

Clinicopathological Profile and Surgical Outcomes of Patients with Carcinoma Breast Undergoing Modified Radical Mastectomy: A Cross-Sectional Study

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Abstract

Background: Breast carcinoma is the most common cancer among women worldwide and one of the leading causes of cancer-related mortality. Modified radical mastectomy (MRM) still continues to be one of the most common surgical procedures performed for operable breast cancer especially in the developing countries where patients present with locally advanced disease. Knowing the clinicopathological features and postoperative outcomes of these patients would improve the surgical care and long-term prognosis.

Objective: To assess clinicopathological profile and surgical outcomes in carcinoma breast patients undergoing modified radical mastectomy.

Materials and Methods: The present hospital based cross sectional study consisted of 80 patients of histopathologically confirmed breast carcinoma who underwent modified radical mastectomy in a period of 12 months. Demographic data, clinical presentation, tumor characteristics, histopathological findings, lymph node status, receptor status, postoperative complications, duration of hospital stay and early surgical results were recorded in a structured proforma. Statistical analysis was conducted using SPSS version 26. Continuous variables were expressed as mean $\pm$ standard deviation, categorical variables as frequencies and percentages. A p-value < 0.05 was considered statistically significant.

Results: The patients' mean age was 52.6 ± 11.4 years. The largest share (56.3%) fell to the age group 41–60 years. The study population was composed of 98.8% female patients. The commonest presenting complaint was painless breast lump (91.3 per cent). The most common site of the tumor was upper outer quadrant (58.8%). 87.5% of cases were invasive ductal carcinoma. Stage II disease was present in 47.5% of patients followed by stage III disease (35.0%). An axillary lymph node metastasis was detected in 61.3 % of the patients. The estrogen receptor was positive in 65.0% of patients, the progesterone receptor in 57.5%, and HER2 in 26.3% . The most frequent postoperative complication was seroma formation (15.0%), followed by surgical site infection (8.8%). Mean postoperative hospital stay was 7.4 ± 2.1 days. Overall surgical results were good in 90.0% of patients.

Conclusion: Modified radical mastectomy is a safe and effective surgical procedure for carcinoma breast with an acceptable postoperative morbidity. Early diagnosis, timely operation and multidisciplinary comprehensive management are crucial for better clinical outcomes.

Keywords: Breast Carcinoma; Modified Radical Mastectomy; Clinicopathological Profile; Surgical Outcomes; Breast Cancer; Axillary Lymph Node.

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Introduction

Breast cancer is the most common cancer among women worldwide and still a major public health problem due to the increasing incidence and mortality. Recent global estimates of cancer suggest that breast cancer is now the most frequently diagnosed cancer in the world, surpassing lung cancer, with an estimated 2.3

million new cases per year and a large proportion of cancer deaths in women.[1] Although survival has improved in developed countries due to the introduction of screening programs and targeted therapies, in low- and middle-income countries, the diagnosis is often delayed, resulting in presentation at a more advanced stage.[2] In India, breast cancer

incidence has been steadily increasing over the last two decades, particularly in urban populations. It is the most common cancer among Indian women and is increasingly affecting younger age groups. Socioeconomic differences, lack of awareness, absence of organized screening programs, and delay to health care lead to advanced disease at presentation and poorer clinical outcomes.[3]

Modified radical mastectomy (MRM) has become the standard surgical treatment for patients requiring complete breast removal with preservation of the pectoralis major muscle. The standard surgical treatment for patients needing complete breast removal with preservation of the pectoralis major muscle, first popularized by Patey and Dyson, is the modified radical mastectomy (MRM). The procedure provides excellent local control of disease with less morbidity than radical mastectomy and remains the surgical procedure of choice for patients with locally advanced tumors, multicentric disease, large tumors in relation to breast size, recurrent disease and patients not suitable for breast conserving surgery.[4]

Important in predicting prognosis and guiding decisions regarding adjuvant treatment are the clinicopathological features of breast carcinoma, including patient demographics, tumor size, histological subtype, tumor grade, lymphovascular invasion, lymph node status, and hormone receptor expression.[5] Histopathological analysis after MRM provides useful prognostic information for guiding recommendations for chemotherapy, endocrine therapy, targeted therapy and radiotherapy.[6]

The outcomes after MRM depend on several patient- and tumor-related factors. However, despite the advances in surgical techniques and perioperative care, complications such as postoperative seroma, surgical site infection, flap necrosis, hematoma, lymphedema and shoulder dysfunction remain associated with morbidity and prolonged hospitalization. [7] Careful evaluation of these outcomes is important in order to optimize patient management and quality of life. Various studies have reported differences in clinicopathological characteristics in different geographical regions, suggesting the role of demographic factors, reproductive history, socioeconomic status, and access to healthcare services in disease presentation.[8] Data from local institutions are thus vital in understanding region-specific disease trends and assessing surgical outcomes within particular healthcare settings.

