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Original Research Article

A Prospective and Observational Study of Clinical Presentation, Stage of Disease and Outcome of Carcinoma Breast in A Tertiary Care Hospital

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Abstract

Introduction: The carcinoma of breast due to its uncertain cause has drawn the attention of physicians throughout the ages. It is one of the commonest cancers occurring in female worldwide and it is a devastating illness both physically and mentally.

Aims: To observe different stages of presentation, to observe the pathological types and receptor status and to find out different management protocols.

Materials and Methods: The present study was conducted in Department of General surgery, NRS Medical College & Hospital, during the period from March 2020 to August 2021. 150 patients were included in this study.

Result: In our study we grouped ca breast in 4 categories after obtaining the IHC report of ER, PR and her2 neu status from either pre op true cut biopsy or from excised specimen. A total of 87 patient (58%) were ER/PR +VE and her 2neu -VE followed by 33 cases (22%) who were negative for ER, PR or her 2neu (also known as triple negative breast carcinoma). 22 cases (14.67%) were ER or PR +VE and her 2neu +VE. Only 8 cases (5.33%) were in ER/PR -VE and her2neu +VE category.

Conclusion: According to molecular subtype depending on receptor status ER/PR positive with Her 2 neu negative subtype (also known as luminal A) was found to be the most common subtype followed by triple negative breast carcinoma. Surgery and chemo/radio therapy is the mainstay of treatment. Modified radical mastectomy (MRM) was the most surgical treatment performed in early breast carcinoma and in locally advanced breast carcinoma after receiving neo adjuvant chemotherapy followed by palliative or simple mastectomy done in metastatic breast carcinoma.

Keywords: Modified Radical Mastectomy, Breast Cancer and Histopathological Types.

Introduction

The carcinoma of breast due to its uncertain cause has drawn the attention of physicians throughout the ages. It is one of the commonest cancers occurring in female worldwide and it is a devastating illness both physically and mentally. In India, Breast cancer is second most common, malignancy among women next to Carcinoma cervix. As in most commonly it presents as painless lump

patients neglects and comes to hospital often in late stage of the disease.[1]

With increasing prominence and greater visibility in country specific health profiles around the world, breast cancer and its prevention, detection and treatment and will continue to emerge as major priority and challenge, for health system in the near future.

In the past decades the principles of surgical management of breast cancer have undergone an enormous change. With the suggestion that the behaviour of a breast cancer is often the expression of systemic disease present at the time of diagnosis, surgical management of local disease has become more conservative.

As carcinoma of breast is quite a common clinical problem encountered in surgical practice, this study is an attempt to identify different modes and stage at the time of presentation, histopathological types, receptor status, various modes of management and outcome of the disease.

Breast cancer is the most common cancer diagnosed in women, accounting for more than 1 in 10 new cancer diagnoses each year. It is the second most common cause of death from cancer among women in the world. Anatomically, the breast has milk-producing glands in front of the chest wall. They lie on the pectoralis major muscle, and there are ligaments support the breast and attach it to the chest wall. Fifteen to 20 lobes circularly arranged to form the breast. The fat that covers the lobes determines the breast size and shape. Each lobe is formed by lobules containing the glands responsible for milk production in response to hormone stimulation. Breast cancer always evolves silently. Most of the patients discover their disease during their routine screening. Others may present with an accidentally discovered breast lump, change of breast shape or size, or nipple discharge. However, mastalgia is not uncommon. Physical examination, imaging, especially mammography, and tissue biopsy must be done to diagnose breast cancer. The survival rate improves with early diagnosis. The tumor tends to spread lymphatically and hematologically, leading to distant metastasis and poor prognosis. This explains and emphasizes the importance of breast cancer screening programs.[2]

Materials And Methods

Study Area: Selected from indoor of both emergency and elective ward of General Surgery, NRS Medical College and Hospital with FNAC or biopsy proven carcinoma breast.

Study Population: Patient diagnosed as a case of Carcinoma breast by FNAC/True cut biopsy.

Study Period: March 2020 to August 2021

Sample Size: 150

Study Design: Prospective Observational Study

Inclusion Criteria: Patients diagnosed as carcinoma breast with the help of clinical radiological and cytological examination

Exclusion Criteria:

i. Benign breast lump

ii. Male breast carcinoma

Result and Discussion

The present study was conducted in Department of General surgery, NRS Medical College & Hospital, during the period from March 2020 to August 2021.

As the study is prospective and observational study and the results obtained from the study were compared with the similar studies available in literature, and as no hypothesis were formed or tested this study involved no control group. 150 cases admitted to surgical ward with proved carcinoma breast were studied in detail.

