MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.36478/makrjms.2024.10.249.253

OPEN ACCESS

Key Words
Mastectomy, quality of life, surgical outcomes

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Received: 09 July 2024
Accepted: 12 August 2024
Published: 16 September 2024

Citation: Umesh Ramchandra Kakade, Priyadarshi D. Ghodake, Sudhanshu Satish Rane and Abhinav Patel, 2024. Surgical Outcomes and Quality of Life in Breast Cancer Patients Following Mastectomy. Res. J. Med. Sci., 18: 249-253, doi: 10.36478/makrjms.2024.10.249.253

Surgical Outcomes and Quality of Life in Breast Cancer Patients Following Mastectomy

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ABSTRACT

Breast cancer remains a leading cause of morbidity and mortality worldwide, with mastectomy being a common treatment modality. Understanding the surgical outcomes and subsequent quality of life (QoL) in patients post-mastectomy is crucial for improving care and support systems. This cross-sectional study involved 160 breast cancer patients who underwent mastectomy at BKL Walawalkar Rural Medical College hospital. Data were collected through patient interviews and medical records to assess surgical outcomes and QoL. The study highlighted significant correlations between surgical techniques, postoperative care, and quality of life metrics. Early rehabilitation and ongoing psychological support were associated with improved QoL outcomes. Enhanced surgical approaches and comprehensive postoperative care are critical to improving the quality of life in breast cancer patients after mastectomy. This study underscores the importance of holistic care in breast cancer treatment protocols

INTRODUCTION

Breast cancer is the most prevalent cancer among women worldwide, impacting millions each year with varying outcomes based on demographic and treatment modalities. Mastectomy, involving the removal of one or both breasts, is a common surgical intervention aimed at treating or preventing breast cancer. While effective in managing the disease, the implications of mastectomy extend beyond physical health, significantly affecting the patient's psychological well-being and overall quality of life (QoL)[1,2].

The psychological aftermath of mastectomy can be profound. Studies have shown a variable impact on QoL, with factors such as age, cultural background, and support systems playing critical roles in patient outcomes. Moreover, advancements in surgical techniques and postoperative care have been hypothesized to improve QoL, making it imperative to continuously evaluate these outcomes to optimize treatment protocols[3,4].

Aims and Objectives: To evaluate the impact of surgical outcomes on the quality of life in breast cancer patients post-mastectomy.

- To assess the quality of life in breast cancer patients after mastectomy.
- To correlate surgical techniques and immediate postoperative care with QoL outcomes.
- To identify demographic and psychosocial factors influencing QoL post-mastectomy.

MATERIALS AND METHODS

Source of Data: Data were retrospectively collected from medical records and patient interviews conducted at at BKL Walawalkar Rural Medical College hospital.

Study Design: A cross-sectional study design was employed to assess the impact of mastectomy on the quality of life among breast cancer patients.

Study Location: The study was conducted at BKL Walawalkar Rural Medical College hospital.

Study Duration: Data were collected from January 2022 to December 2023.

Sample Size: A total of 160 breast cancer patients who underwent mastectomy were included in this study.

Inclusion Criteria:

- Female breast cancer patients aged 18 and above.
- Patients who had undergone mastectomy as a treatment for breast cancer.
- Patients who consented to participate in the study.

Exclusion Criteria:

- Patients with recurrent breast cancer.
- Patients who underwent breast-conserving surgery or reconstructive surgery.
- Patients with concurrent malignant diseases.

Procedure and Methodology: Patients were interviewed using standardized questionnaires to assess their quality of life post-surgery. Medical records provided data on surgical outcomes and patient demographics.

Sample Processing: No biological samples were processed as the study relied on patient-reported outcomes and medical record reviews.

Statistical Methods: Data were analyzed using SPSS software. Descriptive statistics, Chi-square tests and multiple regression analyses were conducted to examine the relationships between surgical outcomes, demographic factors and QoL.

Data Collection: Data were collected through direct interviews and electronic medical records review, focusing on variables such as age, type of mastectomy, postoperative complications and QoL scores.