The present study was undertaken to evaluate comprehensively the demographic characteristics, clinicopathological profile, histopathological features and short-term surgical outcomes in patients with carcinoma breast undergoing

modified radical mastectomy in a tertiary care hospital over a period of one year.

Aim: To evaluate the clinicopathological profile and surgical outcomes of patients with carcinoma breast undergoing modified radical mastectomy.

Objectives

1. To study the demographic and clinical characteristics of patients with carcinoma breast.
2. To assess the histopathological profile of breast carcinoma following modified radical mastectomy.
3. To evaluate tumor stage, lymph node status, and hormone receptor profile.
4. To determine the frequency of postoperative complications following modified radical mastectomy.
5. To assess early surgical outcomes and duration of postoperative hospital stay.

Materials and Methods

Study Design and Setting: This hospital-based cross-sectional observational study was conducted in the Department of General Surgery of a tertiary care teaching hospital over a period of 12 months. The study included patients with histopathologically confirmed carcinoma breast who underwent Modified Radical Mastectomy (MRM) during the study period. The objective was to evaluate the clinicopathological profile and short-term surgical outcomes following MRM.

Study Population: A total of 80 consecutive patients diagnosed with operable carcinoma breast and treated with modified radical mastectomy during the study period were included in the study.

Sample Size: The study included 80 patients who fulfilled the eligibility criteria during the study period. Consecutive sampling was employed until the desired sample size was achieved.

Inclusion Criteria

- Patients aged 18 years and above.
- Histopathologically confirmed carcinoma breast.
- Patients undergoing modified radical mastectomy as the primary surgical treatment.
- Patients who provided written informed consent to participate.

Exclusion Criteria

- Patients undergoing breast-conserving surgery.
- Patients with recurrent breast carcinoma.
- Patients with distant metastatic disease at presentation.
- Patients with incomplete clinical records.
- Patients unwilling to participate in the study.

Preoperative Evaluation: All patients underwent detailed clinical evaluation including demographic information, presenting symptoms, duration of illness, menstrual and reproductive history, family history of breast cancer, and associated comorbidities.

Clinical breast examination was performed to determine tumor size, laterality, quadrant involvement, skin changes, nipple involvement, and axillary lymph node status.

Routine laboratory investigations included complete blood count, renal function tests, liver function tests, blood glucose, coagulation profile, and viral serology. Imaging investigations included bilateral mammography and breast ultrasonography. Contrast-enhanced computed tomography and additional imaging were performed whenever clinically indicated for staging.

Diagnosis was established by core needle biopsy or fine needle aspiration cytology (FNAC) followed by histopathological confirmation.

Surgical Procedure: All patients underwent Modified Radical Mastectomy under general anesthesia following standard institutional surgical protocols. The procedure included complete removal of the breast tissue along with the nipple-areola complex and Level I and Level II axillary lymph node dissection while preserving the pectoralis major muscle.

Closed suction drains were placed routinely in the axillary and chest wall regions. Standard postoperative antibiotics, analgesics, wound care, and physiotherapy advice were provided. Drains were removed according to institutional protocol based on daily output.

Histopathological Evaluation: Resected specimens were examined by experienced pathologists. The following parameters were recorded:

- Histological subtype
- Tumor size
- Histological grade (Modified Bloom-Richardson grading)
- Surgical margin status
- Lymphovascular invasion
- Axillary lymph node involvement
- Pathological TNM stage

Immunohistochemistry was performed for:

- Estrogen receptor (ER)
- Progesterone receptor (PR)

- Human Epidermal Growth Factor Receptor-2 (HER2)

Outcome Measures

The primary outcome measures included:

- Clinicodemographic profile
- Clinical presentation
- Tumor characteristics
- Histopathological findings
- TNM stage
- Axillary lymph node involvement
- Hormone receptor status
- Early postoperative complications

Secondary outcome measures included:

- Duration of hospital stay
- Drain removal duration
- Wound healing
- Requirement for re-intervention
- Early surgical outcome at discharge

Data Collection: Data were collected prospectively using a predesigned structured case record form. Clinical examination findings, operative notes, histopathology reports, laboratory investigations, postoperative progress notes, and discharge summaries were reviewed for each patient. All collected information was anonymized prior to analysis to maintain patient confidentiality.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics version 26.0. Continuous variables were expressed as mean $\pm$ standard deviation (SD) or median with interquartile range where appropriate. Categorical variables were summarized using frequencies and percentages.

