

IMPACT OF BREAST CONSERVATION SURGERY VERSUS THE MODIFIED RADICAL MASTECTOMY ON THE QUALITY OF LIFE AMONG BREAST CANCER SURVIVORS IN PAKISTAN

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ABSTRACT

Objective: To compare quality of life (QoL) of patients who received Breast conservation surgery (BCS) to those who underwent Mastectomy.

Study Design: A comparative study.

Place and Duration of Study: The study took place at Pakistan Institute of Medical Sciences, Islamabad, from Aug 2018 to Sep 2019.

Methodology: A comparative study using non probability sampling technique was conducted at Pakistan Institute of Medical Sciences. Quality of life was assessed using a QOL-CSV to evaluate the physical, psychological, social, spiritual well-being as well as distress and fear factors. Data was analyzed using SPSS software 20 and chi square test was applied.

Results: Out of a total of 50 cases with mean age of 50.14 ± 4.8 years in Breast conservation group (BCS) and 166 cases with mean age of 54.7 ± 6.3 years were there in mastectomy group. In BCS group there were moderate scores in physical, social, and psychological well-being as well as in fear factor and distress of diagnosis. No comparable difference was observed between both groups with respect to physical, psychological, or spiritual wellbeing, distress score and fear factor. However significant difference was found in the quality of life regarding social concerns.

Conclusion: Breast conservation surgery was associated with significant improvements in quality of life scores in terms of social and psychological well-being, with comparable physical and spiritual wellbeing in study population.

Keywords: Breast conservation surgery, Mastectomy, Quality of life.

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INTRODUCTION

According to recent reports, Pakistan has the highest rate of Breast Cancer compared to other Asian countries with approximately one million new cases being reported annually; out of these about forty thousand patients die¹. It is further speculated that about every ninth women will be expected to develop breast cancer at least once in her life². Earlier data showed that breast cancer was the most frequent cause of cancer in females in Pakistan, accounting for about one-third of the overall cancers³. A recent study reported that breast cancer accounts for approximately 49.5% of all cancers in women in Karachi, the largest city of Pakistan⁴.

Current progress and development in the diagnosis and the management of breast cancer, it is still associated with substantial morbidity and mortality. The breast cancer places a considerable financial, emotional and physical strain on the family and the patient. Despite the advancement in the treatment modalities, it remains a significant burden on the health-care sector⁵.

Current treatment options for localized breast cancer include either modified radical mastectomy (MRM) or breast conserving surgery followed by chemotherapy or radiotherapy⁶. A modified radical mastectomy (MRM) is a procedure in which the entire breast is removed; including the skin, areola, nipple, and most axillary lymph nodes, but the pectoralis major muscle is spared⁷. Breast conserving surgery (BCS) is defined by the surgical procedure that involves excision of the

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cancerous part of the breast while preserving the disease-free part of the breast. BCS consists of the following procedures; lumpectomy, wide local excision, segmental resection, tylectomy, and quadrantectomy⁸.

Many researchers have compared the patient outcomes including the recurrence rate, and the survival rates between the two treatment options; however how these two treatments affect the quality of life of patients who undergo either MMR or BCS has not been explored thoroughly.

The breast cancer surgery can have drastic effect on patient's perception about her body image aside from the associated physical, psychological and emotional affliction which can significantly reduce the quality of life (QoL) of the patient post-surgery subsequently lowering the effectiveness of the treatment as claimed by Rosenberg and Marshall Gold^{9,10}.

The objective of the present study was to assess the quality of life of breast cancer patients who underwent breast conservation surgery compared to those who received modified radical mastectomy in the hopes of determining which of the two treatment modalities causes the least damage to the quality of life of the patient.

METHODOLOGY

A comparative study was conducted at the Department of General Surgery, Pakistan Institute of Medical Sciences Islamabad from August 2018 to September 2019 for a period of one year. Non-probability consecutive sampling technique was used to enroll patients, with a total of 50 patients who had undergone BCS were put in one group and 166 patients who had received Mastectomy were added in the second group. Patients who had completed their treatment for CA breast (BCS or mastectomy along with adjuvant chemotherapy or radiotherapy) at least 2 months prior to the inception of the study were eligible to participate in the study. Patients who were still under treatment or received treatment (surgery and adjuvant chemotherapy or radiotherapy) <2 months ago or >2 years ago were excluded from the study. After obtaining approval from hospital

ethical review board (reference number 1-1/205/ERB/SZABMU/240) a written informed consent was obtained from participants presenting in follow up after completion of their treatment (surgery and adjuvant chemo/ radio therapy) to Out Patient Department of General Surgery. Bio data of each participant was obtained by the researcher which included age, gender, profession, stage of disease at diagnosis, type of treatment received and time since treatment.

