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ABSTRACT

Background: Breast carcinoma is considered as one of the best studied cancers that affect the mankind. The understanding of cancer breast has undergone a lot of change in recent years and many more modalities of treatment advocated. No single modality of treatment can be the mainstay of therapy. One of them is breast conservation treatment (BCT) comprises BCS and whole breast radiotherapy. But in India, BCT is not popular among the surgeons (11-23% vs. > 60-70% in west). The advantages of BCS over MRM include, better body image, sexual functioning and better psychological adjustment. In view of this, the present study was undertaken to highlight the importance of BCT and comparison of post-operative events with MRM.

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Study the Incidence of Early Breast Cancer in Southern Odisha and Number of Bct Performed

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ABSTRACT

Background: Breast carcinoma is considered as one of the best studied cancers that affect the mankind. The understanding of cancer breast has undergone a lot of change in recent years and many more modalities of treatment advocated. No single modality of treatment can be the mainstay of therapy. One of them is breast conservation treatment (BCT) comprises BCS and whole breast radiotherapy. But in India, BCT is not popular among the surgeons (11-23% vs. > 60-70% in west). The advantages of BCS over MRM include, better body image, sexual functioning and better psychological adjustment. In view of this, the present study was undertaken to highlight the importance of BCT and comparison of post-operative events with MRM.

Aim and Objective:

- To study the incidence of early breast cancer in southern part of Odisha, India and number of BCT performed at M.K.C.G. Medical College and Hospital, Berhampur from August 2018 to June 2021.
- To evaluate the possibility of BCT in cases of LABC after neo-adjuvant chemotherapy.
- To compare BCT with MRM in terms of quality of life and postoperative complications.

Patients and Methods: The present study was carried out in the PG department of General Surgery and Oncosurgery Wing of M.K.C.G. Medical College & Hospital from August 2018 to June 2021 (including 12 months of follow up period).

After reception at outpatient departments, all the patients are registered and their physical examination and required investigations were

carried out after taking proper informed consent. Detailed assessments of cases are done according to preformed proforma.

Total no of cases included in this study are 20. We have selected stage I & II and few cases of stage III A for our study.

Results: In our study, as the study period is only 2 years and follow-up period was only 12 month, so overall survival is 100% for both BCT & MRM. Recurrence rate for BCT is 15% and for MRM is 5%. Out of Several studies maximum show that overall survival rate for both BCT and MRM group are almost same and comparable. Recurrence rate in case of BCT is high as compared to MRM except in study of Fisher et al and Blichert-Toft et al where recurrence rate in MRM is high.

Conclusion: It is a challenge for a surgeon to do BCS in early breast cancer case, as till now both the patients and the surgeons are in favour of MRM for reasons of safety and due to fear of recurrences. We felt that both the surgeons in the periphery and the women folks need to be made aware about the huge benefits of BCT in comparison to MRM. While selecting the patients, proper criteria must be adhered to. Radiation is a must after BCT but failing, for which the incidence of local recurrences goes up.

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I. INTRODUCTION

Breast carcinoma is considered as one of the best studied cancers that affect the mankind. It is quite natural that the disease of the breast and surgery on it should evoke a fear of mutilation and lose of femininity because breast has always been a symbol of womanhood and ultimate fertility.

Cosmetic consideration, ignorance regarding the breast tumour and fear of losing femininity have hindered its early diagnosis. This is specially so in developing countries like India where about 70% of female population are illiterate. This is the main cause of late presentation of breast cancer where breast conservation surgery is not possible.

The understanding of cancer breast has undergone a lot of change in recent years. No single modality of treatment can be the mainstay of therapy.

Surgery for operable breast cancer has evolved a long way since W. Halsted first described radical mastectomy in 1894. In order to lessen the cosmetic and functional morbidity associated with classical radical mastectomy, various modifications were described by Patey, Madden and Auchinlaus to name a few. Further, contributions from Keynes, Atkins et al, Mustakallio, Hayward and others, firmly established the breast conserving techniques^{1,2,3,4}.