Table 1: Symptoms of Breast carcinoma

Symptoms of Breast carcinoma		
Symptoms	**Number of Cases (n=150)**	**Percentage (%)**
Lump only	117	78
Lump with ulceration	8	5.33
Lump with pain	21	14
Lump with nipple discharge	3	2
Others	1	0.67

Table 2: Histological type of Breast carcinoma

Histological type of Breast carcinoma		
Histological type	**Number of Cases (n=150)**	**Percentage (%)**
IDC NOS	133	88.67
Lobular carcinoma	7	4.67
Medullary carcinoma	8	5.33
Others	2	1.33

Table 3: Receptor status of Breast carcinoma

Receptor status of Breast carcinoma		
Receptor Status	**Number of Cases (n=150)**	**Percentage (%)**
ER/PR +ve Her 2 neu +ve	22	14.67
ER/PR +ve Her 2 neu -ve	87	58
ER/PR -ve Her 2 neu +ve	8	5.33
ER/PR -ve Her 2 neu -ve	33	22

Table 4: Surgical Management of Breast carcinoma

Surgical Management of Breast carcinoma		
Surgery	**Number of Cases (n=150)**	**Percentage (%)**
BCS	6	4
MRM	128	85.33
PM/SM	16	10.67

Age Distribution: In the current study maximum incidence of breast carcinoma was noticed in age group between 41-50 years. The youngest patient was of 27 years and oldest was 67 years.

The average age of the patients affected was 47.56 years which is in concordance to age of 45.8 years quoted by Haque et al. He reported the breast cancer occurs a decade earlier in Indian women than westerns which is same in the present series also because western authors have reported 51.9 and 53.7 years as average age for cancer of breast. The age group 41-50 constituted 42% of cases, which was higher compared to the study conducted by T.K. Das Gupta[3] et al (33%). The incidence of the breast carcinoma is very less in age below 31 years (3.33%) and above 60 years (8%) at the time of presentation.

Side Distribution: In this study we found 78 cases of breast carcinoma in right side (52%) and left sided breast carcinoma in 71 patients. We also found a case of bilateral breast carcinoma in this study.

Site Distribution: Our study revealed that upper outer quadrant (58%) was the most commonly involved site for carcinoma breast followed by upper inner quadrant; central quadrant each constituting 12%. Lower outer quadrant constituting 11.33%, lower inner quadrant constituting 6.67%, Marshall and Higginobotham's[4] who had pathology in the following order, UOQ-60%, UIQ- 12%, LOQ-10%, LIQ-6%, Central-12%. The occurrence of carcinoma more in UOQ is explained by the fact that UOQ has more of breast tissue than other areas.

Clinical Presentation: In our study lump in the breast was the most Common presenting complaint. After through clinical examination of all patients, we found lump in all the cases except one case which was presented as acute granulomatous mastitis with symptoms of erythema, pain and swelling which later diagnosed as inflammatory breast carcinoma. Lump in the breast with ulceration of the skin was present in 5.33%, Painful lump in the breast was found in 14% of the cases and nipple discharge was seen in 2% of cases.

Gang et al.[5] had 74% painless lumps, 13.89% painful breast lumps, 2.78% nipple discharge, 3% nipple retraction and 6.48% ulceration and fungation in his series and the western series (Yorkshire series) had 84% cases with painless lump, 5% of the cases with painful lump, nipple retraction in 19% and nipple discharge in 2% of cases, with no case of ulceration.

Menstrual Status: Among the 150 female patients studied 73 were post-menopausal and 77 were pre- menopausal, post-menopausal women constitute 48.67% and pre-menopausal 51.33%. Where as in List and Eisenberg series, there were 70% of post-menopausal, and 30% of pre-menopausal women. The higher incidence in the post-menopausal group compared to our study may be due to breast cancer occurs a decade earlier in Indian women than westerns as described by Haque [6] et al in his study.

Clinical Staging: In our study there were only two cases belonging to stage I (IA) disease i.e 1.33%. There were 45(30%) cases of stage II disease. Among stage II 14 cases (9.33%) stage II A and 31 stage IIB cases. Maximum (88) of the cases belonged to stage III (58.67%). Among stage III, 66(44%) was stage III A and 22(14.66%) IIIB cases. 10% (15 cases) belonged to stage IV disease.

Histological Type: In our series 88.67% of cases were of infiltrating ductal carcinoma (not otherwise specified) type, 5.33% were medullary, and 4.67% were lobular carcinoma. We also got one case of apocrine carcinoma and one tubular carcinoma in our study. In our study IDC NOS type percentage slightly higher than two studies mentioned. It may be due to small sample size in our study.

Receptor Status: In our study we grouped ca breast in 4 categories after obtaining the IHC report of ER, PR and her2 neu status from either pre op true cut biopsy or from excised specimen. A total of 87 patient (58%) were ER/PR +VE and her 2neu -VE followed by 33 cases (22%) who were negative for ER, PR or her 2neu (also known as triple negative breast carcinoma). 22 cases (14.67%) were ER or PR +VE and her 2neu +VE. Only 8 cases (5.33%) were in ER/PR -VE and her2neu +VE category.

