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Comparison of Outcome of One Versus Two Drains Insertion for Seroma Formation Following Modified Radical Mastectomy in Breast Carcinoma

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ABSTRACT

Objective: Comparative outcome of one versus two drains insertion for in the term of seroma formation following modified radical mastectomy in breast carcinoma.

Methodology: This Prospective Interventional trial was conducted at Department of General Surgery, Liaquat University Hospital Hyderabad from February 2018 to January 2019. Females with breast carcinoma admitted for modified radical mastectomy were included. Patients were divided into two groups. Groups I underwent one drain placement and group II underwent two drains placement. All patients were observed to measure and record the volume of the fluid. Patients were discharged from Hospital in stable condition and after removal of drains, and followed up weekly for one month. Data was recorded on self-made proforma and analyzed by using SPSS-20.

Results: Total of 80 patients were selected, 38 in group A and 42 in group B. Mean age of patients of group A was 49.08 ± 9.89 years and group B was 51.40 ± 13.59 years. , Excised Mass weight was lesser in group A as compared to group B. Mean volume of drain discharge was significantly higher in Group B 323.43 ± 158.88 ml, while it was in group A 230.29± 200.98, findings were statistically significant 0.013. Seroma formation was statistically insignificant among both groups as 8(21.1%) in group A and 10(23.8%) in group B, p-value 0.768.

Conclusion: One-drain and two-drain insertion are equally effective to reduce the seroma formation after modified radical mastectomy; however, one drain insertion leads to more patient compliance and comfort with probably less morbidity and cost.

Keywords: Breast cancer, on drain two drains, Seroma

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Introduction

Breast cancer is the most commonly diagnosed cancerous growth of breast tissue among females globally, accounting for 23 percent of all cases of cancer worldwide.[1,2] Estimates from the WHO suggest that every year, above 1.2 million females are diagnosed to have breast cancer globally.[3] According to estimates from the Shaukat Khanum Memorial Cancer Hospital, breast cancer incidence is 45.9 percent among females and 21.5 percent among all cases.[1,4] Breast cancer treatment in resource-limited countries is typically affected by several factors, including inadequate awareness regarding public health priority for breast cancer, a scarcity of qualified healthcare workers, and cultural or religious impediments.[5,6] In Asia, the young females in Pakistan also have advanced breast malignancy, which negatively impacts the prognosis.[7]

Breast cancer prognosis and diagnosis depend on the type and stage of breast malignancy. Every course of treatment is personalized and a cancer specialist and a patient must work it together. Therapy aims to cure breast malignancy of stage-1 to -2 breast cancer patients. Usual treatment comprises of surgical procedures for the removal of breast tumor, medications, and likely radiotherapy to the breast. The target of treatment for breast cancer patients of stage IV, when cancer has progressed to a distant body part, is to regulate breast malignancy for the longest possible time.[8] Surgery is among the key intervention components, and a technique termed modified radical mastectomy (MRM) is now a common surgical intervention for the breast cancer of early-stage.[9] However, mastectomy remains a viable option for women with breast cancer. Mostly, the MRM is a preferred treatment, which allows the elimination of both the primary cancer mass and neighboring glandular tissue that is suspected of the multifocal process and infiltration, and the elimination of the sentinel axillary lymph node.[10] Following MRM, the most prevalent direct complications after surgery are hematoma development, surgical wound inflammation, and seroma formation. Seroma develops in about 50% of cases with mastectomy.[11] The surgical wound drainage may contribute to these direct complications after surgery, at least partly.[10,12] The general assumption is that a single drainage system's efficiency has the same general effect contrasted to two or three separate drains being placed[10,13] Placement of a single drain minimizes pain and discomfort of the patient significantly along with the risk of complications after surgery. On other hand recently observed that the formation of Seroma was greater in a group with single drain than in the group with double drain.[14] After these recent controversial literature observations, this study has been planned to compare the outcome of one against two drains insertion for seroma formation following adapted radical mastectomy in breast carcinoma.

Methodology

This Prospective Interventional trial was conducted on females with breast carcinoma who were admitted to the Department of Surgery, Liaquat University Hospital Jamshoro for modified radical mastectomy during the period from February 2018 to February 2019. All patients with locally advanced and metastatic disease were excluded. Also, patients with a history of neo-adjuvant therapy, furthermore with impaired wound healing and those not willing to participate in the study were also not included in the study. All patients after fulfilling the inclusion criteria were explained regarding the method and objective of the study. The patients were divided into two separate groups. All patients operated for modified radical mastectomy under general anaesthesia and data was collected regarding age, height, weight, operative details along the weight of mass excised. The first group of patients underwent one drain placement and which was inserted in underneath the lower skin flap. The second group of patients underwent two drains placement, one drain was placed in underneath the lower skin flap and another in axillary areas. Wounds were closed with vicryl in sub-cutical manner and a normal dressing was applied on wound. All patients remain admitted in the surgical unit and were observed for measure and record the volume of the fluid. Drains were removed, when their discharge was below 20 ml / day. After removing the last drain, all patients were discharged from Hospital, visited and followed up weekly for one month and data were analyzed with SPSS-20 software.

