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ORIGINAL RESEARCH

To determine the early postoperative outcomes of breast cancer surgery in a developing country

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ABSTRACT:
Aim: To determine the early postoperative outcomes of breast cancer surgery in a **developing** country.
Material and methods: One hundred people who had surgery for breast cancer were analysed. All patients had an ultrasound of the liver, a chest radiograph, and a bone scan to determine the clinical stage of their illness and evaluate any metastasis they may have. Five and fourteen days following surgery, as well as six weeks after surgery, patients were seen in clinic for follow-up evaluation. Early results were measured, and variables such as wound infection, seroma development, skin flap necrosis, hematoma, re-exploration, blood transfusion, and duration of hospital stay were recorded. Breast radiation therapy was recommended to those who underwent BCS.
Results: Out of 100 patients, 40% (40) had EBC and 60% (60) had LABC. The patients' mean age was 52.12±12.39 years, and the average length of operation was 1.8±0.52 hours. The average length of stay in the hospital was 2.2±0.54 days. The average number of axillary nodes recovered was 17.02±5.31, whereas the average number of positive nodes retrieved was 2.71±2.69 nodes. Table 4 shows the frequency of early problems in both BCS and MRM. 65% (65) of the patients included underwent MRM, while the remainder received BCS. Only 6% (6) of the patients had lobular carcinoma, with the remainder having invasive carcinomas that were not further characterized (NOS). All patients having BCS had EBC (p-value = 0.001).
Conclusions: Our growing data from cancer surgery in a developing nation indicates that a greater number of our patients had mastectomies, although our morbidity rates for both BCS and MRM are low and similar, with no statistically significant differences.
Keywords: breast cancer outcomes, modified radical mastectomy (mrm), breast conservation therapy

Introduction

For women, breast cancer is the leading cause of cancer death.[1] Cancer of the breast is the second leading cause of mortality among women.[2] The rate of breast cancer deaths is greatest in England and Wales, (27.7 per 100,000 populations).[3] According to the results of studies conducted by the International Agency for Research on Cancer (IARC) and the World Health

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Organization, the incidence of breast cancer among women in Eastern Asia and central Africa is the third lowest worldwide (WHO).[4] Since the 1940s, the number of new cases has risen consistently.[5] In the 1970s, 1 in 13 American women were predicted to be diagnosed with breast cancer; by 1980, this number had risen to 1 in 11; and by 2004, it had risen to 1 in 8.[6] The surgical options for breast cancer therapy range from a basic mastectomy to a modified radical mastectomy and even breast conserving surgery.[7] Most patients with breast cancer are treated with either a modified radical mastectomy or a large local excision with axillary dissection. Early complications of breast surgery include seroma development, skin flap necrosis, and wound infection, all of which raise the morbidity and death rate.[8] If an infection develops in a surgical site within a month after the procedure, it is considered postoperative.

Material and methods

One hundred people who had surgery for breast cancer were analysed. All patients had an ultrasound of the liver, a chest radiograph, and a bone scan to determine the clinical stage of their illness and evaluate any metastasis they may have. Those who had already had a modified radical mastectomy (MRM) or were in stage IV of their illness were not included in the research. Patients were classified as early breast cancer (EBC), which included stages IA, IB, IIA, and IIB, and locally advanced breast cancer (LABC), which included stages IIIA and IIIB, based on the American Joint Committee on Cancer (AJCC) breast cancer staging system. A MDT conference was held, in which the surgical oncologist, clinical oncologist, radiologist, and histopathologist discussed each patient. The most effective course of therapy was then determined and made available to the patients. The potential for BCS was evaluated in patients with EBC. Before obtaining patients' agreement for treatment, they were given information about the condition and their alternatives. Age, hypertension, diabetes, ischemic heart disease, antiplatelet treatment, and neoadjuvant systemic therapy were identified as factors that impeded wound healing. Every single patient had a level II axillary lymph node dissection. Diathermy was used during flap dissection, and both diathermy and sutures were used to ensure hemostasis throughout surgery. Both the axilla and the MRM flap were drained using closed suction drains. In instances with BCS, a single drain was inserted into the axilla. When the discharge had decreased to 30 ml during the previous 24 hours, the axillary drain was removed at following outpatient appointments, while the flap drain was removed at the time of discharge.