Associations between clinicopathological variables and postoperative outcomes were assessed using the Chi-square test or Fisher's exact test for categorical variables.

Continuous variables were compared using the independent Student's t-test or Mann-Whitney U test according to data distribution. A two-tailed p-value of <0.05 was considered statistically significant.

Results

A total of 80 patients with histopathologically confirmed carcinoma breast who underwent modified radical mastectomy were included in the study. The demographic characteristics, clinical presentation, and clinicopathological findings are presented below.

Table 1: Sociodemographic Characteristics of the Study Participants (N = 80)

Variable	Frequency (n)	Percentage (%)
Age Group (years)		
≤40	16	20.0
41–50	22	27.5
51–60	23	28.8
>60	19	23.7
Mean age (years)	52.6 ± 11.4	
Gender		
Female	79	98.8
Male	1	1.2
Residence		
Rural	46	57.5
Urban	34	42.5
Menopausal Status		
Premenopausal	31	38.8
Postmenopausal	49	61.2
Family History of Breast Cancer		
Present	11	13.8
Absent	69	86.2
Major Comorbidities*		
Hypertension	18	22.5
Diabetes Mellitus	14	17.5
Hypothyroidism	6	7.5
None	42	52.5

***Patients may have had more than one comorbidity.**

The mean age of the study population was 52.6 ± 11.4 years. Most patients (56.3%) belonged to the 41–60-year age group. Nearly all participants were female (98.8%). More than half (57.5%) resided in

rural areas, and 61.2% were postmenopausal. A positive family history of breast cancer was observed in 13.8% of patients. Hypertension was the most common comorbidity.

Table 2: Clinical Presentation and Tumor Characteristics (N = 80)

Variable	Frequency (n)	Percentage (%)
Presenting Symptoms*		
Painless breast lump	73	91.3
Breast pain	32	40.0
Nipple retraction	18	22.5
Nipple discharge	11	13.8
Skin ulceration	8	10.0
Axillary swelling	21	26.3
Duration of Symptoms		
<3 months	19	23.8
3–6 months	34	42.5
>6 months	27	33.7
Side Involved		
Right breast	42	52.5
Left breast	37	46.3
Bilateral	1	1.2
Tumor Location		
Upper outer quadrant	47	58.8
Upper inner quadrant	10	12.5
Lower outer quadrant	8	10.0
Lower inner quadrant	5	6.2
Central	10	12.5
Clinical Tumor Size		
≤2 cm	13	16.3
2.1–5 cm	44	55.0
>5 cm	23	28.7

***Multiple symptoms were present in some patients.**

A painless breast lump (91.3%) was the commonest presenting complaint, followed by breast pain (40.0%) and axillary swelling (26.3%). Most patients reported symptoms for 3–6 months (42.5%) before presentation. The right breast was slightly more frequently involved than the left. The upper outer quadrant was the predominant tumor location (58.8%), and more than half of the tumors measured 2.1–5 cm at presentation.

Table 3: Histopathological Profile of Breast Carcinoma (N = 80)

Variable	Frequency (n)	Percentage (%)
Histological Type		
Invasive ductal carcinoma (NST)	70	87.5
Invasive lobular carcinoma	5	6.3
Medullary carcinoma	2	2.5
Mucinous carcinoma	2	2.5
Papillary carcinoma	1	1.2
Histological Grade		
Grade I	12	15.0
Grade II	46	57.5
Grade III	22	27.5
Lymphovascular Invasion		
Present	34	42.5
Absent	46	57.5
Surgical Margin Status		
Negative	77	96.3
Positive	3	3.7

Invasive ductal carcinoma (NST) was the predominant histological subtype, accounting for 87.5% of cases. Grade II tumors were the most common (57.5%), followed by Grade III (27.5%).

Lymphovascular invasion was identified in 42.5% of patients. Surgical margins were negative in 96.3%, indicating adequate oncological resection in the vast majority of cases.

