



LOCAL COMPLICATIONS OF MODIFIED RADICAL MASTECTOMY AT A TERTIARY CARE INSTITUTE: A PROSPECTIVE OBSERVATIONAL STUDY

General Surgery

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ABSTRACT

Background: Breast cancer is the most prevalent cancer among women in India, with rapid westernization and lifestyle changes contributing to the rise. Factors such as younger age at diagnosis, late presentation (indicated by larger tumors, more affected axillary lymph nodes, and poorer tumor grades), and lower hormone receptor positivity are linked to worse outcomes. **Aim:** To study various local complications of modified radical mastectomy up to 6 months of post-operative period. **Methods:** 100 patients with histologically diagnosed breast carcinoma who underwent modified radical mastectomy were studied. Pre-operatively all the patients were investigated and optimized. Regular follow-ups were conducted with the patient until six months after the operation. **Results:** A total of 28 patients developed various complications. Majority of them were of older age group, amongst which 11 patients had comorbid condition. Out of total, 17 cases had developed seroma, 7 cases had developed wound dehiscence and 5 cases had developed wound infection, 2 cases had flap necrosis and another 2 cases had hematoma. **Conclusion:** A range of post-surgical complications were observed including seroma, wound infection, wound dehiscence, flap necrosis, lymphedema and recurrence of malignancy. Of all these complications the most common one is seroma followed by wound dehiscence. Early recognition of these complications and taking appropriate interventional measures to prevent or reduce them will significantly help to improve patient outcome by reducing morbidity and mortality.

KEYWORDS

breast carcinoma, complications, seroma, wound infection

INTRODUCTION

Breast cancer is the most prevalent cancer among women in India, with rapid westernization and lifestyle changes contributing to the rise. Factors such as younger age at diagnosis, late presentation (indicated by larger tumors, more affected axillary lymph nodes, and poorer tumor grades), and lower hormone receptor positivity are linked to worse outcomes. Delays in diagnosis, often due to illiteracy, lack of awareness, socioeconomic challenges, and insufficient breast screening programs, result in poorer survival rates. Despite significant improvements in care quality, treatment standards vary across the country, highlighting the need for a more targeted approach to enhance breast cancer outcomes in India. [1]

Modern management of breast cancer is comprehensive, involving surgery, radiotherapy, hormonal therapy, and chemotherapy. However, surgery remains the cornerstone of treatment. Modified radical mastectomy (MRM) has emerged as a primary surgical procedure, particularly in India. [3] The modified radical mastectomy removes all breast tissue, the nipple-areola complex, extensive skin, and the axillary lymph nodes. [4]

Complications associated with MRM include seroma formation, surgical site infection (SSI), wound opening, skin flap tissue death, lymphedema, bleeding, hematoma formation, recurrence. These complications can be reduced through careful patient selection and standardized surgical practices. Thorough preoperative assessment, precise surgical techniques, effective bleeding control, and meticulous wound closure can minimize these complications. Identifying risk factors early can help mitigate associated health risks. [3] Complications following MRM, occurring both shortly after surgery and later, contribute significantly to morbidity, prolong hospital stays, increase costs, and disrupt the continuity of breast cancer management, potentially delaying adjuvant chemotherapy or radiotherapy. [3] This study aimed to explore the correlation between preoperative tumor size, lymph node status, patient clinical profiles, and the incidence of these complications. Such insights could aid in predicting patient prognosis and guiding preventive measures preoperatively.

METHODOLOGY

Study Design: Prospective observational study

Sample Size: 100 patients

Inclusion Criteria: patients diagnosed with carcinoma breast on basis of FNAC or TRUCUT biopsy report without any systemic metastasis undergoing modified radical mastectomy.

Exclusion Criteria: locally advanced carcinoma breast (T3/T4 and N2/N3 disease) [5] and recurrent carcinoma breast, primary breast

cancer with systemic metastasis.

Procedure: Preoperatively all the patients were investigated and optimized medically. Proper antibiotic prophylaxis was given at time of anesthesia induction. Proper aseptic conditions were maintained during the surgery, and the resected specimen was sent for histopathological examination. Pectoral and axillary drain was removed when the drain output was less than 30 ml per day for two consecutive days. Regular follow-ups were conducted with the patient until six months after the operation, and the oncophysician was consulted for recommendations on chemotherapy or radiotherapy.

RESULTS

This study included a total of 100 patients with biopsy proven breast carcinoma undergoing modified radical mastectomy. All the patients were female.

Table 1- Age Wise Distribution Of Patients

Age Group (years)	Frequency
<20	0
21-30	1
31-40	14
41-50	28
51-60	27
61-70	17
>70	13

Out of all the patients 57 patients were affected on the left breast while the remainder on the right side.

Out of 100 patients 20 had radiologically or clinically palpable ipsilateral mobile axillary lymph adenopathy.

Table 2- Comorbidities

Comorbid disease	Frequency
Hypertension	39
Diabetes	12
Hypothyroidism	4
Rheumatoid arthritis	2
Congenital heart disease	1
None	56

Table 3- Complications

Complication	Frequency
Seroma	17
Wound dehiscence	7
Wound infection	5
Flap necrosis	2

Hematoma	2
Lymphedema	1
Recurrence	1
None	72

A total of 28 patients developed various complications. Majority of them were of older age group, amongst which 11 patients had comorbid condition. Out of total, 17 cases had developed seroma, 7 cases had developed wound dehiscence and 5 cases had developed wound infection, 2 cases had flap necrosis and another 2 cases had hematoma.

DISCUSSION

The findings of this study are consistent with previous literature. Out of total, 17 cases had developed seroma, 5 cases had developed wound infection, 7 cases had wound dehiscence, 2 cases had flap necrosis and 2 cases had developed hematoma. Only 1 case had complained of recurrence of tumor. In study of Chandrakar N et al [6] majority of patients had developed wound dehiscence, seroma and flap necrosis as a postoperative complication. In studies of Obadiel, Y.A et al [7], Bawok e G et al [8] and Shaikh K et al [9] majority of patients had developed wound infection and seroma as a postoperative complication.

CONCLUSION

A range of post-surgical complications were observed including seroma, wound infection, wound dehiscence, flap necrosis, lymphedema and recurrence of malignancy. Of all these complications the most common one is seroma followed by wound dehiscence. The complications mentioned in this study significantly contribute to the post-operative morbidity and mortality in patients undergoing modified radical mastectomy for breast carcinoma. The complications particularly delay the initiation of chemotherapy or radiotherapy which further aggravates the disease process leading to increased morbidity and mortality.

Meticulous surgical techniques, such as harmonic scalpel dissection, effective hemostasis, and proper drain placement, can help lower the risk of seroma formation. Meanwhile, maintaining optimized blood sugar levels, using clean dressings, and administering antibiotics can help to decrease post-operative wound infection. Early recognition of these complications and taking appropriate interventional measures to prevent or reduce them will significantly help to improve patient outcome by reducing morbidity and mortality.

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