

ORIGINAL RESEARCH

STUDY OF BREAST CANCERS IN A TERTIARY CARE CENTRE IN SOUTH INDIA

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ABSTRACT:

Background:Cancer is one of the major health issues worldwide. In the year 2020, the Global burden of cancer rose to an estimated 19.29 million new cases and 9.95 million deaths. In India, according to year 2020 Statistics, Breast Cancer was the most prevalent cancer in women, followed by cancer of Cervix Uteri. During the past two decades, the incidence of Breast cancer has increased tremendously. The cause may be attributed to “Westernization” trends.

Materials and Methods: The present study is a retrospective study where all modified radical mastectomy specimens received in the department were grossed and processed and sections stained with Haematoxylin and Eosin. A total of 24 modified radical mastectomy specimens were evaluated.

Results: Most of the cases(41.66%) belonged to age group of 61-70 yrs, with 13 cases (54.16%)had tumour size more than 5cms. Invasive Carcinoma –NST was the most common Malignancy detected. Most of the cases were in stage –III of Breast Malignancy.

Conclusion: Early detection and timely treatment is essential to prevent further spread of Malignancy. Screening programmes should be intensified to increase awareness among women about Breast Cancer.

Keywords: Breast Cancer, Tumour size, Invasive Carcinoma, Lymph nodes.

INTRODUCTION:

Cancer is one of the major health issues worldwide. One half of all the cases were estimated to occur in Asia in 2020. The “Westernization” trends in developing countries with rapid socio-economic development seems to have changed the pattern of cancer. The westernization effect has resulted in reduction of infection related cancers and increase in cancers associated with dietary, reproductive and hormonal risk factors.^[1]

In India, according to year 2020 statistics, Breast cancer was the most prevalent cancer in women followed by cancer of Cervix Uteri. 1,78,361 new Breast cancer cases were detected in India in year 2020. Population Based Cancer Registry analysis showed that majority of Breast cancer were detected at an advanced state.^[2] Late diagnosis is a major factor for increased mortality as the patient is in advanced or metastatic stage.^[3,4]

The present study is aimed to figure out the incidence of breast cancer & analyze the size, type, grade, extent of spread to lymphnodes and staging of Breast Malignancy.^[5-7]

MATERIALS & METHODS:

In the present study, 24 Modified Radical Mastectomy Specimens received in the Department of Pathology, Siddhartha Medical College, Vijayawada, Andhra Pradesh, for a period of one year from 01st June, 2021 to 31st May, 2022 were analyzed. All the specimens were fixed in 10% formalin and were grossed according to standard protocol. The condition of Nipple, areola and the skin over the breast, size of the tumour, adjacent breast tissue and the lymphnodes, in each case were analyzed and bits from representative tissue were given accordingly from the tumour proper, nipple and areola, deep surgical margin, adjacent breast tissue and lymph nodes if available.

The tissue bits were processed and embedded in paraffin. The sections were then cut and stained in Haematoxylin and Eosin and the histomorphology was studied in all cases. Trucut biopsies, simple mastectomy specimens and specimens of cases of Breast malignancy already under treatment were not included in the study.

RESULTS

10 (41.66%) cases were detected in the age group of 61 - 70 years.

Table 1: Age wise distribution of cases

0-10 yrs	11-20 yrs	21-30yrs	31-40 yrs	41-50 yrs	51-60 yrs	61-70 yrs	71-80 yrs	Total
-	-	1	-	5	7	10	1	24