Results

Total 80 patients were selected, 38 in group A and 42 in group B. Mean age of patients of group A was 49.08 ± 9.89 years and group B was 51.40 ± 13.59, statistically insignificant p-value 0.389. Estimated blood loss was higher in group B as 219.83 ± 100.72 ml in contrast to group A 169.92 ± 84.99 ml, p-value 0.020. Excised Mass weight was lesser in group A as 255.45 ± 44.97grams as compared to group B 305.51 ± 62.76 grams. The mean volume of drain discharge was significantly higher in Group B 323.43 ± 158.88 ml, while it was in group A 230.29± 200.98, findings were statistically significant 0.013. The mean duration of drain removal was 4.32 ± 1.33 days in group A and 4.64 ± 0.93 days in group B, findings were statistically insignificant p-value-0.205. Wound infection equal among both groups. Seroma formation was statistically insignificant among both groups as 8(21.1%) in group A and 10(23.8%) in group B, p-value 0.768. (Table I)

Table I. Comparative outcome of one versus two drains insertion (n=80)

Variables	Group 1 (1 Drain) n=38	Group 2 (2 Drains) n=42	P value
Age (years)	49.08 ± 9.89	51.40 ± 13.59	0.389
Estimated blood loss (ml)	169.92 ± 84.99	219.83 ± 100.72	0.020
Excised Mass weight (g)	255.45 ± 44.97	305.51 ± 62.76	0.001
Volume of drain discharge (ml)	230.29± 200.98	323.43 ± 158.88	0.013
Drain removal (day)	4.32 ± 1.33	4.64 ± 0.93	0.205
Wound infection	2(5.30%)	2(4.8.0%)	0.918
Seroma formation	8(21.1%)	10(23.8%)	0.768

Discussion

The prevalence of breast cancer is one of the raise worldwide including in countries of Asia like Pakistan.[15] Mastectomy is still a common procedure and the drain usage after this procedure is controversial mainly due to diverse recommendations. In this study outcome has been compared in one drain placement versus 2 drain placement after modified radical mastectomy in terms of Seroma formation, though no significant difference was found among both Seroma formation. Similarly in Memorial Sloan-Kettering Cancer Center, postoperatively 4 drains placement was compared with single drain placement multiple (four) drains were prospectively compared with single drain and authors did not found significant difference and recommended single drain to the axilla after lymphadenectomy.[16] Ebrahimifard F et al[17] observed there was no marked difference among both double versus single drain groups in terms of duration of drain removal mean of aspirated fluids and Seroma formation p-value were quite insignificant. In this study, seroma formation was statistically insignificant among both groups as 8(21.1%) in group a and 10(23.8%) in group B, p-value 0.768. While an inconsistently recent study of Guneri G et al[14] revealed that the seroma formation was markedly higher in group of the single drain as compared to double drain group, p-value <0.05, while pain, discomfort, hospital stay and duration of drain removal were statistically insignificant as in our study. Other studies[18,19] also showed that the cases having single drain placement after modified radical mastectomy were seen with shorter Hospital stay and this linked to less cost. Similarly in this study mean duration of drain removal was 4.32 ± 1.33 days in group A and 4.64 ± 0.93 days in group B, findings were statistically insignificant p-value-0.205.

In this study, 5.30% of patients of group A and 4.8.0% of patients of group B had developed postoperative infection which was statistically insignificant. While Guneri G et al[14] reported that only 1 patient had wound infection and 2 2 small necrotic areas were found in double drain group, while in this study no necrotic areas were found in both groups. In this study mean age of patients of group A was 49.08 ± 9.89 years and group B was 51.40 ± 13.59, statistically insignificant p-value 0.389. Excised Mass weight was lesser in group A as 255.45 ± 44.97grams as compared to group B 305.51 ± 62.76 grams. Mean volume of drain discharge was significantly higher in Group B 323.43 ± 158.88 ml, while it was in group A 230.29±200.98, findings were statistically significant 0.013. these findings were also comparable with the study of Guneri G et al[14] and Ebrahimifard F et al[17].

Conclusion

It is concluded that either one-drain or two-drain insertion are equally effective to reduce the seroma formation after modified radical mastectomy; however, one drain insertion leads to more patient compliance and comfort with probably less morbidity and cost.

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