

RESULTS OF BREAST CONSERVATION SURGERY IN OPERABLE BREAST CANCER- OUR EXPERIENCE

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ABSTRACT

BACKGROUND

Incidence of breast cancer in urban India is about 34% of all women cancer. BCT (BCS + Whole Breast Radiotherapy) is the standard of care based on various randomised trials conducted in various part of the world for early breast cancer. Overall, survival and local regional recurrence rates of BCT is comparable to that of MRM. The BCS rates are higher (60% - 70%) in west compared to India (11% - 23%).

The present study was conducted to analyse the results of breast conservation surgery.

MATERIALS AND METHODS

This study was conducted at tertiary cancer hospital and comprised of retrospective collection of prospective data of patients, who underwent BCS from August 2014 - September 2017. Patients were diagnosed with breast cancer who underwent metastatic workup and discussed in the tumour board and offered the option of BCT.

RESULTS

Age range was 24 - 78 years and majority was premenopausal group. Most common tumour location was in the upper outer quadrant and most common histology was infiltrating ductal carcinoma, NOS type (88 out of 100). Majority of the tumours were cT1/T2 category. Local recurrence only developed in two patients (2%) and systemic recurrence only developed in 2% of patients. Five patients (5%) developed both local and systemic recurrence.

CONCLUSION

Breast conservation therapy should be offered for all early breast cancer provided no contraindications. BCS can be done safely at all tertiary centres and results are comparable with that of western standards.

KEYWORDS

Breast Cancer, Breast Conservation Surgery, Mastectomy.

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BACKGROUND

Incidence of breast cancer in urban India is about 34% of all women cancer.^{1,2} Management of operable breast cancer evolved from Halsted Radical Mastectomy to Patey's Modified Radical Mastectomy to Breast Conservation surgery by Keynes, Atkins et al, Hayward and Mustakallio and others.³⁻⁶ Quadrantectomy with Axillary dissection (QUART) described by Veronesi et al was the most popular Breast Conservation therapy.⁷

Now-a-days, most common surgical procedure for operable breast cancer are Breast Conservation therapy and Modified Radical Mastectomy (MRM).⁸ Factors define the

choice of procedure are patient's desire, breast tumour ratio, availability of radiotherapy facilities and surgeon's training.⁸

BCT (BCS + Whole Breast Radiotherapy) is the standard of care based on various randomised trials conducted in various part of the world for early breast cancer. Overall, survival (06) and local regional recurrence rates of BCT is comparable to that of MRM.^{2,9-17} Advantages of breast conservation surgery are better cosmesis, better body image, better psychological adjustment and sexual functioning.¹⁸⁻²⁰ BCS is not as popular as MRM in Indian surgeons. The BCS rates are higher (60% - 70%) in west compared to India (11% - 23%).

The rates of BCS has gradually increased due to patient's education, screening, neoadjuvant therapy and surgical training. Due to inherent differences in tumour biology, tumour stage and quality of care, concerns regarding the reproducibility of results achieved in western women compared to Indian women.^{21,22}

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MATERIALS AND METHODS

This study was conducted at tertiary cancer hospital and comprised of retrospective collection of prospective data of patients who underwent BCS from August 2014 - September 2017. Patients diagnosed with breast cancer underwent B/L mammogram, USG abdomen and pelvis, chest x-ray and liver function test. Then, patients were discussed in the tumour board and offered the option of either MRM or BCT. Large tumours and neoadjuvant candidates were excluded from the study.

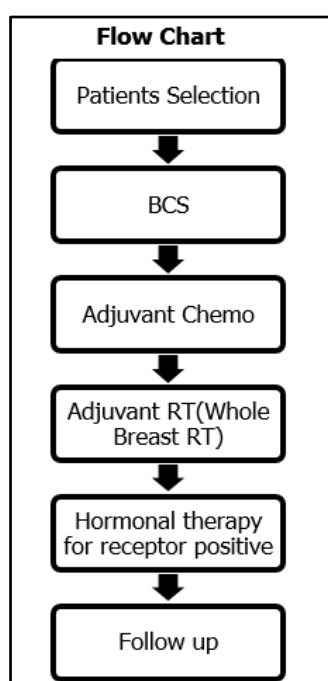
Inclusion Criteria

1. Tumour (T) stage- T1, T2
2. Nodal (N) stage- N0, N1
3. Patient's desire of breast conservation surgery.
4. Willing to undergo Radiotherapy (RT).

