

Overview of Breast Conservative Treatment for Early Breast Carcinoma: Experience at Sir Ganga Ram Hospital Lahore

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ABSTRACT

Background and Objectives: Treatment of early breast cancer involves surgery, chemotherapy and radiation therapy. Present study was designed to describe the cosmetic outcome, prognosis, recurrence rate and complications after breast conservative surgery in patients with early breast carcinoma.

Methods: A descriptive study was carried out at Surgical Unit III of Fatima Jinnah Medical University (FJMU), Lahore, Pakistan. A total of 54 female patients diagnosed with early breast carcinoma were included from July 2015 to January 2019. All of these patients underwent breast conservative surgery with axillary level II dissection or sentinel lymph node biopsy. Frozen section technique was used to evaluate clear surgical margins per operatively. These patients were followed up for a period of 12 months.

Results: Mean age of the patients was 49.6 ± 11.3 years. Stage I disease was found in $n = 17$ (31.5%) females while stage II in $n = 37$ (68.5%) patients. Most of the patients had invasive ductal carcinoma. Tumor free surgical resection margin status was 1mm-20mm and it was >10 mm in 32 (59.3%) patients. Post-operative good cosmetic outcome regarding symmetry of the breast (90.7%), shape of the breast (85.2%), shape of nipple (88.9%) and appearance of scar (81.4%) was observed. A total of 40 (74.1%) patients were satisfied with symmetry of breast, 41 (75.9%) patients were satisfied with shape of breast and 45 (83.3%) patients were satisfied with appearance of scar after breast conservative surgery through a validated questionnaire. Complications noted after the surgery were seroma in 1 (1.8%) and wound infection in 2 (3.7%) patients. Post Radiation oedema was seen in 44 (81.5%) and ulcers were seen in 6 (11.1%) patients. Local recurrence was developed in 2 patients (3.7%). Disease free survival was observed in 52 patients (96.3%).

Conclusion: Breast conservative surgery for early breast carcinoma is cosmetically good regarding the scar and shape of the breast after surgery and satisfactory for the patients to accept. There were minimal postoperative complications and low recurrence rate therefore breast conserving surgery in early breast carcinoma can safely be recommended for early breast carcinoma.

KEYWORDS: Early breast carcinoma, Breast conservative surgery, Quadrantectomy, Scar, Outcome.

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INTRODUCTION

Treatment of breast cancer requires surgery and the main aim of the surgery for breast cancer for last many years is the same; to eliminate the breast cancer from breast without leaving any deformity in the breast.¹ Several trials have recommended breast conservation therapy for early breast carcinoma (stage I & II disease) for having equal survival rate as compared to mastectomy.² Keeping in view international guidelines and to adapt new concepts in light of best available evidence, it is apparent that breast conservative surgery for early carcinoma, tumors can be successfully excised surgically from any quadrant of the breast by keeping and maintaining breast cosmesis and symmetry.³ During the last two decades, it is seen that there is relatively no difference between mastectomy and breast conserving surgery regarding over-all disease free survival.⁴ Local wide excision and oncoplastic surgery are the recommended procedures for breast conservative surgery through which adequate clear surgical margins and good cosmetic outcome can be achieved even in case of large tumours.⁵ Axilla can be managed by doing sentinel lymph node biopsy if axillary nodes clinically are not palpable or by axillary dissection for palpable nodes.^{6,7} In the present study, patients with early breast carcinoma with stage I and II disease underwent breast conservative surgery in which quadrantectomy, local wide excision or oncoplastic procedures were performed. For axilla, sentinel lymph node biopsy and axillary clearance was done. These patients were followed up for one year after the surgery for post-operative complications, local recurrence, patients' satisfaction and cosmetic outcome.

METHODS

This is a descriptive study in which 54 patients diagnosed with early breast carcinoma having stage I and stage II disease were included from July 2015 to January 2019. The patients presented in the breast clinic based at surgical outdoor department. Detailed clinical breast examination, radiological evaluation followed by true cut needle biopsy was planned. After confirmation of diagnosis of breast cancer, the decision for breast conservative surgery was made for the patients fulfilling the criteria of breast conserving surgery.

All findings were entered in the hospital record. Informed consent was taken from all the patients for breast conservative surgery after discussing with them the procedure, expected complications and cosmesis. These patients then underwent breast conservative surgery on planned elective list. Institutional Ethical approval was taken vide Letter No: 35-Publication-Surgery-III-1/ERC dated 24-02-2018.

Patients with stage I or II disease having unifocal lesions or those fulfilling the above-mentioned criteria for breast conservative surgery were included in the study and high-risk patients, with multifocal or stage III/IV disease were excluded from the study.

Preoperative evaluation was done by panel of two senior consultants who evaluated each patient uniformly regarding tumor size, histopathology, physical status of the patient and any comorbidity like diabetes or hypertension. After evaluation, patients were given time for surgery on elective list which was according to their physical status as diabetic patients required more time at least 2 or 3 weeks to achieve control of diabetes.