Veronosi et al described their results of Quadrantectomy with axillary dissection and radiotherapy (QUART)⁵. At present, most common surgical options for operable breast cancer are modified radical mastectomy (MRM) with or without reconstruction and breast conservation surgery (BCS). Choice of the procedure depends on various factors like surgeon's training, patient's desire, size of the tumour to breast ratio, the presence of contraindications for conservation and availability of radiotherapy facilities.

In spite of tremendous development in the field of breast carcinoma management, a standard management protocol is yet to be developed. In view of this, the present study was undertaken to highlight the importance of BCT and comparison of post-operative events with MRM.

II. AIM AND OBJECTIVE OF THE STUDY

- To study the incidence of early breast cancer in southern part of Odisha, India and number of BCT performed at M.K.C.G. Medical College and Hospital, Berhampur from August 2018 to June 2021.

Materials: The present study was carried out in the PG department of General Surgery and Oncosurgery Wing of M.K.C.G. Medical College & Hospital from August 2018 to July 2021 (including 12 months of follow up period).

Inclusion criteria

- Small tumours in comparison to the breast size.
- Younger Age patients.
- Patient Compliance to take up radiotherapy after BCT.
- Stage I & Stage II carcinoma

Exclusion Criteria

- Locally advanced Breast Cancer (LABC)
- Multicentric breast cancer.
- Diffuse (malignant) micro-calcifications.
- Carcinoma with Pregnancy.
- Patients with mutations on BRCA-1 &2 genes (strong family H/O Breast carcinoma)
- History of radiation
- Advanced carcinoma breast
- Patient not willing for post op radiation therapy

Total no of cases included in this study are 20. We have selected stage I & II and few cases of stage III A for our study.

III. METHODS

After reception at outpatient departments, all the patients are registered and their physical examination and required investigations were carried out after taking proper informed consent. Detailed assessments of cases are done according to preformed proforma.

Routine Investigations

Blood Counts, LFT, Serum Profile, etc.

Special Investigations

Core needle Biopsy, ER, PR, HER2 neu receptor status, CT scan of Abdomen and Pelvis, X ray

Chest, X ray Brain and Spinal cord, Ultrasound of Breast and Axilla.

IV. RESULTS AND DATA ANALYSIS

The present study of “Breast Conservation Surgery in carcinoma” was conducted on the patients of early breast cancer and cases of LABC were admitted in the indoor of Dept, of General surgery of MKCG Medical College & Hospital, Berhampur, during the period from August 2018 to July 2021.

Table-1: Distribution of Cases

Total Malignancy	No. of Carcinoma Breast	No. of Early Breast Cancer	No. of BCS Performed
1012	114	21	20

Table-2: Age Distribution of Breast Cancer

Age in years	No. of patients	Percentage
31-40	11	55
41-50	06	30
>50	03	15

Table-3: Age at Menarche

Age in years	No of patients	Percentage
<15	15	75
15-20	5	25

Table-4: Marital Status

Status	No. of patients	Percentage
Married	19	95
Unmarried	01	5

Table-5: Age at First Child Birth and Breast Feeding

Age in years	No. of Patients	Percentage
<20	2	10%
20-30	12	60%
>30	2	10%

Table-6: Type & Duration of Symptoms

Symptoms (type)	Duration	No. of patients	Percentage
Lump	<6 month	5	90
	6-12 month	13	
Axillary Lymph Node	6-12 month	13	65

Table-7: Side of Involvement

Side	No. of Patients	Percentage
Right	13	65
Left	7	35

Table-8: Site (Quadrants) of Involvement

Site (Quadrant)	No. of Patients	Percentage
Upper outer	8	40
Lower outer	5	25
Upper inner	4	20
Lower inner	3	15

Table-9: Investigations

Findings (%)	Number Of Patients	Percentage
Ultrasound Of Breast	08	100
Ultrasound Of Axilla	11	55
Trucut Biopsy	20	100
FNAC Of Axillary Lymph Nodes	13	65
X-Ray Mammogram of Breast	12	100
+Ve X-Ray Chest	0	0
+Ve X-Ray D-L Spine	0	0

Table-10: Histopathological Results

Type	No. of Patients	Percentage
Infiltrating Ductal Carcinoma	18	90
Infiltrating Lobular Carcinoma	02	10
Axillary Lymph Nodes Positive	15	75
Tumor Free Resected Margin (Microscopical)	19	95