Exclusion Criteria

1. Neoadjuvant chemotherapy candidate.
2. Locally advanced breast cancer.
3. Previous excision biopsy.
4. Not willing for Radiotherapy.

Details like age, site and size of tumour, menopausal status, histology, PTNM, margin status, adjuvant, neoadjuvant, hormonal receptor status, complication of treatment, locoregional or distant failure rates were measured. Cosmetic outcome was assessed. After completion of treatment, patients were called every 3 monthly for first 2 years and then every 6 monthly for followup. At each visit evaluation included detailed history, physical examination and symptom directed evaluation. Baseline mammogram was obtained 6 months after completion of radiotherapy and annually thereafter. Women receiving tamoxifen were referred for annual gynaecological examination.



RESULTS

During the study period, total 258 breast cancer patients underwent surgery. Among these, 154 cases underwent MRM and 104 cases underwent BCS. So BCS rate was 40%. But 4 BCS patients were lost for followup. Hence, 4 patients are not included in the study.

Age range was 24 - 78 years and premenopausal 60% and post-menopausal 40% (Table 1).

Most common tumour location was in the upper outer quadrant followed by upper inner quadrant (Table 2). Fine needle aspiration cytology (FNAC) alone was used to diagnose in 88 patients. Core needle biopsy was performed for equivocal FNAC report cases. The most common histology was infiltrating ductal carcinoma; NOS type (88 out of 100). Majority of the tumours were cT1/T2 category (31%, 64%) and 5% of the tumours belonged to cT3 (Table 2).

Most commonly performed procedure was lumpectomy (46 of 100 patients) followed by oncoplasty (26 patients).

Sixty nine (69%) patients underwent only level 1 and 2 axillary dissection and remaining 31 patients had complete (levels 1 - 3) axillary dissection. Average nodal yield was 11 (range 1 - 32). Majority had node-negative disease (48, 55%). Seventy eight patients (82%) achieved negative margins at first attempt and 18 had close margins and DCIS at cut margins. Revised margins were resent to frozen section and negative margins were obtained (Table 3).

Eighteen patients (20%) developed immediate postoperative complications, most common being wound related followed by seroma. Apart from this, mild-to-moderate lymphoedema of ipsilateral arm was a long-term complication in 13 patients (15%) (Table 3).

Hormone receptors were positive in 78 patients and negative in 22 patients. Postoperative chemotherapy was employed in 75 patients. Most common postoperative regimen used was four cycles of 3-weekly AC. Twenty five patients (25%) did not receive any chemotherapy due to favourable tumour characteristics (Table 4).

After the completion of chemotherapy (if any), all patients received whole breast irradiation. Lumpectomy cavity boost in addition to whole breast RT was given to 12% patients (Table 4).

Local recurrence only developed in two patients (2%) and systemic recurrence only developed in 2% of patients. Five patients developed both local and systemic recurrence (Table 5).

	Number	Percentage
1. Age		
< 40 yrs.	26	26.00%
41-59	56	56.00%
> 60 yrs.	18	18.00%
2. Menopausal Status		
Pre-Menopausal	60	60.00%
Post-Menopausal	40	40.00%

Table 1. Patient Characteristics

1. Side		
Right	59	59.00%
Left	41	41.00%
2. Quadrant		
Upper Outer	51	51.00%
Upper Inner	05	05.00%
Lower Inner	10	10.00%
Lower Outer	32	32.00%
Central	02	02.00%
3. Tumour Size		
< 2 cm	31	31%
2-5 cm	64	64%
5-6 cm	05	05%
4. Pre-operative diagnosis		
FNAC	88	88%
Core Needle Biopsy	12	12%
5. Histology		
IDL	88	88%
ILC	02	2%
Colloid	08	8%