Postoperative evaluation was done by same panel of two senior consultants following the daily progress of the patient in the ward, examination of the wound, evaluation of drain output and decision to discharge the patient.

Hospital stay required by these patients was on an average 3 to 4 days after which they were discharged and were followed up for one year after the surgery. All patients had breast conservative surgery that was local wide excision, quadrantectomy and oncoplastic surgery with axillary level II dissection or sentinel lymph node biopsy. Frozen section technique was used to evaluate clear surgical margins per operatively. Immediate evaluation of surgical margins was calculated by measuring scale in mm by the histopathologist.

The tools used for diagnosis and staging were core biopsy and frozen section technique by the Pathology Department and ultrasound of the breast with mammogram.

All patients were referred for Radiation therapy to the Institute of Nuclear Medicine Lahore, Pakistan and they were followed up at one month, 3 months, 6 months and then one year after the radiation therapy for skin colour, odema or any

ulceration.

Cosmetic outcome was assessed on this criterion: (1) Symmetry of breast as compared to the contralateral breast, (2) Shape of the breast, (3) Shape of the nipple and (4) Appearance of scar.⁸

Patients were examined by a panel of two senior consultants (author) and another one part of the team against the set criteria on 3-point scale i.e., not good, moderately good and very good at 1 month, 3 months, 6 months and one year after the surgery (Fig.1).

Information regarding satisfaction of the patient with the type of surgery, scar and shape of the breast was recorded during follow by using a self-designed patient satisfaction questionnaire to evaluate patient's satisfaction after surgery. Translated in local language and the response from the patients were noted by the doctors who were part of the team assigned for follow up of these patients in breast clinic as some patients could not write.

STATISTICAL ANALYSIS

The data was analyzed by computer software SPSS version 23.0. Mean and standard deviation was calculated for quantitative variables i.e. age of patient, size of the tumour, while percentage was given for qualitative variables which were post-operative cosmetic outcomes, complications and patients' satisfaction.

RESULTS

Mean age of the patients was 49.6 ± 11.3 years. Married patients were 51 (93.20%) and unmarried patients were only 3 (6.80%). Stage II disease was found in 37 (68.5%) while stage I in 17 (31.5%) patients. On histopathology, most of the patients had (49; 90.7%) had invasive ductal carcinoma, while invasive lobular carcinoma was reported in 3 (5.6%) patients while in-situ ductal carcinoma was seen in 2 (3.7%) patients. Surgical procedures performed were local wide excision (32; 59.3%), quadrantectomy (8; 14.8%), oncoplastic surgery (9; 16.7%) and guide-wire localization for impalpable lesions (5; 9.3%).

For the management of axilla with palpable axillary lymph nodes, level II axillary dissection was done in 32 (59.3%) patients. Sentinel lymph

node biopsy (SLNB) by using blue dye was done for patients having impalpable axillary lymph nodes in 22 (40.7%) patients (Fig.2). Metastasis was found in 3 (13.6%) nodes while rest were negative.

The positive margin status ranged from 1mm-20mm and it was >10mm in 32 (59.3%) of the patients. Complications noted after the surgery were seroma formation in 01 (1.8%) patient while wound infection was observed in only 02 (3.7%) patients (Table-1). Odema of the breast after

Table-1: Post operative complications in patients (n = 54).

Sr.#	Post-surgical	Frequency	Percentage
1.	Seroma	01	1.8%
2.	Wound infection	02	3.7%
3.	Haematoma	nil	0%
4.	Odema	44	81.5%
5.	Radiation burn with ulcers	6	11.1%
6.	Recurrence	2	3.7%

radiation therapy was seen in 44 (81.5%), radiation burn with ulcers on the skin on irradiated area was seen in 6 (11.1%) patients (Table-1). Only 2 patients (3.7%) developed local recurrence which was detected during routine follow up. It presented as a small lump in the same breast after one year. This patient underwent modified radical mastectomy later. Another patient presented with lump in the breast but at different site after 9 months. She did not receive radiation therapy. Disease-free survival was observed in 52 patients (96.3%). Disease-free survival was calculated as a time period after curative treatment till no symptoms have appeared. Post-operative good cosmetic outcome regarding symmetry of the breast (90.7%), shape of the breast (85.2%), shape of nipple (88.9%) and appearance of cosmetically acceptable scar (81.5%) was achieved (Table-2-3) (Fig: 3).

Table-2: Cosmetic outcome in patients after breast conservative surgery (n=54).