Table 4: TNM Stage and Axillary Lymph Node Status (N = 80)

Variable	Frequency (n)	Percentage (%)
Pathological Tumor Stage		
Stage I	10	12.5
Stage II	38	47.5
Stage III	28	35.0
Stage IV†	4	5.0
Axillary Lymph Node Metastasis		
Present	49	61.3
Absent	31	38.7
Number of Positive Nodes		
0	31	38.7
1–3	24	30.0
4–9	16	20.0
≥10	9	11.3

†These patients were diagnosed with limited metastatic disease during postoperative staging after undergoing surgery.

Nearly half of the patients (47.5%) had Stage II disease, while 35.0% presented with Stage III disease. Axillary lymph node metastasis was identified in 61.3% of patients. Among node-positive patients, 1–3 positive lymph nodes

constituted the largest subgroup (30.0%), followed by 4–9 positive nodes (20.0%). These findings indicate that a substantial proportion of patients presented with regionally advanced disease at the time of surgery.

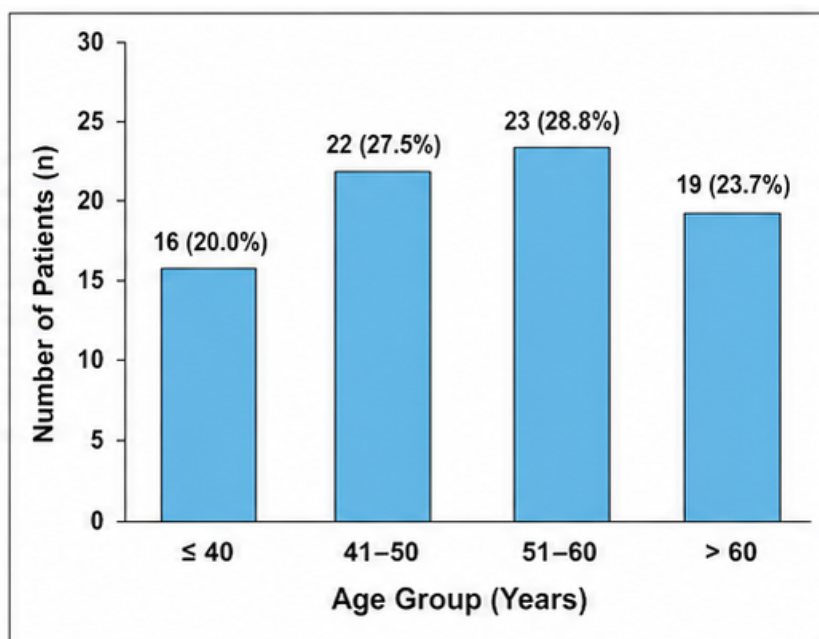


Figure 1. Age-wise distribution of study participants.

Figure 1: Age-wise distribution of patients undergoing modified radical mastectomy.

Bar chart illustrating the frequency of patients in the ≤40, 41-50, 51-60, and >60 years age groups.

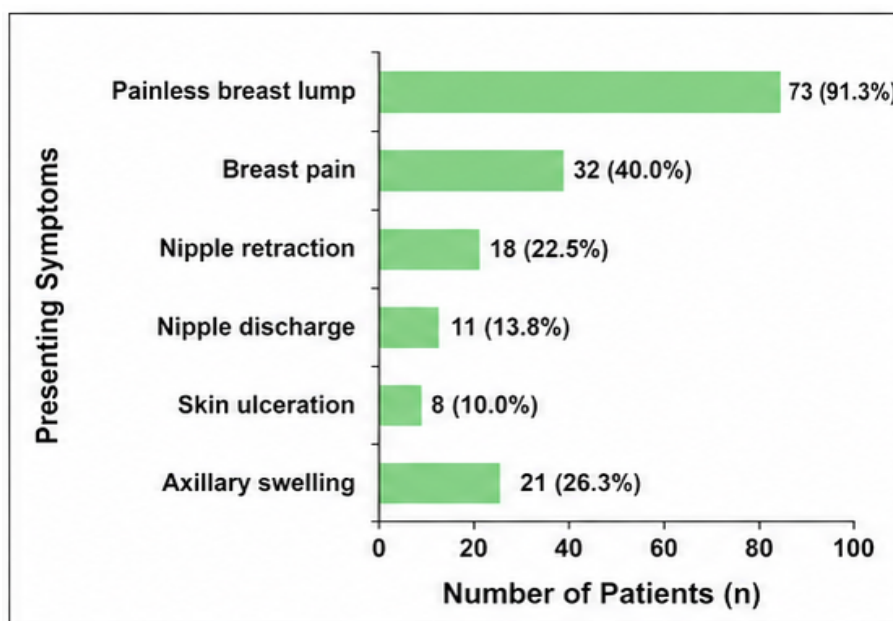


Figure 2. Presenting clinical symptoms among patients with carcinoma breast.