Table-11: TRU-CUT Biopsy Result

Result	No. of patients	Percentage
ER &PR Positive, HER 2 neu (-)	18	90
Triple Negative	02	10

Table-12: Early -Post Operative Complications

Early Complication	No. of Patients		Percentage	
	BCS N=20	MRM, N=20	BCS N=20	MRM, N=20
Hemorrhage	0	1	0	5
Infection	2	4	10	20

Table-13: Late-Post Operative Complications

Late Complications	No. of Patients		Percentage	
	BCS N=20	MRM, N=20	BCS N=20	MRM, N=20
Neuralgia	3	4	15	20
Lymphoedema	2	3	10	15
Wound gaping	2	4	10	20
Seroma	1	1	5	5

Table-14: Our Study Results

Clinical Stage	No. of Patients	Disease Free Survival over 1 year		Local recurrence	
		No. of Patients	Percentage	No. of Patients	Percentage
IA	2	2	100	0	0
IIA	8	8	100	0	0
IIB	7	6	85.71	1	14.28
IIIA	3	1	33.33	2	66.67
Total	20	17	85.00	3	15.00

V. DISCUSSION

5.1 Indian Scenario

Over 100000 new breast cancer patients are estimated to be diagnosed annually in India^{6,7}. As per recent ICMR (2017) data, breast cancer is the commonest cancer among the women in urban areas of Delhi, Mumbai, Ahmadabad, Kolkata, Trivandrum, where it constitutes more than 30% of all cancers in female⁸

It is estimated that of the 100000 patients that are treated for breast cancer In India, only about 1000 are treated for breast conserving therapy⁹. A study from Delhi⁴⁰ showed only 11.3% underwent BCS, while MRM was performed in 88% cases. BCT in India ranges from 11-23% whereas in western countries it ranges from 60-70%.

A total of 74,861 cancer inpatients were registered at AHRCC between the year 2001-2011. The number of female cases increased four folds and that of males three-fold over this period. Carcinomas of breast (28.94%), cervix (23.66%) and ovary (16.11%) were leading among females¹⁰.

Breast conservation has become the standard of care in Western countries for early breast cancer^{11,12,13}. In India, BCT is still not popular due to various reasons like advanced stage at the time of presentation, lack of screening programmes, lack of awareness amongst surgeons and patients, fear of recurrence¹⁴. In the recent years, many centres have come up with appropriate equipment and infrastructure facilities, which will influence the treatment and outcome of patients with breast cancer in India. Now, with the latest technology, it is possible that every patient with breast cancer can have option of conserving breast which will have tremendous impact on her psychological and social health¹⁵. Worldwide trend to conserve

breast has increased over years, which is also reflected in the present study as well as other studies from India¹⁶. Such a trend could be attributed partly to the early detection by wide spread use of mammography.

In our hospital admission from August 2018 to July 2021, a total of 1012 patients were diagnosed with cancers of different organs. Carcinoma breast was diagnosed in 114 patients which brought the incidence to be 11.2% of total malignancies. This incidence was in conformity with the observation of Reddy and Reddy (1958) from Visakhapatnam, Tyagi et al (1965) from Kanpur and Jussawal and Gangadharan (1974), whose Findings were 11.1%.

5.2 Age distribution of Disease

In this study, the youngest patient in our series was 33 year and oldest was 53 years. Majority of patient presenting with early-stage breast cancer were in the 31–40-year age group, with mean age of 36 years.

Age distribution of cases showed that 55% of all cases were under the age of 40 and 45% of cases were above the age of 40. In India, the average age of developing breast cancer has undergone significant shift over the last few decades. 25 years back, out of every 100 breast cancer patients, 2% were in 20-to-30-year age group, 7% were in 30 to 40 group and so on. 69% of the patients were above 50 years of age. Presently, 4% were in 20-to-30-year age group, 16% were in 30-to-40-year age group, 28% were in 40-to-50-year age group. Almost 48% patients were below 50-year age. An increasing number of patients are in 25 to 40 years of age and this definitely is a very disturbing trend.