Dinesh Chandra Doval et al.[7] conducted a multi-institutional study in India on 3453 breast cancer patient and reported that 55.2% cases are ER/PR +VE and her 2neu -VE, 20.6% are ER/PR any +VE and her 2 neu +VE and 24.2% are triple negative breast carcinoma which is comparable to our study.

Treatment: After confirmation of diagnosis management protocols were planned after discussion with Radiotherapy department or Tumor Board.

Pre-operative NACT: 103 patients among the 150 patients (68.67%) got pre-operative neo adjuvant chemotherapy. All stage III and stage IV cancers received preoperative chemotherapy except two who presented to emergency department with fungating breast mass with bleeding and superadded infection and two cases of stage IIB tumor with T3 status given NACT to reduce the tumor size prior to surgery.

Surgical Management: In our study only 6 patients underwent breast conservation surgery. Among these patients 2 patients have stage I and stage II disease. Although there was indication for BCS in several patients but only 6 patients gave consent for Breast conservation surgery (BCS). Majority of the patient underwent modified radical mastectomy (MRM). 128 patients were managed with MRM. These are mainly of stage II or stage III disease. 16 cases managed with simple/palliative mastectomy.15 patients had metastatic breast carcinoma or stage IV disease and one patient had inflammatory breast carcinoma.

Post-operative chemo/radiotherapy: All patients referred to Department of Radiotherapy for further management and all patients received chemo or radiotherapy.

Post Op Pathological Staging: After operation when the pathology reports were available, we compared post-operative pathological staging with pre-operative clinical TNM staging and found that there was no disparity between these two in most of the cases (131) and there were disparity of T stage and N stage in 5 and 14 cases respectively.

This disparity may be due to lymph nodes which are not clinically palpable are easily identified during histopathological examination, exact number of lymph nodes is not always accurately measured by clinical examination, micro metastasis can only be seen during histopathological examination or it may be due to some error of assessment by the examiner during clinical examination.

Follow Up: After discharge we followed up these patients in our surgery OPD. We also collected data of these patients from Radiotherapy Department, NRS Medical college. All the cases were followed up till the end of study.

We classified the outcome of the disease according to presence of the residual disease at the end of follow up period and found that 130 patients had no residual disease (classified as complete remission) and 20 patients with residual disease. Among these 20 patients, 15 patients having metastatic breast carcinoma, one had axillary recurrence, two had chest wall recurrence, one patient developed systemic recurrence and one patient had positive margin status after operation. We have documented recurrence of disease in the form of systemic and local recurrence. Among the local recurrent cases we found one case of axillary recurrence and two case of chest wall recurrence within the follow up period. This may be due to inadequate axillary clearance, delay in starting chemotherapy and missed scheduled date of chemo or radiotherapy due to COVID pandemic.

We found systemic recurrence in only one case. This patient had metastatic lesion in lumber vertebra. As we know most common form of metastasis in breast carcinoma is bone metastasis and the most common site is lumber vertebra. The patients already having metastatic disease were excluded during calculation of percentage of recurrence.

In our study we got only two mortalities within the follow up period and all of them were in stage IV disease. No mortality in stage I, II or III found. Among these two cases one patient died due to hepatic encephalopathy and multiorgan failure. This patient had multiple liver metastasis and the other patient died due to

respiratory failure due to lung metastasis and pleural effusion.

Although this follow up period of only 6 months is too short to determine exact recurrence and mortality. Long term follow up is needed for that.

Conclusion

The study was conducted in Department of General Surgery, NRS Medical College and Hospital. In this present series of 150 cases of carcinoma breast, the presentation is a decade earlier compared to western series, with an increased incidence among 41-50 years of age group. Most of the cases presented with painless lump with most common location in upper outer quadrant. Most of the patients presented in stage III of the disease. The late-stage presentation is due to ignorance and lack of awareness about the seriousness of the disease. Infiltrating ductal carcinoma (NOS) was the most common histological type in our study. According to molecular subtype depending on receptor status ER/PR positive with Her 2 neu negative subtype (also known as luminal A) was found to be the most common subtype followed by triple negative breast carcinoma. Surgery and chemo/radio therapy is the mainstay of treatment.

Modified radical mastectomy (MRM) was the most surgical treatment performed in early breast carcinoma and in locally advanced breast carcinoma after receiving neo adjuvant chemotherapy followed by palliative or simple mastectomy done in metastatic breast carcinoma.

Breast conservation surgery was done in only 6 cases. All patients received post-operative chemo or radiotherapy. Only 2 patients had axillary and only one had chest wall recurrence and one had systemic recurrence at the end of our study, rest of the patients were in complete remission except those who already had metastatic disease. Only 2 deaths occurred during this study and all of them having metastatic or stage IV disease. No mortality in stage I, II and III. Despite of significant improvement in the management of the disease in the last few decades the effective cure of the disease requires reporting to the hospital in earlier stages of disease which is lacking in this locality. The study emphasizes the need of awareness and public education regarding carcinoma breast and its early detection. The simple and effective methods of detecting the disease early like self-breast examination and should be made aware among the people.

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