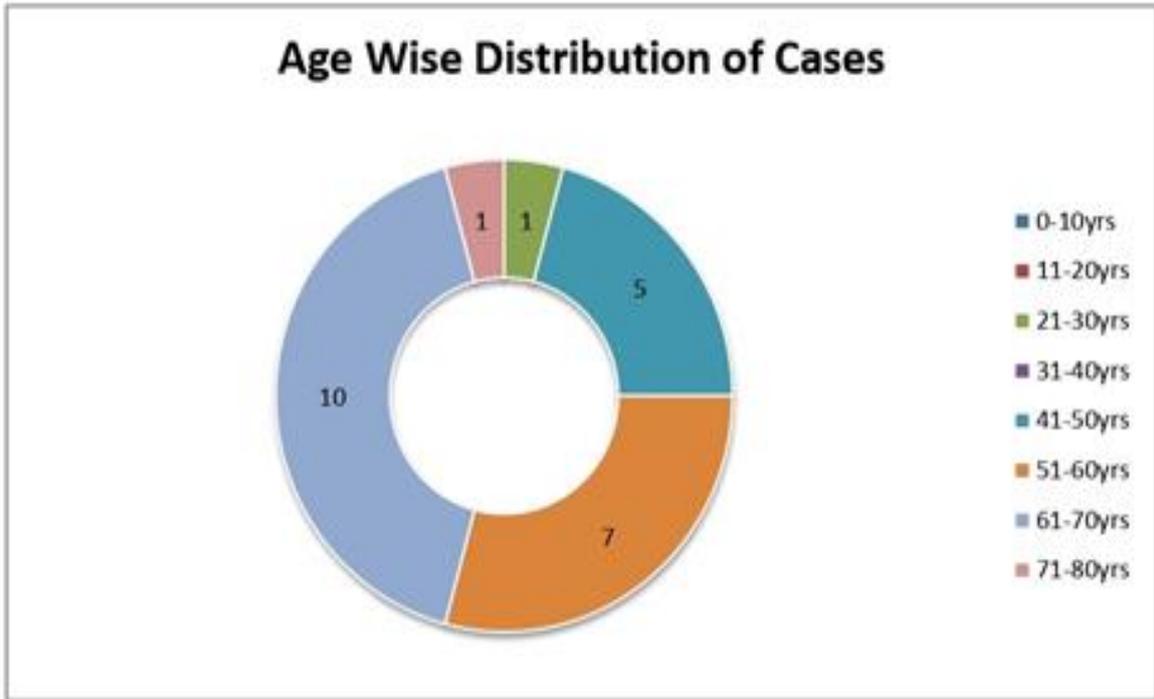


Figure 1: Age wise distribution of cases

Sex wise distribution of cases showed 1 (4.1%) case to be of male and 23 (95.9%) were females.

Table 2: Sex wise distribution of cases

	Male	Female	Total
Cases	1	23	24

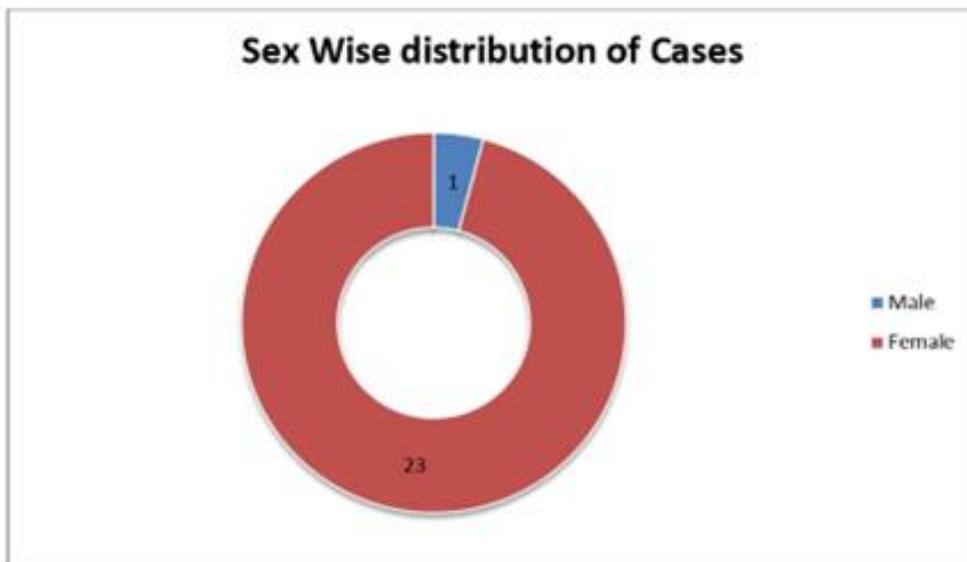


Figure 2: Sex wise distribution of cases

Distribution of cases on basis of size of the tumour showed that in 13 (54.16%) cases, the size of tumour was more than 5cms, where as in 11 cases the size of the tumour was between 2cms – 4.99cms.