5.3 Disease Distribution among the Social Status

Breast carcinoma is more prevalent in the upper middle class, according to “International Journal of western lifestyle”. In our series, we have cases of both early breast cancer and LABC. While most early cancers came from educated and good socioeconomic group, patients with LABC were mostly from low socio-economic group.

5.3 Plan of Treatment in Early-Stage Breast Cancer Patients

Treatment planned in early-stage breast cancer patients (stage I stage IIA, stage IIB) was BCT, i.e.; wide local excision of the tumour with axillary node dissection followed by radiotherapy. All (except stage 1) cases were subjected to systemic adjuvant chemotherapy after radiotherapy. NACT was given to the patients of locally advanced breast cancer in stage IIIA to downstage and downsize the tumour so that it becomes suitable for BCT.

5.4 Neo-adjuvant Chemotherapy with AC/CAF/ Paclitaxel alone

Base-line clinical documentation of the disease and staging is done in each patient. Neo-adjuvant chemotherapy is instituted taking the BMI of the patient. Clinical documentation of response is done at each cycle for evaluating the primary tumour & nodal size till maximum tumour shrinkage is achieved. Patients are usually offered 3-4 cycles of NACT¹⁷ and then evaluate for CR/PR/NR. Surgical treatment option is either BCT or MRM depending up on the response to NACT. Dose of chemotherapy regimens was applied.

The response to neo-adjuvant chemotherapy was evaluated by physical examination and ultrasonography or mammography. Clinical responses were defined by the primary tumour and axillary lymph node response and were categorized as follows : complete response (CR) = total resolution of the breast mass and axillary adenopathy on physical and radiographic examination ; partial response (PR) = 50% or greater diminution of bi-dimensional tumour or axillary lymph nodes ; stable disease (SD) = no more than 25% increase or decrease in tumour

size or no change in lymph node ; progressive disease (PD) = more than 25% increase in tumour.

5.5 Adjuvant Hormone Therapy

Literature has shown that women treated for ER+ breast cancer benefit from receiving at least 5 years of adjuvant hormone therapy. Tamoxifen has been approved by the FDA for adjuvant hormone treatment of premenopausal and postmenopausal women (and men) with ER+ breast cancer, anastrozole and letrozole have been approved for this use in postmenopausal women.

A third aromatase inhibitor, Exemestane is approved for adjuvant treatment of breast cancer in post-menopausal women who have received Tamoxifen previously.

Until recently, most women who received hormone therapy to reduce the chance of a breast cancer recurrence took tamoxifen every day for 5 years¹⁸. However, with the advent of newer hormone therapies, some of which have been compared with tamoxifen, additional approaches to hormone therapy have become common. For example, some women may take aromatase inhibitor every day for 5 years instead of tamoxifen. Other women may receive additional treatment with an aromatase inhibitor after 5 years of tamoxifen. Finally, some women may switch to an aromatase inhibitor after 2 or 3 years of tamoxifen, for a total of 5 or more years of hormone therapy.

Decisions about the type and duration of adjuvant hormone therapy must be made on an individual basis. This is best carried out by an oncologist. Commonly used hormone therapy is given below:

- Tamoxifen: (if ER/PR +ve) for a period of 5 years.
- Anastrozole: 2.5 mg /day for a period of 5 years.

In our study, all patients underwent BCT and 90% of total patients (18) were offered Tamoxifen (20mg) and 10% patients (2) were offered Anastrozole as their adjuvant hormonal therapy.

5.6 Postoperative Radiotherapy

If adjuvant chemotherapy is indicated after wide local excision, it should be given after radiation therapy is completed. All patients undergoing BCS should receive radiation therapy of 38.5Gy in 10 fractions delivered twice per day in a week for 5-6 week with external beam phototherapy to the tumour bed is recommended. This guide line is as per the NCCN Guidelines²¹ Version 1.2015, BREAST CANCER.

VI. CONCLUSION

It is a challenge for a surgeon to do BCS in early breast cancer case, as till now both the patients and the surgeons are in favour of MRM for reasons of safety and due to fear of recurrences. We felt that both the surgeons in the periphery and the women folks need to be made aware about the huge benefits of BCT in comparison to MRM. While selecting the patients, proper criteria must be adhered to. Radiation is a must after BCT but for which the incidence of local recurrences goes up.

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