Table 2. Tumour Characteristics

1. Type of Surgery		
Lumpectomy	58	58%
Quadrantectomy	12	12%
Oncoplasty	22	22%
LD Flap	08	08%
2. Types of Incision		
Circumareolar Incision	41	41%
Radial	44	44%
Round block technique	10	10%
Submammary	05	05%
3. Complications of Surgery		
Seroma	11	11%
Wound Infection	07	07%
Lymphoedema	02	02%

Table 3. Surgery Characteristics

1. Chemotherapy		
Adjuvant	75	75%
No Adjuvant	25	25%
2. RT		
EBRT only	88	88%
EBRT + Boost	12	12%
3. Hormonal Receptor Status		
Positive	78	78%
Negative	22	22%
4. Hormonal Treatment		
Tamoxifen	48	62%
Letrozole	17	22%
Anastrozole	13	16%

Table 4. Adjuvant Therapy Status

Local only	2	2%
Systemic only	2	2%
Local + Systemic	5	5%

Table 5. Treatment Failure Status

DISCUSSION

Breast cancer has become the most common women cancer in urban India. In western countries, BCS has become the standard of care.^{9-11,23-28} Due to advanced stage at presentation, cost of treatment, surgeon's and patient's

awareness, BCT is still not popular in India.^{1,29,30} But recently BCS rates were increasing due to patient's awareness, surgeon's training and facilities. BCS have tremendous effect on her psychological and social health.²²⁻⁴⁰ BCS trend has increased over years, probably due to widespread use of mammography.^{6,30} BCS rate in our study is 40%, which is comparable to the western population.

In present study the median age is diagnosed in 45 yrs., which is decade younger than western population. One-third of cases younger than 40 yrs. of age and reflex a preference towards BCS.²¹ Most women were pre-menopausal and majority were diagnosed by FNAC and core needle biopsy was opted for NACT patients.

Seroma, lymphoedema and wound infection are reported complications of BCS. Complication rate in the present study was 23%. Complication rate of various study was 10% - 30% (44.4%).

The success of BCT largely depends on cosmetic outcome and self body image. Poor cosmesis outcome is due to volume of breast exercised. Post cosmesis outcome is due to patient and treatment related factor. Patient related factors are younger age, large body habitus, large tumours, tumour site (superomedial, inferolateral tumours). Treatment factors are re-excision, seroma and breast radiation. Poor cosmesis results are overcome by oncoplasty and reconstruction.⁴¹⁻⁴³ In this study, patient's satisfactory exceeds in 90%.

For node negative patients, sentinel node biopsy has been the standard and it reduces the morbidities associated with axillary dissection.⁴⁴ Owing to lack of nuclear medicine facilities, level 1 and level 2 axillary dissections is done for all patients.

Majority received adjuvant chemo and hormonal therapy based on receptor status.

RT is an integral part of BCT. Recent trials suggests it can be safely omitted in hormonal positive tumours less than 5 cm. Complications associated with radiotherapy are dermatitis, oedema, fibrosis and scarring.

Acceptability of BCS depends on patient's education and economic surgeon's trading. When given a choice, most women prefer BCS. The present study highlights the acceptability of BCS and results refer to mastectomy.

Among the recurrence, local recurrence rate was 2% which could be surgically salvaged and five patients had developed systemic disease and local recurrence. This shows type of local treatment rarely determines the OS. Hence, attempts are being made by various investigators to avoid axillary dissection or sentinel node biopsy even in node positive patients. The local recurrence after BCS can be classified as either true occurring within the vicinity of tumour bed or false, which are actually new or second primaries. Most of the true recurrences occur within 2 years of completing the treatment. The factors known to increase the risk of local recurrence include young age, status of resection margin, presence of extensive intraductal component and the lymph node involvement.^{7,45} But in the present study as the total number of events was small, we could not find any statistically significant association. Nearly,

30% of patients in the present study were younger than 40 years of age and local recurrence rate in this subgroup was only 5%. But four of the seven recurrences occurred in this subgroup. Another potential problem in the young population is the risk of developing second primary in the conserved or contralateral breast.^{46,47} Due to short duration of followup, local and systemic recurrence rate may not be significant but comparable to that of other studies.

CONCLUSION

Breast conservation therapy should be offered for all early breast cancer provided with no contraindications. BCS can be done safely at all tertiary centres and results are comparable with that of western standards.

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