Table 3: Distribution of cases on basis of size of tumor

	Less than 2 cms	2cms -4.99cms	More than 5cm	Total
Size in Centimeters	-	11	13	24

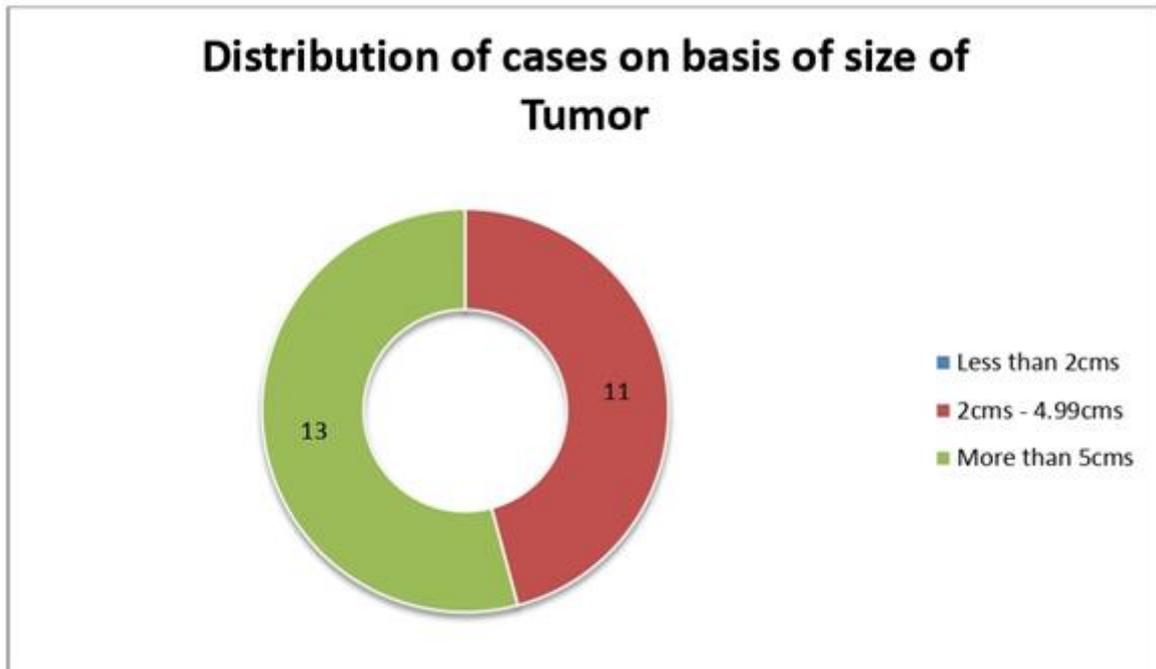


Figure 3: Distribution of cases on basis of size of tumor

Study of histomorphological pattern showed, that all 24 cases were Invasive Carcinoma - NST, with 2 cases showing Medullary pattern, 1 case showing Metaplastic pattern and 1 case showing Mucinous pattern.

Table 4: Histomorphological Pattern of cases

Invasive Carcinoma -NST	Invasive Carcinoma with Meta plastic pattern	Invasive Carcinoma with Medullary pattern	Invasive Carcinoma with Mucinous pattern	Total
24	(1)	(2)	(1)	24

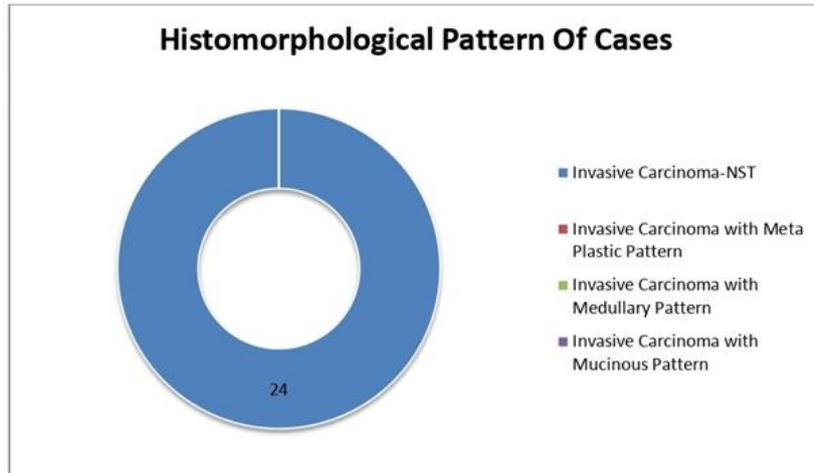


Figure 4: Histomorphological Pattern of cases

15- (62.5%) cases showed Metastasis in 4 -9 lymphnodes, whereas 6 cases showed Metastasis in 1-3 lymph nodes and 3 cases did not show any lymph node Metastasis.

