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ORIGINAL ARTICLE

Frequency of Early Post-Operative Complications following Modified Radical Mastectomy (MRM) in patients with Breast Carcinoma

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ABSTRACT
Objective: Breast carcinoma is the commonest cancer affecting female gender and is the second major cause of mortality in females globally. Among different surgical options, modified radical mastectomy (MRM) with or without neoadjuvant therapy is the most frequent surgery carried out globally for breast carcinoma. In this study we aimed to determine the frequency of early post-operative complications following modified radical mastectomy (MRM) in patients with breast carcinoma.
Material and methods: This dual setting retrospective descriptive study was conducted at General surgery departments of Kuwait Teaching Hospital and MTI-Lady Reading Hospital Peshawar between January, 2018 and June, 2019. A total of 60 patients aged >18 years with biopsy proven stage-I to stage-III breast carcinoma who underwent modified radical mastectomy were included.All patients were followed on weekly basis for six weeks at the out-patient department (OPD) and evaluated for the development of early complications such as seroma/hematoma, flap necrosis and wound infections.
Results: Seroma formation found in 9 patients (15%) and wound infection seen in 5 patients (8.3%) were the commonest complications.
Conclusion: In our study seroma formation was the most common complication followed by wound infection. Skin flap necrosis, wound dehiscence, hematoma formation and development of early lymphoedema were less common. None of our patients presented with muscle paralysis secondary to nerves injury.
Keywords: Breast carcinoma, modified radical mastectomy, complications, seroma, wound infection.

INTRODUCTION
Breast carcinoma is the commonest cancer affecting female gender and is the second major cause of mortality in females globally. In united states, every 8th woman is experiencing this condition during her lifespan.[1,2]As opposed to western population, women of Asian and African origin have a lower risk of developing breast carcinoma.[3]However, in Pakistan the frequency of breast carcinoma is rising rapidly and majority of patients present in advanced stages in which breast conservation surgery (BCS) is often not possible.[4,5]

The modern way to manage patients with carcinoma breast is multidisciplinary but surgery remains the main treatment option. Among different surgical options, modified radical mastectomy (MRM) with or without neoadjuvant therapy is the most frequent surgery carried out globally forbreast carcinoma.[6-8]Adjuvant therapy with hormonal/chemotherapeutic agents is dependent on receptor status of the patient.[9]

Modified radical mastectomy (MRM) is also carried out prophylactically in patients who are genetically highly susceptible for developing breastcarcinoma and is also the procedure of choice for patients with stage-II & stage-III disease.[9,10]

Early postoperative complications of MRM include seroma, hematoma, lymphedema, wound infection and shoulder dysfunction while late complications include pain, shoulder immobility and hypertrophic scar.[7,11]

These complications not only increase the morbidity of such patients but often result in significant delay in receiving the postoperative adjuvant therapy according to the stage and receptor status of the patient. Therefore, in this study we aimed to determine the frequency of early post-operative complications following modified radical mastectomy (MRM) in patients with breast carcinoma.

MATERIAL AND METHODS
This dual setting retrospective descriptive study was conducted at General surgery departments of Kuwait Teaching Hospital and MTI-Lady Reading Hospital Peshawar between January, 2018 andJune, 2019. A total of 60 patients aged >18 years with biopsy proven stage-I to stage-III breast carcinoma who underwent modified radical mastectomy were included. Patients suffering frominflammatory/metastatic breast carcinoma, Diabetes,Human Immunodeficiency virus infection, Tuberculosis and those taking anti-coagulants/antiplatelet drugs were excluded from this study. The sampling technique was non-probability purposive and informed written consent was obtained from every patient.