Participants were interviewed using standardized questionnaire (QOL-CSV) to assess quality of life which included questions about physical well-being, psychological wellbeing, distress factors, fear factors score, social wellbeing and spiritual wellbeing. Questions about how difficult it is to cope as a result of disease and treatment, changes in appearance after treatment, self concept, current level of happiness, how much one feel that one's life is in control, difficulty in remembering or concentrating were asked to assess psychological well-being.

Data thus obtained was entered in SPSS version 20 and frequency with percentages and mean \pm SD were calculated. Tests of statistical significance including chi square and t-test were applied, keeping confidence level 5 and confidence interval to be 95%. Data was then presented in the forms of figure and tables.

RESULTS

There were a total of 50 participants who had received BCS and 166 who had undergone Mastectomy. A mean age of 50.14 ± 4.8 years in BCS group and of 54.7 ± 6.3 years in Mastectomy group was observed. Most of the participants receiving Mastectomy presented at stage 3 of the disease 110 (66.2%) whereas in BCS group most participants had stage 2 at presentation 30 (60%). In BCS group 46 (92%) participants had received treatment less than 6 months ago whereas most of the Mastectomy cases were interview 6 months to 1 year after receiving treatment (table-II).

Amongst the BCS group, physical well-being score was moderate with 80% participants scoring between 40 and 50 out of 80. Psychological

well-being score was even better with majority (76%) having a score of 50-60 out of 80. Distress of diagnosis and treatment was moderate with none having QoL score more than 17 out of 50. Fear factor scored moderate with 88% participants having QoL score between 20 and 30. For 98% respondents Social well-being QoL score

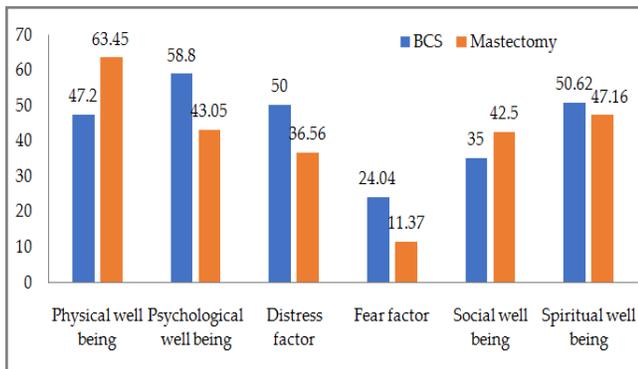


Figure: Comparing QoL of Breast conservation surgery group with Mastectomy group.

was 30-40 out of 80. Spiritual well-being score was high with 52% participants reporting score of more than 50 out of 70.

In Mastectomy group physical well-being score was high with 41.6% participants having a score of 61-70 out of 80. Psychological analysis showed moderate score with most participants

In the current study it has been observed that there was no significant difference observed in the physical symptoms and functional status of participants in both groups. Psychological well-

Table-I: Demographics and clinical characteristics of study participants.

Variable	Breast Conservation Surgery Group (n=50)	Mastectomy Group (n=166)
Age (Year)		
Mean ± SD	50.14 ± 4.8	54.7 ± 6.3
Marital Status		
Unmarried	2 (4%)	8 (4.8%)
Married	48 (96%)	158 (95.2%)
Age at Diagnosis (Year)		
Mean ± SD	49.30 ± 5.4	53.9 ± 3.3
Tumor Grade		
Grade I	-	-
Grade II	29 (58%)	92 (55.4%)
Grade III	21 (42%)	74 (44.6%)
Tumor Stage		
Stage I	3 (6%)	-
Stage II	30 (60%)	48 (28.9%)
Stage III	7 (14%)	110 (66.2%)
Stage IV	10 (20%)	8 (4.8%)

being had a better mean value in BCS group however; the difference was not statistically significant. Similarly, fear and distress were almost equ-

Table-II: Mean quality of life scale scores for both Breast conservation group and mastectomy group.

