Surgical Management of Early Carcinoma Breast

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ABSTRACT

Objective: The purpose of this study was to compare the oncological outcomes of oncologic breast surgery and the conventional breast conservative surgery in the patients with early breast carcinoma.
Study Design: A retrospective study
Place and Duration of Study: This study was conducted at the Surgical Department of Khalifa Gul Nawaz Teaching Hospital Bannu from January 2014 to January 2017 in collaboration with BINOR (Bannu Institute of Nuclear Medicine Oncology and Radiotherapy) and was compiled in August 2021.
Materials and Methods: A total of 220 patients (all females) with early breast carcinoma (T_1, T_2, N_0, N_1 & M_0) with the age ranged from 26-85 years with the mean age 47 years were included in this retrospective study.
Results: Out of the 220 patients with early breast carcinoma (T_1= 90, T2= 130 patients), 160 patients were treated by Modified radical mastectomy (MRM) and 60 patients subjected to Breast conservative therapy/surgery (BCS). After a follow up period of 5 years, there were no significant differences in the overall survival (86.7% vs. 88%, p= 0.62), disease free survival (67% vs. 70%, p= 0. 63) or the mortality (13.3% vs. 11.8%, p= 0.61) of patients treated with breast conservative surgery (BCS) or modified radical mastectomy (MRM) However, there was a significant difference in the rate of local recurrences (32.7% vs. 16.3%, p= 0. 001) of patients treated with BCS or MRM.
Conclusion: BCS is a suitable/standard alternative for MRM in selected cases of early carcinoma breast, with comparable overall survival, disease free survival and mortality rates in BCS and MRM. BCS was associated with increased local recurrences. BCS maintains the quality of life and have a good cosmetic value.
Key Words: Breast conservative therapy/surgery (BCT/BCS), modified radical mastectomy (MRM), follow up, breast carcinoma, lumpectomy, overall survival, disease free survival and recurrence.

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INTRODUCTION

The optimal type of surgery for breast carcinoma continues to be a controversial topic. A revolutionary change in the surgical management of breast carcinoma has occurred during the 20th century, from radical to minimal surgery [1].

The Halstedian`s mastectomy has been the treatment of choice for breast cancer of any size, type or any age of the patients, for 80 years. The results of several trails were published, indicating that the breast conservative surgery plus radiotherapy was a valid alternative for many women.

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By 1985, a consensus report came stating that BCS was a standard alternative for certain patients with early breast carcinoma [2]. Several randomized controlled studies worldwide have demonstrated that BCS and MRM have comparable results [3,4].

Breast conservative therapy (composed of lumpectomy, axillary lymph nodes dissection and radio-therapy) is a well-defined alternative to modified radical mastectomy (MRM) in early breast carcinoma. For those who do not opt for BCS, skin sparing mastectomy with breast reconstruction is a safe technique for better cosmetic outcome without compromising oncological safety [5].

Mastectomy (radical or modified) has been a treatment of historical importance for the stage I & stage II breast carcinoma for decades and still mastectomy is commonly used in secondary and some tertiary care hospitals where radiation facilities are not easily available.

In the Milan Cancer Institute Trails in 1973 showed that mastectomy and breast conservative therapy were equally affective for properly selected patients with early breast carcinomas [6,7]. In Milan 1 trail, the survival benefit was not significant in axiliary lymph node positive patients treated with quadrantectomy and radiotherapy compared with MRM [8]. The overall rate of recurrences in the treated cases with BCS ranged from 3-19%. Most failures in the BCS were salvaged by

mastectomy. Survival after such treatment was 70% at 5 years follow up.

MRM does not immune the patients from local recurrence in stage I & stage II diseases. Local recurrences after mastectomy occurs in 4-14% of the cases. Disease free survival after 10 years is 70% [9].

For patients with negative resection margin, the risk of recurrence is 10% after 10 years follow up [10,11,12].

Sentinel lymph node biopsy (SLNB) has been adopted as an alternative for axillary lymph node dissection (ALND) for staging axilla [13] with improved quality of life in the nodes negative patients.