Figure 2: Distribution of presenting clinical symptoms among study participants.

The hormone receptor profile, postoperative complications, early surgical outcomes, and factors associated with postoperative complications are presented below.

Table 5: Hormone Receptor Profile of Patients (N = 80)

Variable	Frequency (n)	Percentage (%)
Estrogen Receptor (ER)		
Positive	52	65.0
Negative	28	35.0
Progesterone Receptor (PR)		
Positive	46	57.5
Negative	34	42.5
HER2/neu Status		
Positive	21	26.3
Negative	59	73.7
Molecular Subtype		
Luminal A	32	40.0
Luminal B	18	22.5
HER2-enriched	10	12.5
Triple-negative	20	25.0

Estrogen receptor positivity was observed in 65.0% of patients, while 57.5% demonstrated progesterone receptor positivity. HER2 overexpression was identified in 26.3% of cases. Luminal A was the commonest molecular subtype (40.0%), whereas triple-negative breast cancer constituted one-fourth of the study population.

Table 6: Postoperative Complications Following Modified Radical Mastectomy (N = 80)

Complication	Frequency (n)	Percentage (%)
Seroma formation	12	15.0
Surgical site infection	7	8.8
Flap necrosis	4	5.0
Hematoma	3	3.8
Wound dehiscence	3	3.8
Upper limb lymphedema	5	6.3
Shoulder stiffness	6	7.5
Drain blockage	2	2.5
No postoperative complication	48	60.0

Some patients experienced more than one complication. Overall, 60.0% of patients experienced an uncomplicated postoperative recovery. Among those with complications, seroma formation (15.0%) was the most frequent, followed by surgical site infection (8.8%), shoulder stiffness (7.5%), and upper limb lymphedema (6.3%). Flap necrosis, hematoma, and wound dehiscence occurred less frequently.

Table 7: Early Surgical Outcomes (N = 80)

Variable	Frequency (n)	Percentage (%)
Duration of Drain Placement		
≤5 days	18	22.5
6–10 days	48	60.0
>10 days	14	17.5
Postoperative Hospital Stay		
≤5 days	17	21.3
6–8 days	46	57.5
>8 days	17	21.2
Mean hospital stay (days)	7.4 ± 2.1	
Wound Healing at First Follow-up		
Satisfactory	72	90.0
Delayed	8	10.0
Readmission Within 30 Days		
Yes	4	5.0
No	76	95.0

Most patients (60.0%) required drain placement for 6–10 days. The mean postoperative hospital stay was 7.4 ± 2.1 days, with the majority (57.5%) discharged within 6–8 days. Satisfactory wound healing was observed in 90.0% of patients, and only 5.0% required readmission within 30 days.

Table 8: Association between Clinicopathological Variables and Postoperative Complications

Variable	Complication Present (n=32)	No Complication (n=48)	p-value
Age >60 years	12	7	0.041*
Tumor size >5 cm	15	8	0.012*
Grade III tumor	13	9	0.038*
Lymphovascular invasion present	18	16	0.019*
Positive axillary lymph nodes	24	25	0.028*
Diabetes mellitus	10	4	0.015*
Hypertension	9	9	0.231

Chi-square test; p <0.05 considered statistically significant.

Postoperative complications were significantly associated with advanced age (>60 years), larger tumor size (>5 cm), high histological grade, lymphovascular invasion, axillary lymph node metastasis, and diabetes mellitus (p <0.05). Hypertension did not demonstrate a statistically significant association with postoperative complications.