Table 5: Number of Lymphnodes showing Metastasis in each case

No Lymphnode Metastasis	1 -3 Lymph nodes showing Metastasis	4-9 Lymph nodes showing Metastasis	More than 10 Lymph nodes showing Metastasis	Total
3 cases	6 cases	15 cases	-	24

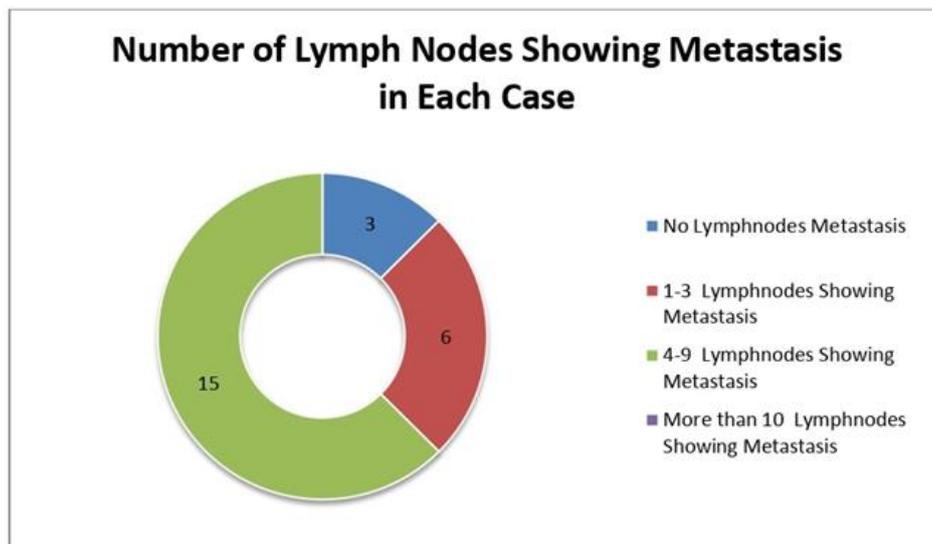


Figure 5: Number of Lymphnodes showing Metastasis in each case

Grading of the tumours according to Scarff - Bloom – Richardson (SBR) Grading system showed that 20 (83.33%) cases were in grade –II, followed by 4 cases in grade –III. It was observed that all the high-grade tumours (Grade-III) showed involvement more than 3 lymph nodes. The grade of the tumours correlated well with the number of lymph nodes metastasis.

Table 6: Grading of tumours according to Scarff - Bloom – Richardson (SBR) Grading

Scarff - Bloom – Richardson (SBR) Grading			Total
Grade –I	Grade –II	Grade –III	
-	20	4	24

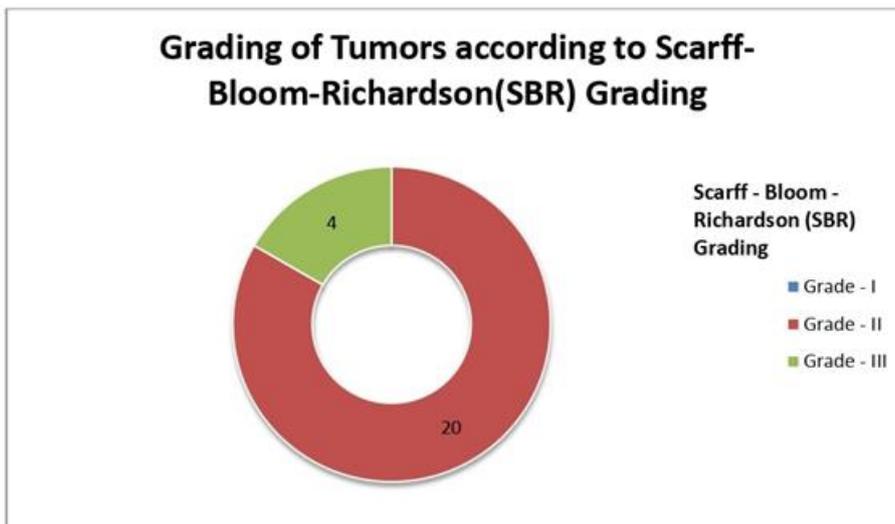


Figure 6: Grading of Tumors according to Scarff - Bloom – Richardson (SBR) Grading