Any untoward occurrence during the first 30 days after surgery was classified as postoperative morbidity. Five and fourteen days following surgery, as well as six weeks after surgery, patients were seen in clinic for follow-up evaluation. Early results were measured, and variables such as wound infection, seroma development, skin flap necrosis, hematoma, re-exploration, blood transfusion, and duration of hospital stay were recorded. The patients were all given recommendations to see oncologists for further care. Pre- or post-operative chemotherapy was administered to patients based on the MDT's recommendation. Breast radiation therapy was recommended to those who underwent BCS. Treatment with endocrine drugs was started for patients with hormone receptor-positive illness after their menopausal status was determined. This research was conducted after receiving approval from the appropriate institutional review board.

SPSS 25.0 was used for the final analysis of the gathered data (IBM Corporation, Armonk, NY).

Results

Out of 100 patients, 40% (40) had EBC and 60% (60) had LABC. Table 1 shows the pathological distribution in relation to the surgical mode chosen.

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Table 1: The specific tumour pathology for both surgical techniques used

Histopathology	Invasive carcinoma not otherwise specified (NOS)	Invasive lobular carcinoma	Total	P value
Breast conserving surgery	33	2	35	0.62
Modified radical mastectomy	61	4	65	

65% (65) of the patients included underwent MRM, while the remainder received BCS. Table 2 further highlights the patients' comorbidities in relation to the surgical mode used.

Table 2: Pre-treatment parameter

Parameter	Modified radical mastectomy (65)	Breast conservation surgery (35)	Total	P- value
Diabetes mellitus	17	4	21	0.52
Hypertension	21	9	30	0.63
Ischemic heart disease	7	3	10	0.71
Asthma	2	3	5	0.81
Thyroid disease	0	4	4	0.15
Antiplatelet therapy	6	3	9	0.66

Only 6% (6) of the patients had lobular carcinoma, with the remainder having invasive carcinomas that were not further characterised (NOS). All patients having BCS had EBC (p-value = 0.001). (Table 3)

Table 3: A Clinical phases in patients following breast conserving surgery vs modified radical mastectomy

	Stage IA	Stage IIA	Stage IIB	Stage IIIA	Stage IIIB	Total
Breast conservation surgery	6	20	9	0	0	35
Modified radical mastectomy	0	6	3	45	11	65
Total	6	26	12	45	11	100

The patients' mean age was 52.12±12.39 years, and the average length of operation was 1.8±0.52 hours. The average length of stay in the hospital was 2.2±0.54 days. The average number of axillary nodes recovered was 17.02±5.31, whereas the average number of positive nodes retrieved was 2.71±2.69 nodes. Table 4 shows the frequency of early problems in both BCS and MRM.

Table 4: The postoperative outcomes of breast cancer surgery

Outcomes		MRM (N=65)	BCS (N=35)	Total	P-value
Seroma		5	2	7	0.42
Flap necrosis	Partial thickness	4	2	6	0.52
	Full thickness	0	0	0	
Wound infection		2	0	2	0
Hematoma		4	0	4	0.53
Re-exploration		1	0	1	0.19
Re-admission		1	0	1	0.28

As can be shown, there is no statistically significant difference in early problems between the BCS and MRM groups. In addition, the results of upfront surgery were compared to those of neoadjuvant chemotherapy, as shown in Table 5.

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Table 5: Early results in individuals who had neoadjuvant chemotherapy and surgery

Outcomes		Upfront surgery =72	Neoadjuvant chemotherapy =28	Total =100	P-value
Seroma		4	3	7	0.51
Flap necrosis	Partial thickness	4	2	6	0.63
	Full thickness	0	0	0	
Wound infection		2	0	2	0.81
Hematoma		3	1	4	0.69
Re-exploration		1	0	1	0.42
Re-admission		1	0	1	0.46