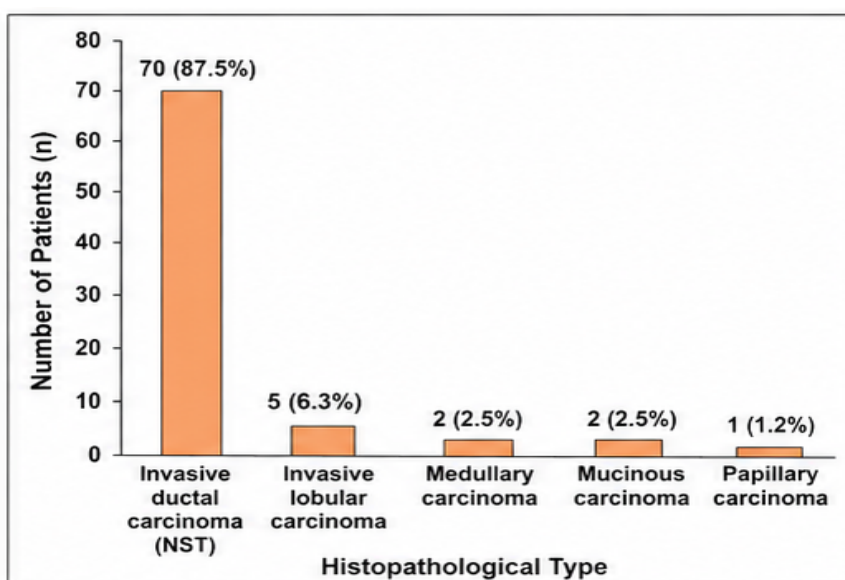
**Figure 3. Histopathological types of breast carcinoma.**

Figure 3: Histopathological distribution of breast carcinoma.

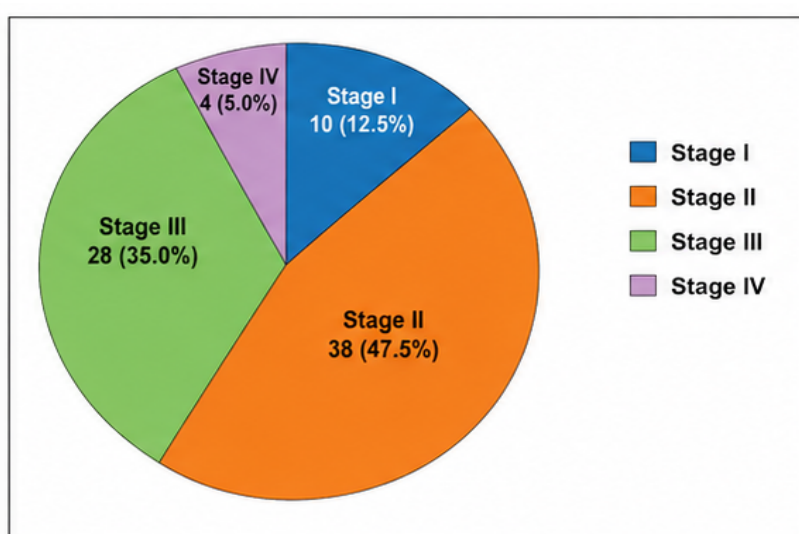
**Figure 4. Distribution of pathological TNM stages.**

Figure 4: Distribution of pathological TNM stages.

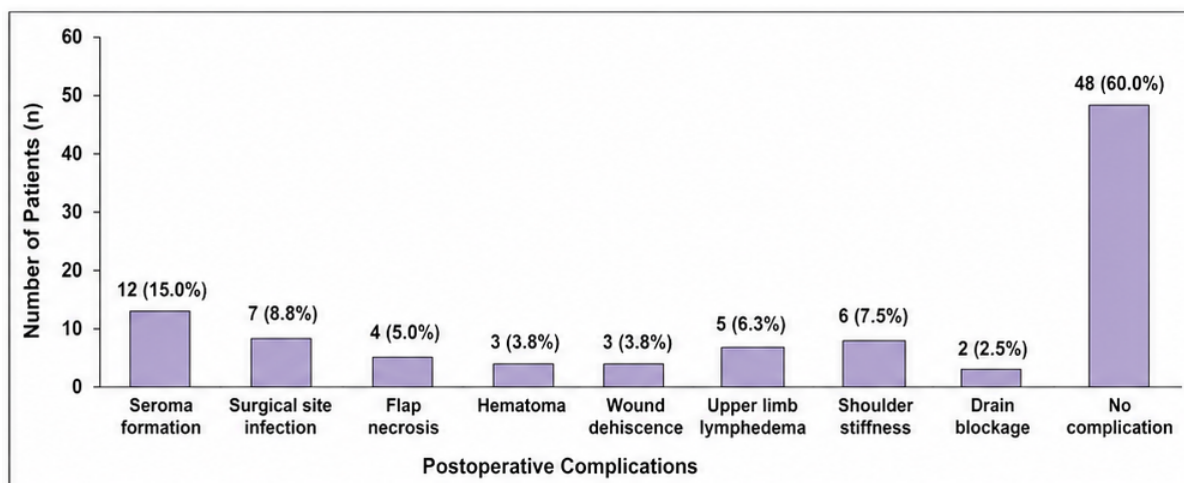


Figure 5. Postoperative complications following modified radical mastectomy.