Stage of the cancer, according to TNM Staging showed that most of the cancers, 15 (62.5%) cases were in stage –III followed by 9 cases in stage –II.

Table 7: Stage of breast cancer

Stage of breast cancer				
Stage –I	Stage –II	Stage –III	Stage –IV	Total
-	9	15	-	24

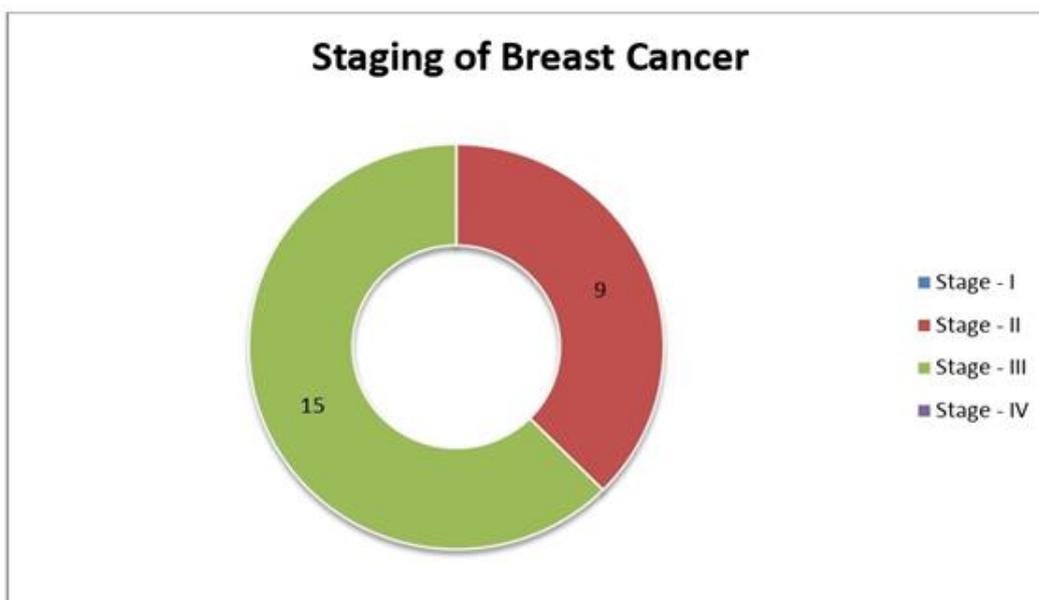


Figure 7: Staging of Breast cancer

DISCUSSION

The survival rate decreased by 2.7 times for breast cancer, in case of detection at stage –IV as against stage –I.^[1] A total of 90,408 women died of breast cancer in 2020 in India.

In the present study, 10(41.66%) cases of breast cancer were detected in the age group of 61-70 years. The study by ShantiV et al,^[8] revealed that 48.83% of cases in their study were more than 51 years of age. A slight bimodal trend in age distribution has been observed with a secondary rise in frequency after the age of 65 years.^[1]