RESULTS AND DISCUSSIONS

Table 1: Impact of Surgical Outcomes on Quality of Life Post-Mastectomy

Outcome Variables	Improved QoL n(%)	Unchanged/ Worsened QoL n(%)	OR (95%CI)	p-value
Surgical Complications	20 (25%)	40 (50%)	0.33 (0.18-0.61)	<0.01
Pain Management Adequacy	50 (62.5%)	30 (37.5%)	2.80 (1.52-5.16)	<0.01
Aesthetic Satisfaction	45 (56.25%)	35 (43.75%)	1.67 (0.95-2.93)	0.07

Table 1 elucidates the direct impact of surgical outcomes on QoL. It shows that patients experiencing surgical complications reported worsened QoL, evidenced by a lower odds ratio (OR=0.33) with a statistically significant P value (<0.01). Conversely, adequate pain management significantly improved QoL (OR=2.80., P<0.01). Aesthetic satisfaction also showed a positive impact, though it was not statistically significant (OR=1.67., P=0.07).

Table 2: Quality of Life in Breast Cancer Patients After Mastectomy

QoL Aspects	Satisfied n(%)	Unsatisfied n(%)	OR (95%CI)	p-value
Overall Well-being	70 (43.75%)	90 (56.25%)	0.61 (0.37-0.99)	0.046
Physical Health	80 (50%)	80 (50%)	1.00 (0.61-1.63)	0.99
Emotional and Mental Health	60 (37.5%)	100 (62.5%)	0.37 (0.23-0.59)	<0.01

Table 2 delves into the overall QoL post-mastectomy. Emotional and mental health was significantly impacted, with a majority of patients reporting dissatisfaction (OR=0.37., P<0.01). The overall well-being of patients was somewhat better, with a

marginal positive impact on QoL (OR=0.61., P=0.046). Physical health, however, did not show any significant difference post-surgery (OR=1.00., P=0.99).

Table 3: Correlation Between Surgical Techniques and Immediate Postoperative Care with QoL Outcomes

Factor	Positive Impact n(%)	Negative Impact n(%)	OR (95%CI)	p-value
Minimally Invasive Surgery	65 (40.62%)	15 (9.37%)	6.47 (3.40-12.32)	<0.01
Immediate Physiotherapy	55 (34.37%)	25 (15.62%)	3.04 (1.65-5.62)	<0.01
Comprehensive Patient Education	75 (46.87%)	15 (9.37%)	8.39 (4.58-15.37)	<0.01

Table 3 highlights how specific surgical techniques and immediate postoperative care correlate with QoL outcomes. Minimally invasive surgery was highly beneficial (OR=6.47., P<0.01), as were immediate physiotherapy (OR=3.04., P<0.01) and comprehensive patient education (OR=8.39., P<0.01), all indicating that these factors substantially improve postoperative QoL.

Table 4: Demographic and Psychosocial Factors Influencing QoL Post-Mastectomy

Factor	Positive Impact n(%)	Negative Impact n(%)	OR (95%CI)	p-value
Age < 50 years	60 (37.5%)	40 (25%)	2.25 (1.27-3.98)	0.005
Strong Social Support	85 (53.12%)	25 (15.62%)	6.13 (3.32-11.29)	<0.01
Psychological Counseling	75 (46.87%)	35 (21.87%)	3.21 (1.84-5.60)	<0.01

Table 4 focuses on the demographic and psychosocial factors influencing QoL. Younger patients (age <50) reported better QoL (OR=2.25., P=0.005) and strong social support significantly enhanced QoL (OR=6.13., P<0.01). Psychological counseling was also a crucial factor, showing a considerable positive effect on QoL (OR=3.21., P<0.01).

Our findings indicate that surgical complications significantly reduce quality of life (QoL), which is consistent with previous research. A study by Konara Mudiyanselage[5] found that post-surgical complications had long-lasting negative impacts on patients' QoL due to ongoing pain and aesthetic dissatisfaction. Our study also highlights the positive impact of effective pain management on QoL, aligning with findings from Diao[6], who reported that comprehensive pain management post-mastectomy enhances overall recovery and satisfaction. The significance of aesthetic outcomes found in our study is mirrored by the research of Konieczny[7], though they noted a statistically significant correlation which we found to be marginally significant.

Our data showed a notable discrepancy in emotional and mental health post-mastectomy, which is a significant finding similar to the results presented by Cammarota[8]. They emphasized the psychological burden post-mastectomy, which often outweighs the physical challenges. The minimal impact on physical health we observed correlates with the findings from Barkar[9], where physical recovery was facilitated by advanced surgical techniques and effective physical therapy, although the emotional recovery lagged behind.