Figure 5: Frequency of postoperative complications following modified radical mastectomy.

Discussion

Present hospital based cross sectional study was conducted to assess the clinicopathological features and early surgical outcome in 80 patients of carcinoma breast undergoing modified radical mastectomy (MRM). The results indicated that breast cancer was diagnosed mainly in middle-aged and elderly women, and the most common histological type was invasive ductal carcinoma. The clinical presentation was Stage II disease in the majority of patients. MRM was associated with good short term surgical outcome and tolerable postoperative morbidity.

The mean age of the patients in this study was 52.6 ± 11.4 years, with the majority (56.3%) being in the 41-60 years age group. This is in agreement with findings from developing countries where breast cancer often occurs a decade earlier than in the Western countries. Similar age distributions have been reported by Sung et al. reflecting regional variations in the epidemiology of breast cancer globally, with Asian women often presenting in their fifth decade of life.[1] Similarly, the National Cancer Registry Programme of the Indian Council of Medical Research reported an increase in the incidence of breast cancer in women aged 40–60 years in India.[2] The relatively younger age at diagnosis reflects the need for increased awareness and early detection strategies in resource-constrained settings.

The majority of the study participants were women (98.8%) and only one male patient was enrolled. Male breast cancer is still rare and accounts for <1% of all breast malignancies.[3] The predominance of female patients in the present study thus reflects the known epidemiological distribution of breast carcinoma. The presenting symptoms were most commonly a painless breast

lump (91.3%), followed by breast pain (40.0%) and axillary swelling (26.3%). Similar results have been found in institutional studies. A painless breast lump continues to be the earliest and commonest presentation of breast carcinoma. More than three-fourths of the patients, unfortunately, had symptoms for more than three months before they presented to the physician, which reflects delays in the diagnosis, due to poor awareness, social stigma, financial constraints and limited access to specialized healthcare facilities.[4,5]

The commonest site of involvement was upper outer quadrant of breast (58.8%) followed by upper inner quadrant. This distribution is in agreement with the anatomic predominance of glandular tissue in the upper outer quadrant and is consistent with the observations of Rosen et al.[6] Similar findings have been repeatedly observed in both Asian and Western populations.

Histopathological examination showed that invasive ductal carcinoma (no special type) was the main histological type and was present in 87.5% of patients. The World Health Organization Classification of Breast Tumours reports similar proportions, with invasive ductal carcinoma representing approximately 70–80% of invasive breast cancers worldwide.[7] Grade II tumor had the highest proportion (57.5%) followed by Grade III tumor. Moderate grade tumours generally form the largest subgroup in hospital-based series and are important predictors of recurrence and overall survival.[7,8]

Lymphovascular invasion was found in 42.5 % of patients and axillary lymph node metastasis was seen in 61.3 %. Axillary lymph node status continues to be one of the most powerful prognostic factors in operable breast cancer with a profound influence on decisions regarding adjuvant

chemotherapy and radiotherapy.[9] The relatively higher prevalence of nodal metastasis found in the present study is a reflection of delayed presentation and advanced disease at diagnosis and these findings are similar to those reported from other tertiary care centers in India.[10] Pathological staging showed that the most common presentation was Stage II disease (47.5%) followed by Stage III disease (35.0%). These findings are consistent with prior Indian studies, which have shown that a large number of patients present with locally advanced disease due to poor screening and delay in seeking healthcare.[2,10] In contrast, organized mammographic screening programs in developed countries have resulted in earlier diagnosis with Stage I disease representing a much greater proportion of newly diagnosed breast cancer.[11]

Hormone receptors analysis showed positive estrogen receptors in 65.0% and positive progesterone receptors in 57.5% of patients. HER2 overexpression was found in 26.3%. The most frequent molecular subtype was luminal A. These results are consistent with previous studies where the majority of breast cancers were hormone receptor-positive tumors with relatively better responses to endocrine therapy and better long-term survival.[12,13] The fact that 1 in 4 patients will develop triple-negative disease underscores the ongoing need for effective systemic therapies in this biologically aggressive subgroup. The overall postoperative outcome of modified radical mastectomy was satisfactory. The mean postoperative hospital stay was 7.4 ± 2.1 days. 90.0% patients had satisfactory wound healing. Similar postoperative recovery periods were reported by other investigators evaluating results after MRM. Improved perioperative care, careful surgical technique and standardized postoperative protocols have made important contributions to reduce postoperative morbidity and to shorten hospital stay.