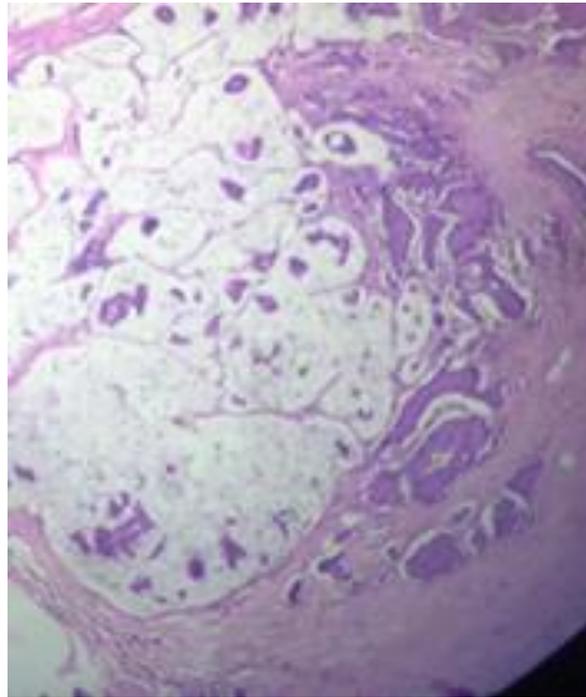


Image 1: Invasive carcinoma showing Mucinous pattern

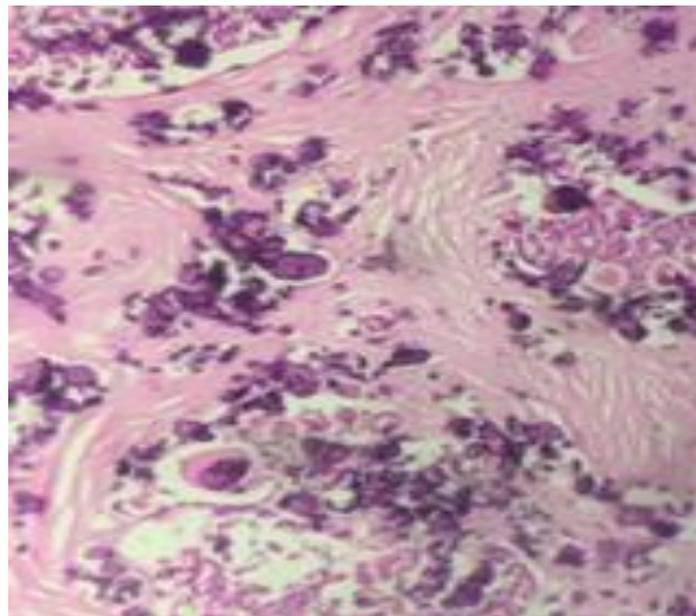


Image 2: Invasive Carcinoma showing Micro Calcification

Sex wise distribution of cases in our study showed that 23(95.9%) cases were females whereas 1 case was male. The study by Mudholkar et al,^[9] shows that 97.6% of all cases in their study were females whereas 2.4% of cases were males. In study by Pathak et al,^[4] 97.3% cases were females. Smaller study sample may have resulted in comparative decreased in female preponderance in our study.

In 13 (54.16%) cases, the tumours were more than 5cms in greatest diameter in our studies. Study done by Dr Sahoo et al,^[10] showed that 42.3% of all cases had tumour size more than 5cms, similar to our study. Tumour size has been long recognized as an important prognostic factor with large tumours associated with worse prognosis and also increased likelihood of nodal metastasis.^[2] In the present study, all tumours having greatest diameter more than 5cms have shown metastasis in 4-9 lymphnodes. Tumours with extensive lymphnode involvement, when they are small, tend to have strong migration ability but not proliferation ability, whereas, large tumours with extensive lymphnode involvement tend to have strong migration and proliferation abilities, Yin Lie et al.^[5]

Histological pattern of all 24 cases of breast carcinoma in our study was Invasive carcinoma – NST, with 2 cases showing Medullary pattern, 1 case with Metaplastic pattern and 1 case with mucinous pattern. The study by Z Ahmad et al,^[3] revealed 94.16% cases of Invasive Carcinoma-NST, study by Mudholkar et al,^[9] reported 88% of all cases as Invasive carcinoma – NST, the findings of which are similar to our study. Study by JS Nigam et al,^[6] reported 81.4% of cases as Invasive carcinoma –NST, whereas study by Srivastav NK showed 73.17% cases of Invasive carcinoma –NST.^[3]