The significant improvement in QoL with minimally invasive surgery found in our study aligns with the research by Vieira[10], which highlighted reduced pain and quicker recovery as key benefits. Immediate physiotherapy and comprehensive patient education also showed strong positive effects, supporting the studies by Githa[11] and Senoga[12], respectively, which advocate for these interventions as critical components of postoperative care to enhance QoL.

Our findings regarding the positive impact of younger age and strong social support on post-mastectomy QoL are corroborated by the research from Palmquist[13], who identified age and social networks as critical determinants of recovery outcomes. The role of psychological counseling in improving QoL is well-documented by Cogliandro[14], emphasizing its necessity in the holistic treatment of breast cancer patients.

CONCLUSION

The study underscores the profound impact that various aspects of the surgical experience can have on the quality of life (QoL) for breast cancer survivors. Our findings delineate a clear correlation between surgical techniques, postoperative care and patient support systems, all contributing significantly to the overall QoL post-mastectomy.

Firstly, the study highlighted the detrimental effects of surgical complications on QoL, underscoring the necessity for meticulous surgical planning and execution to minimize these risks. Effective pain management emerged as a crucial factor, greatly enhancing QoL and facilitating smoother recovery phases for patients. Moreover, aesthetic satisfaction, though not statistically significant, was observed to have a positive influence on QoL, indicating the importance of considering patient perceptions and expectations in surgical planning.

The role of minimally invasive surgical techniques was particularly notable, offering substantial benefits in terms of reduced recovery time and improved physical outcomes, thereby positively influencing QoL. Immediate physiotherapy and comprehensive patient education further supported these findings, suggesting that proactive postoperative care is essential for optimal recovery and satisfaction.

Demographic and psychosocial factors also played critical roles in determining QoL outcomes. Younger patients tended to report better QoL post-mastectomy, possibly due to faster physical recovery and adaptive coping strategies. The importance of a strong social support network and access to psychological counseling cannot be overstated, as these were found to significantly enhance QoL by providing emotional sustenance and

coping mechanisms during the recovery process. In conclusion, this study reinforces the imperative for a holistic approach to breast cancer treatment, one that extends beyond the surgical procedure itself to include comprehensive postoperative care and robust support systems. Ensuring meticulous surgical technique, offering tailored pain management strategies and providing extensive patient education and psychosocial support are key to improving the quality of life for breast cancer patients undergoing mastectomy. This integrated approach not only addresses the physical aspects of recovery but also the emotional and psychological challenges, leading to a more rounded and satisfactory patient experience.

Limitations of Study:

- **Cross-sectional Design:** The cross-sectional nature of the study limits the ability to infer causality between surgical outcomes and quality of life. Longitudinal studies would be more effective in observing changes over time and establishing a causal relationship.
- **Sample Size and Diversity:** Although the study included 160 participants, this sample size may still be too small to generalize findings across all breast cancer patients undergoing mastectomy, especially considering the diversity in patient backgrounds, cancer stages, and individual health conditions.
- **Subjective Measures of Quality of Life:** Quality of life was assessed using self-reported measures, which can introduce bias as these are subjective and can vary widely among individuals based on personal expectations and psychological state.
- **Lack of Comparison Group:** The study did not include a comparison group of patients who underwent breast-conserving surgery or no surgery at all, which would provide a broader context for understanding the specific impacts of mastectomy on quality of life.
- **Single-Center Study:** Data were collected from a single medical center, which may not represent broader, diverse surgical practices and patient care protocols that could influence outcomes differently.
- **Variability in Surgical and Postoperative Care:** The study did not account for the variability in the technical proficiency of surgeons, types of mastectomy performed and differences in postoperative care protocols, which can all significantly affect surgical outcomes and subsequent quality of life.
- **Psychosocial Variables:** Although some psychosocial factors were considered, the study might not have captured all relevant aspects, such as cultural attitudes towards mastectomy, personal resilience and pre-existing mental health conditions, which could influence quality of life outcomes.
- **Follow-up Duration:** The follow-up period was not specified and longer follow-up might be needed to fully understand the long-term impacts of mastectomy on quality of life.

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