Ethical approval of this study was obtained from ethical-approval committees of both institutions.Modified radical mastectomy was performed in all patients and two drains were placed in every patient, one in axilla and one under the skin flap. Dissection was carried out using monopolar diathermy which was also used for hemostasis

along with sutures. Every patient received perioperative injectable antibiotics for two days for coverage of gram +ve organisms. Patients were discharged on second postoperative day. All patients were followedon weekly basis for six weeks at the out-patient department (OPD) andevaluated for the development of early complications such as seroma/hematoma, flap necrosis and wound infections.

Thepatients' demographic data, detailed history, physical examination and clinical findings including stages of carcinoma breast and early complications in first six weeks were recorded and analyzed using SPSS-22version.

RESULTS

A total of 60 patients who underwent modified radical mastectomy were included in this study. All patients were females with minimum age of 26 and maximum age of 71 years. 63.3 % patients were in age group of >40-60. The distribution of patients according to their age groups is given in table-I.

Majority of patients (68.3%) presented in stage-III A. The distributions of patients according to stages of carcinoma is given in table-II.

Frequency of early postoperative complications is described in table-III. Seroma formation observed in 9 patients (15%) and wound infection seen in 5 cases(8.3%) were the commonest complications. None of these patients developed muscle paralysis.

Table I: Distribution of Patients According to Age Groups

Age group (years)	No. of patients	Percentage
≤25	0	0
25-40	9	15 %
>40-60	38	63.33 %
>60	13	21.66 %
Total	60	100 %

Table II: Distribution of Patients According to Stage of Carcinoma

Stage of breast carcinoma	No. of patients	Percentage
Stage-I	0	0
Stage-II A	3	5 %
Stage-II B	5	8.3 %
Stage-III A	41	68.3 %
Stage-III B	11	18.3 %
Total	60	100 %

Table III: Early Postoperative Complications after Modified Radical Mastectomy

Complications	No. of patients	Percentage
Seroma	9	15 %
Wound infection	5	8.3 %
Skin flap necrosis	3	5 %
Wound dehiscence	2	3.3 %
Hemorrhage/Hematoma	1	1.6 %
Lymphoedema	1	1.6 %
Muscle paralysis	0	0

DISCUSSION

A variety of surgical procedures are available to treat patients with carcinoma breast but modified radical mastectomy with axillary clearance is the commonest procedure performed.[1,6,7] The leading complication associated with this procedure is formation of seroma with a reportedfrequency ranging from 4.2 to 89 percent in patients in which no drain was placed in axilla and 53 percent in patients whose axillae were drained.[12,13]It is often correlated with age of the patient, size of the breast, axillary lymph nodes involvement by tumor, preceding biopsy, raised patient blood pressure and usage of anticoagulants.[14,15] In our studythis complication was observed in 9 patients (15%) and was treated with percutaneous aspiration and pressure dressings.

The second frequent complication of this studywaswound infection, observed in 5 patients (8.3%). Rizwi et al.[5], Dahri FJ et al.[16], and Shah S.H.et al.[17] reported a wound infection rate of 1.5, 10 and 28 percentrespectively in their studies.Chandarkar N et al. reported even a higher rate of wound infection (37.7%).[7]Wound infection in our patients was treated initially with empirical and later with culture-based antibiotics and regular dressings. Two of these patients (3.3%) developed wound dehiscence which was also treated with antibiotics& dressings but one patient required secondary closure.

Frequency ofskin flap necrosis varies a littleamong different studies.[1,7,16,18]Compte DV et al. reported a 14.5 percent incidence of flap necrosis.[19] It occurred in 3 of our patients (5%) which required scar revision in two cases and flap closure in one patient.

Other common complications of mastectomy include development of hematoma and lymphoedema.[9] Incidence of these complications in our study was 1.6 percent each. Literature suggests that frequency of hematoma following mastectomy reaches up to 18 percent while that of lymphoedema is around 16.6 percent. [20,21]

CONCLUSION

In our study seroma formation was the most common complication followed by wound infection. Skin flap necrosis, wound dehiscence, hematoma formationand development of early lymphoedema were less common. None of our patients presented with muscle paralysis secondary to nerves injury.

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