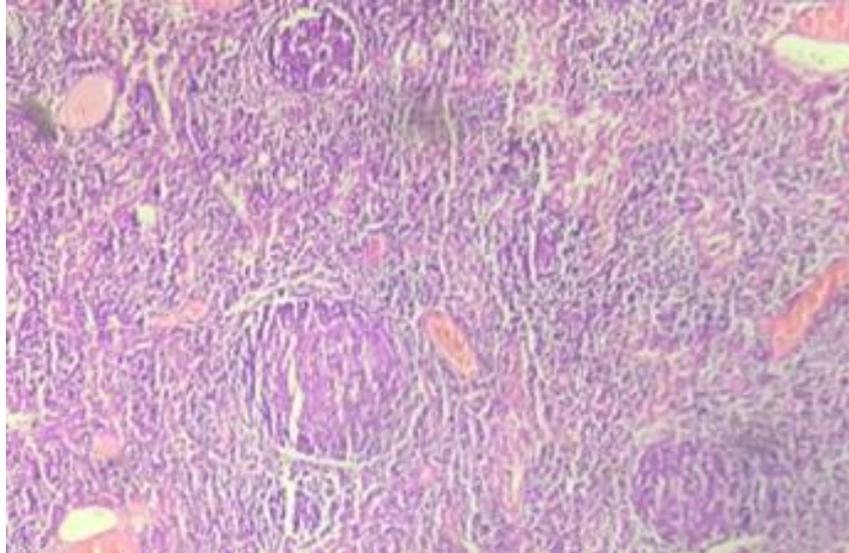


Image 3: Invasive carcinoma showing lymphnode metastasis

Number of patients showing Metastasis in 4-9 lymphnodes were 15 (62.5%) in our study. Study by Dr Sahoo et al,^[10] showed 44% of cases showing Metastasis in 4-9 lymphnodes in Breast Carcinoma. Axillary lymphnode involvement is the most significant prognostic factor in Breast cancer. The staging of the tumour changes according to the number of lymphnodes showing metastasis, also, management of the cases differs according to the number of

lymphnodes showing metastasis. Chances of recurrence are more if more number of lymphnodes show metastasis. Prognostic factors are used as a guide for management.

15(62.5%) cases in our study were of grade –II according to Scarff - Bloom – Richardson (SBR) Grading. Similar results were obtained by studies done by Acharya et al,^[12] which showed 47.74 % cases in grade –II. Study by Siddiqui et al,^[11] showed 59.17% of cases to be in Grade –II. In Study by Reddy et al,^[13] 81.6% of tumours were in grade –II.

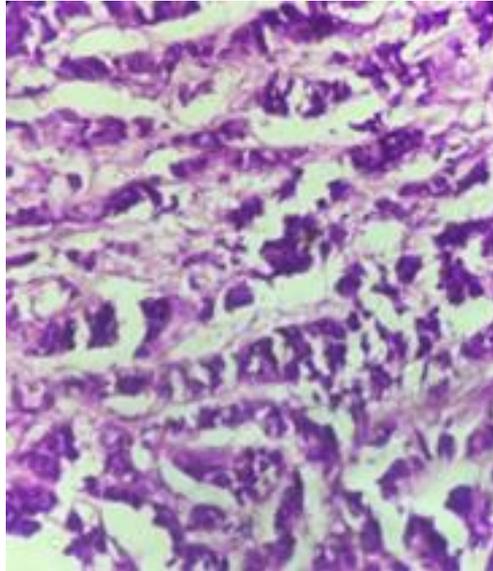


Image 4: Invasive carcinoma-NST

TNM Staging of the breast cancer in our study revealed in 15 (62.5%) cases in Stage-III and 9 (37.5%) cases in Stage –II. None of the cases were in stage –I or stage-IV, which shows that all the cases have presented with symptoms at advanced stage.

13 cases having tumour size of more than 5cms and 2 cases with tumour size between 2cms - 4.99cms and showing Metastasis in 4-9 lymphnodes, were designated as stage –III. Our findings were similar to findings by Dr Sahoo et al,^[10] which reported 56.7% cases in Stage – III. Presence of 62.5% cases in stage-III shows that the patients have presented to the hospital at a late stage, may be due to ignorance, illiteracy and lack of awareness about the disease.

CONCLUSION:

The present study has provided the information about the histopathological aspects, grading and staging of Breast Carcinoma at our Institute. The aim should be towards elimination of risk factors and promotion of health education about breast cancer, diet, obesity and physical activity. Late presentation is a major concern, as it is associated with decreased survival period.

Screening for early diagnosis of breast cancer by Breast Self-Examination (BSE), examination by the Physician and Mammography are the 3 important ways to prevent as well as to detect breast cancer at an early stage.

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