Discussion

A woman's decision to undergo breast cancer surgery is nevertheless a momentous one. Breast conservation via the use of several therapies has been standard care for women diagnosed with breast cancer in recent years. [9-11] The majority of these individuals follow a treatment plan that combines chemotherapy and radiation therapy. [12] Strict adherence to these regimens may predict successful surgical results, but any delay in treatment owing to associated morbidity might have a negative effect on patients' overall survival. [13] Most women in India are hesitant to seek medical help for breast-related illnesses, and this is mostly due to the country's insular and conservative societal customs. Thus, there is a need in Pakistan for psychological management of breast cancer patients, including but not limited to treatment, counselling, social support, and referral to an appropriate healthcare institution. Surgeons strive to carry out operations with positive postoperative outcomes, but a number of elements, including patient education, work together to provide the best possible results for patients with cancer. [11,14] The success of breast surgery recovery has been linked to a number of different variables. Tumor characteristics (tumour size, lymph node status), patient factors (age, weight, diabetes mellitus, hypertension, smoking), and surgical factors all have a role in the outcome (use of electrocautery for flap dissection, length of operation time). Adjuvant treatment delays due to wound-related problems are associated with increased risk of aesthetic impairment, patient suffering, and financial loss (13). [11] Adjuvant treatment should ideally begin within 31 days following the end of surgery, according to the National Institute for Health and Care Excellence (NICE). [15] European Society for Medical Oncology recommendations add that therapy should begin as soon as possible after surgery, preferably between two and six weeks.[11,14,15] However, oncologists are still hesitant to use chemoradiotherapy on patients who have a slowed healing rate or a compromised recovery. This hesitance is further complicated by the belief that most malignancies appear at an advanced stage in our region. [11] Adjuvant therapy delays may have severe consequences for overall and disease-free survival. Delaying adjuvant chemotherapy has been shown to have negative effects in several trials. [13-17] Seventy-two participants in our research had upfront surgery, with just one patient receiving delayed adjuvant therapy of more than six weeks' duration. Although the surgical results of patients who received BCS were comparable to those of patients who underwent MRM, fewer individuals got BCS due to the advanced stage of their cancer at presentation and a reluctance on the part of patients to accept radiation therapy. Patients receiving neoadjuvant therapy have the benefit of early and direct treatment response monitoring; nevertheless, they still need to be closely monitored for the possibility of disease progression. Since 30%-39% of patients with aggressive histology have a pathological full response to neoadjuvant systemic therapy in patients with LABC, this treatment option is becoming more common. [15] Importantly, we did not see an elevated frequency of problems in individuals who underwent neoadjuvant chemotherapy, a view that substantially corroborates the conclusions clarified by the worldwide data. [16]

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The production of seromas was the most common problem we saw in our patients. Different definitions and drain installation procedures contribute to a substantial discrepancy in the published literature about the occurrence of seroma.[16,17] Most patients will have some degree of fluid accumulation, but it will only be noticed when there is a substantial volume of fluid present. Furthermore, only a small percentage of individuals develop fluid aggregation severe enough or symptomatic enough to warrant aspiration. [18-20] Our practise standard was to insert an axillary drain and to have the patient leave the clinic with the drain still in situ at the time of discharge. On a subsequent outpatient clinic appointment, the drain was taken out. Only five individuals out of the whole cohort in our research really needed aspiration of their surgical wound. Despite being a common problem after breast cancer surgery, this issue may typically be resolved without delaying the start of adjuvant therapy.

After breast cancer surgery, skin flap necrosis is a serious but preventable complication.[11] It is important to collect a thorough medical history, including the patient's experience with ischemic heart disease, cerebrovascular accident, and diabetes, and to do a thorough clinical evaluation before any surgical procedure. [17] The thickness of the skin flap, the precision of the closure, and the appropriate use of diathermy continue to be the primary considerations in terms of the surgical methods used. The oncological plane between the subcutaneous fat and the breast parenchyma is used to maintain blood flow to the flaps after an evaluation of subcutaneous body fat. [11-13] The standard thickness for a skin flap is 6-8 mm. 11 It is classified as either partial or full thickness necrosis based on the Mayo clinic skin ischemia and necrosis score.[18] No patients had full-thickness necrosis throughout our study, however three MRM patients and one BCS patient did show signs of partial-thickness necrosis. This BCS patient with partial skin necrosis actually had level II oncoplastic surgery, which is why their scar is in the form of an inverted T. All of these individuals were treated in the outpatient department and given dressings. In addition, studies show a wide range (from 0.1 percent to 12.5 percent) in the incidence of surgical site infection after breast surgery.[17] When compared to previous studies that reported infection rates between 5.4% to 11.4%, our 2% rate for wound infections was much lower.[10] Infections at surgical sites were treated conservatively with antibiotics taken by mouth and antiseptic cloths applied topically.

The occurrence of hematomas in this research was 4% (n=4), which is consistent with data from other countries. Only one of these patients was able to be treated in the outpatient department; the other three had to be readmitted and further investigated. The adjuvant therapy was postponed for more than six weeks in each of these patients, which is a serious setback. His problem may be avoided with careful surgery on the generally bloodless oncological plane and hemostasis at the end of surgery. Three patients had blood transfusions after surgery, but none needed them during. Smooth recovery after breast cancer surgery may be achieved by aspects such as thorough preoperative evaluation, careful surgical technique, and quality postoperative care.

Conclusions

Our growing data from cancer surgery in a **developing** nation indicates that a greater number of our patients had mastectomies, although our morbidity rates for both BCS and MRM are low and similar, with no statistically significant differences.

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