The most frequent postoperative complication was seroma formation (15.0%) followed by surgical site infection (8.8%), shoulder stiffness (7.5%) and upper limb lymphedema (6.3%). The most common complication after axillary dissection is seroma, caused by disruption of lymphatic channels and the creation of dead space.[15] Published seroma rates differ from approximately 10% to 35%, depending on the surgical technique, drain management, and patient characteristics.[15,16] The relatively low incidence observed in the present study may be related to meticulous intraoperative hemostasis and standardization of protocols for drain management. Postoperative complications were significantly associated with older age, larger tumor size, Grade III histology, lymphovascular invasion, axillary lymph node metastasis and diabetes mellitus on statistical analysis. These findings are consistent

with prior studies identifying advanced disease burden and metabolic comorbidities as important determinants of postoperative morbidity.[17,18] Diabetes mellitus may impair wound healing through microvascular dysfunction, reduced collagen synthesis and impaired immune responses leading to increased susceptibility to infection and delayed recovery.[19]

Modified radical mastectomy still has an important role in the surgical treatment of breast cancer especially in low- and middle-income countries where patients usually present with tumors not suitable for breast-conserving surgery. Despite a growing trend towards breast conservation in selected patients, MRM is still an oncologically safe procedure with good local control and acceptable complication rates when performed by standardized surgical techniques.[20]

The findings of the present study support the existing evidence on the clinicopathological profile of breast carcinoma in developing countries and confirm that modified radical mastectomy is a safe and effective surgical option with good early postoperative outcomes. Increased focus on public awareness, early diagnosis, multidisciplinary management, and structured postoperative rehabilitation are likely to further improve patient outcomes and quality of life.

Study strengths

- Prospective evaluation of consecutive patients undergoing modified radical mastectomy.
- Detailed examination of demographic, clinical, histopathological and surgical outcome variables.
- Molecular subtypes and hormone receptor assessment
- Analysis of factors associated with postoperative complications, using statistical methods.
- Findings provide useful institutional data which may help guide future clinical practice and regional cancer management strategies.

Limitations of Study

- Single center study, limiting the generalizability of findings.
- Small sample size (80 patients)

The cross-sectional design did not allow for the assessment of long-term recurrence and survival outcomes.

- Follow-up was limited to early post-operative period.
- Cosmetic result and quality of life measures were not evaluated.
- Genetic testing (e.g., BRCA1/BRCA2) and Ki-67 proliferation index were not routinely available for all the patients

Conclusion

The present study showed that carcinoma breast was mainly seen in women in the fifth and sixth decades of life. The most common histopathological subtype was invasive ductal carcinoma.

The majority of patients were at Stage II and a large proportion had axillary lymph node metastasis at the time of surgery. Most cases were hormone receptor positive tumors, especially Luminal A subtype.

The modified radical mastectomy was associated with favourable early surgical results, including satisfactory wound healing, an acceptable length of hospital stay and a relatively low incidence of postoperative complications. The most common postoperative complication was seroma formation. Older age, larger tumor size, higher histological grade, lymphovascular invasion, axillary lymph node involvement, and diabetes mellitus were significantly associated with postoperative morbidity.

Early diagnosis, prompt surgical intervention, multidisciplinary treatment and meticulous post-operative care are essential to optimize outcomes in patients with breast carcinoma. Modified radical mastectomy is a safe, effective and reliable surgical procedure especially in resource limited settings where a substantial proportion of patients present with locally advanced disease.

Clinical significance

- Modified radical mastectomy continues to be a viable surgical option for operable breast cancer, particularly in patients who are not candidates for breast-conserving surgery.
- Screening and awareness programs allow for early detection that can lead to an earlier diagnosis and better prognosis.
- Histopathology and hormone receptor profiling are important for personalized treatment planning.

Targeted perioperative management of high-risk patients may reduce the incidence of postoperative complications.

- Postoperative physiotherapy and follow-up should be structured to minimize shoulder dysfunction and lymphedema.

Recommendations

- Community level breast cancer awareness and screening programmes should be strengthened for early diagnosis.
- All eligible patients should be encouraged to undergo routine assessment of ER, PR, HER2, and Ki-67 to aid in guiding personalized treatment.

- Larger prospective multi-center studies with longer follow-up are required to assess disease free survival, overall survival and quality of life outcomes.
- Standardized postoperative rehabilitation protocols should be adopted to minimize morbidity and improve functional recovery.

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