In UK, a survey revealed 14% decrease in mastectomy and 42% increase in the immediate breast reconstruction [14].

The management of breast cancer has evolved into multidisciplinary evidence based surgical specialty with emphasis on conservative surgery.

MATERIALS AND METHODS

A total of 220 female patients with early breast cancer, with the age ranged from 26-85 years with a mean age of 47 years were included in this study. Information on patients and their treatment was obtained from the hospital record, which included patient age, sex, date of admission and date of discharge. Patients were investigated through ultra-sound, mammography, true cut biopsy and histopathology, CT-chest/abdomen and bone scans. Patients were divided into two groups. Group A was treated by breast conservative surgery and group B by modified radical mastectomy.

Breast conservative surgery included lumpectomy, quadrantectomy or a wide excision with biopsy and level I-II axillary dissection by a separate incision with post op radiotherapy to the whole breast. While in modified radical mastectomy, the whole breast and axillary lymph node dissection to the level I-II was done through the same incision. Patients with positive axillary lymph node were given 12 monthly cycles of chemotherapy 15-30 days after the operation. After a mean follow up of 5 years, there were no significant differences in the overall survival, disease free survival and mortality in the patients treated by MRM or BCT. However, there was a great difference in the local recurrences rate between the two. BCT was performed in 60 cases and MRM in 160 cases of early breast carcinoma.

Follow Up: patients were advised to attend surgical OPD or clinic every 3 months during the first year, every 6 months during the next 2 years and yearly during the next 2 years. During each visit, patients physical examination, chest and skeleton radiography, ultra-sound abdomen and mammography were done for the detection of recurrences or metastases.

Statistical Analysis: The overall survival curves for each treatment group were obtained using Kaplan-Meier method and compared by the log rank test. Outcome analyses were conducted by SPSS version 20. Statistical analysis for significance between the variables was performed by the student t test, Fischer`s exact test and chi-square test. Significance was set at $p< 0.05$.

RESULTS

A total of 220 patients with early breast carcinoma, with age 26-80 years (mean 47yrs) were included in this study. 160 patients underwent modified radical mastectomy (MRM) and the remaining 60 patients had breast conservative surgery.

Table No.1: Patients Characteristics

Characteristics	MRM (160)	BCS (60)
Age (mean yrs)	45 year	40 year
< 40	35	15
40-50	50	25
51-60	55	15
>60	20	5
Histology		
Infiltrating ductal Ca breast	95%	98%
And others	5%	2%
Positive lymph nodes		
0	62	30
1-4	50	20
5-9	30	5
> 9	18	5
Tumour size		
< 2cm	70	35
2-4cm	60	20
≤5cm	30	5
Estrogen receptors		
Negative	70	20
Positive	60	25
Unknown	30	15

Table No.2: The Survival Figures for BCS & MRM after a 5 Years Follow Up.

	Number of cases	Alive	Alive with no evidence of disease	Alive with disease
BCS	60/220	52/60	41/52	11/52
MRM	160/220	141/160	116/141	25/141

Table No.3: Recurrences after 5 Years of Follow Up

	MRM (160 cases)	BCS (60 cases)
Local	3	10
Regional	4	2
Distant	16	5
Total	23/160	17/60

The overall survival rate for BCS was 86.7% while it was 88% for MRM (p= 0.62). The mortality rate for BCS was 13.3% while it was 11.8% for MRM (p= 0.61). The recurrence rate for breast conservative surgery (BCS) was 32.3% while it was 16.3% for modified radical mastectomy (p= 0.001). The disease free survivals between BCS and MRM were comparable between the patients of the two groups (67% vs. 70%, p= 0. 63).

Table No.4: Overall Survival, Disease free Survival and Mortality after 5 Years Follow Up

Overall survival		
MRM	88%	P= 0.62
BCS	86.7%	
Disease free survival		
MRM	70%	P= 0.63
BCS	67%	
Recurrence		
MRM	16.3%	p= 0.001
BCS	32.7%	
Mortality		
MRM	11.8%	p= 0.61
BCS	13.3%	

The 10 patients of local recurrence in the BCS group were treated by salvage MRM. In the MRM group the incidence of local recurrence was low and was not affected by the size of tumour or the age of the patient. The rate of recurrences was more in the women containing more than 3 positive axillary lymph nodes.