Item	Breast Conservation Group (Mean Score)	Mastectomy (Mean Score)	p-value
Physical wellbeing score	47.20 ± 3.97	63.45 ± 9.64	0.396
Psychological wellbeing score	58.80 ± 2.74	43.05 ± 7.04	0.170
Distress factor score	50.00 ± 2.77	36.56 ± 6.56	0.309
Fear Factor score	24.04 ± 2.75	11.37 ± 8.29	0.537
Social wellbeing score	35.00 ± 3.37	42.57 ± 8.44	0.175
Spiritual wellbeing score	50.62 ± 2.96	47.16 ± 6.27	0.008

(65.1%) scoring 41-50 out of 90. Distress levels associated with diagnosis and treatment were high, with most of the participants (46.4%) reporting score of 30-40 out of 50. Fear factor was moderate with 52.4% 11-30 on a scale of 40. Social concerns scored moderately with highest number (42.7%) of respondents scoring 41-50 out of 80. Moderate scoring was observed in Spiritual well-being with 68.7% participants having scored less than 50 out of 70 as shown in figure.

ally present in both the groups. The most striking difference was noticed in the social wellbeing of the participants with those receiving BCS reporting better personal relationship, less interference in work, positive feeling regarding sexuality and all these factors contributed in improved quality of life with respect to social outcomes.

There was no comparable difference observed between BCS and Mastectomy group with respect to physical wellbeing ($p=0.396$), psycho-

logical wellbeing ($p=0.170$), distress score ($p=0.309$), fear factor ($p=0.537$) or spiritual wellbeing ($p=0.175$). However significant difference was found in QoL regarding social concerns (personal relationships, sexuality, employment, personal isolation) with $p=0.008$ as shown in table-II.

DISCUSSION

It is crucial to evaluate the impact of breast conserving surgery on the quality of life compared to mastectomy as it would help the oncologists to decide on the optimum treatment modality for their breast cancer patients¹¹.

In a similar study conducted at China¹², researchers found that patients undergoing conservative surgeries had easier social adjustment, while rest of parameters showed no significance difference. These findings are similar to current study. Wahid *et al* reported better body image and sexuality in conservative surgeries than after mastectomy in Indonesian population however there was a generalized decrease in social interaction¹³.

Al-Ghazal *et al* claimed that breast conserving surgery was associated with greater satisfaction and psychosocial well-being in patients compared to mastectomy and reconstruction¹⁴. Nonetheless, they utilized the hospital anxiety depression scale, the body image scale and the Rosenberg self-esteem scale to compare the two treatment modalities thus explaining the differences between their findings and ours where a quality of Life tool specific for cancer survivor was used.

In Brazil¹⁵ it was reported that there was significant difference in the physical functioning and social interaction scoring with better QoL reported in conservation surgery group, especially in younger population and educated participants. Krzos *et al*¹⁶ reported from Poland that better aesthetic outcomes resulted in improved QoL in terms of psychosocial parameters in all stages of observation.

A meta-analysis conducted in 2019¹⁷ included 10 studies from US, Singapore, Vietnam and

China also concluded that there was improvement in body image and future perspectives with decreased systemic side effects in BCS group.

In India¹⁸ a cohort conducted over a 1 year long period at Mumbai determined that no significant difference was noticed in long term QoL in mastectomy and breast conservation surgery cases and advocated Mastectomy as a safe and efficient surgical option in Indian population.

Researchers from Texas¹⁹ reported that difference in QoL amongst BCS and Mastectomy groups become evident long time after surgery only and proper counselling can help improving psychosocial issues of the patients.

In conclusion, the present study suggests that there is no significant difference between Mastectomy and BCS pertaining to the quality of life. Both treatment modalities offer impairment to the quality of life following surgery. Additionally, patients who received the breast conserving surgery were more satisfied with their social wellbeing, reporting better personal relationships, leading to improved quality of life with respect to social outcomes.

CONCLUSION

BCS showed significant improvement in QoL in terms of social wellbeing of the patient, better psychological wellbeing and comparable physical and spiritual wellbeing in our participants. Although selection of mastectomy or BCS is patient's choice but BCS should only be offered where indicated and to those patients who can understand the choices and are willing for regular follow up. Appropriate counselling must be provided to patients and their families (where and if relevant) before surgery. Support groups and insurance plans can help improve QoL further.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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