Sr.	Cosmetic Outcome	Not Good	Moderately Good	Very Good
1.	Symmetry of breast as compared to contralateral breast	0 (0%)	5 (9.3%)	49 (90.7%)
2.	Shape of the breast	2 (3.7%)	6 (11.1%)	46 (85.2%)
3.	Shape of the nipple	1 (1.8%)	5 (9.3%)	48 (88.9%)
4.	Scar appearance	2 (3.7%)	8 (14.8%)	44 (81.5%)

Table-3: Patient satisfaction after breast conservative surgery (n=54).

Sr.	Features	Not Satisfied	Slightly Satisfied	Completely Satisfied
1.	Symmetry of breast	3 (5.6%)	11 (20.4%)	40 (74.1%)
2.	Shape of breast	5 (9.3%)	8 (14.8%)	41 (75.9%)
3.	Appearance of scar	3 (5.6%)	6 (11.1%)	45 (83.3%)



Fig.1: Breast Conservative Surgery – Immediate post-op.



Fig.2: Sentinel Lymph nodes.



Fig.3: Postoperative outcome for breast shape, symmetry and scar.

DISCUSSION

Treatment options for early breast carcinoma are

breast conservation and even mastectomy. It is a clinicians’ decision depending upon various factors but the decision making at the patients’ end is difficult.⁹ Results of both breast conservative therapy and mastectomy are comparable regarding prognosis and disease-free survival.¹⁰

In the current study, breast conservative therapy was performed in patients who presented with early breast carcinoma like stage I & II disease with no other specific risk factor in relation to breast carcinoma. All these patients were followed up for cosmesis, post-operative complications and local recurrence. Most of the patients presented with stage II disease and were married at the time of presentation. The stage II disease shows that presentation of breast carcinoma in this population is at earlier stage as compared to advanced stages reported in other studies from Pakistan. Disease free survival was therefore also high, 96.3%.

A study published in 2015 in California reports that in patients of early breast carcinoma with breast conservative surgery, >1mm free margins were achieved in 54% of patients and local recurrence was 1.2%. In the present study, margins were about >10mm in 59.3% of the patients but the local recurrence rate is more (3.7%).¹¹

Another study on breast conservative surgery for early breast carcinoma published in Greece in 2018, shows that the rate of local recurrence and distant metastasis was 2.4% (28 out of 1175 case) and most of their patients were node-negative with stage I, II disease and surgical margins were clear in all cases.¹² This study is quite similar to the present study as most of the patient were node negative with stage I & II disease and there were clear surgical margins in all cases but local recurrence is slightly higher which was 3.7% as one of our patient did not go for radiotherapy.

A study published in Egypt in 2016¹³ regarding management of early breast carcinoma with breast conservative surgery may be compared to the present study regarding medical age, tumor type and loco-regional recurrence. In the Egyptian study, average age of the patients was 52 years (range 24–80) with SD 10.8 and in the present study, mean age of the patients was 49.6 years (range 29-71) with SD 11.3. In the Egyptian study, the most common histological type of the tumor was invasive ductal carcinoma (95%) which is comparable to the present study (90.74%). Loco-

regional recurrence in the comparative study was 4.2% while in the present study, it is 3.7%. This comparison shows that the rate of loco-regional recurrence with breast conservative surgery is lower in the present study.

The results of present study are comparable with other studies regarding survival rates, recurrence, post-operative complications and cosmetic outcomes in breast conservative surgery for early breast carcinoma. A study on cosmetic outcomes after breast conserving surgery by De La Cruz et al.¹⁴ in 2016 has reported complications after breast conserving surgery including haematoma (2.5%), seroma (1%), wound infection (1.9%) and delayed wound healing (2.2%). In present study the complication rates after surgery were also quite lesser with no hematomas formation reported. Patients developed odema (81.5%) and ulcers on previous surgery scar (11.1%) due to post-operative radiotherapy. The complication after radiotherapy specially ulcer formation is to be taken care of as it is not acceptable for the patients as patients are being referred to another institute because of lack of facility in the hospital setting of this study.

CONCLUSION

It is concluded that breast conservative surgery for early breast carcinoma is cosmetically good because of its benefits for the patients. Firstly, the patients were more satisfied with scar and shape of breast after the surgery. Secondly, the breast conservative surgery is a better option as compared to mastectomy as breast is functionally and cosmetically being conserved. There are minimal postoperative complications and low recurrence rate, therefore breast conserving surgery in early breast carcinoma can safely be recommended for early breast carcinoma.

LIMITATIONS

Despite the above-mentioned findings are promising, a limitation of the present study is the sample size. It is due to the lack of compliance of patients who did not come for their follow-up as advised and hence are lost from data.

CONFLICT OF INTEREST

None to declare.

FINACIAL DISCLOSURE

None to disclose.

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Authors' Contribution

AK: Major contributions to the conception and design of the work and revised it critically for important intellectual content.

HR: Substantial contributions to the acquisition and analysis for the work.

NF: Substantial contributions to the interpretation of data for the work.

HA: Substantial contributions to the acquisition and interpretation of data for the work.

MA: Substantial contributions to the design of the work.