All the patients with positive axillary lymph nodes were given chemo-therapy. In the MRM group chemo-therapy was started 15-30 days after the operation while patients of BCS group, chemotherapy was started simultaneously with radiotherapy. For radio chemotherapy patients were referred to BINOR.

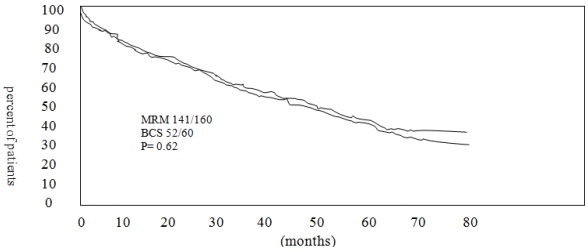

Figure No.1: Comparison of overall survival between MRM & BCS.

DISCUSSION

Breast conservative surgery is practiced in larger, teaching and urban hospitals where radiation facilities are available. Early stage (stage I & stage II) breast carcinomas are usually treated by breast conservative surgery [15,16]. But patient choice and surgeon judgment is required to select a patient for either breast conservative surgery or modified radical mastectomy. Black women with breast cancer have poor overall survival than white ones and breast conservative surgery is less commonly used for them.

6 randomized trials worldwide have shown comparable results between MRM and BCT in the term of overall survival and disease free survival [17-20]. Our study showed that the results of overall survival, disease free survival and mortality were almost the same in the patients treated by breast conservative surgery and modified radical mastectomy. There were more recurrences in the BCS than MRM after a 5 years follow up.

The rate of loco-regional recurrences was significantly higher in those who underwent BCS without radiation[17]. Inspite of the higher local recurrence rate in the BCS, there was no statistically significant difference in the long term survival. BCS is contraindicated in, a relatively small breast containing a large tumour, previously treated breast for malignancy, breast tumour with distant metastases and the presence of contra lateral breast carcinoma.

In our study we noticed that old age patients mostly opted for MRM as opposed to BCS which is in agreement to the other studies [21,22]. We also noticed that there was a persistent decrease in the incidence of local recurrence with the age.

Old age patients with lymph node negative and estrogen receptor positive status were put on Temoxifen 20mg daily for 3 years. Tumour size and palpability were associated with MRM as indicated in the other studies [15,16]. Lobular histology was associated with MRM in most of the cases. Patients with positive surgical margins and those female with central breast tumour required MRM as shown in the European studies [23].

Women should be fully informed of the treatment, its implications in both mastectomy and breast conservative surgery i.e. for the potential need for additional surgery and radio-therapy.

The risk factors for local recurrence included; young age, positive surgical margins, axillary lymph node positivity, negative estrogen receptors and absence of radio-therapy. Positive margins are associated with 2 fold increase in local recurrence[24]. 6 randomized controlled studies have established an absolute survival benefit with axillary lymph node dissection ranging from 4-16% which corresponds to 7-46% reduction in the risk of death.

Axillary lymph node dissection is the current standard of surgical care and in planning of adjuvant treatment. Axillary lymph node dissection to level I-III may result in lymph oedema upper limb.

Sentinel lymph node biopsy is a standard conservative care for assessing the axilla. Skin and nipple sparing mastectomies are being used in patients with less favorable tumour characteristics.

CONCLUSION

There is a continuous trend for innovation in the surgical management of breast carcinoma. Advances in the surgical management of breast Carcinoma have favored an increasingly the conservative approach. In this article we have reviewed the current trends in the management of breast Carcinoma. More efforts are required to improve public awareness and knowledge

about the Carcinoma breast for early detection and treatments.

Author's Contribution:

Concept & Design of Study:	Gul Sher Khan
Drafting:	Asif Mehmood
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Revisiting Critically:	Gul Sher Khan
Final Approval of version:	Gul Sher Khan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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