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**Research Article**

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# A study of the histopathological spectrum of breast malignancy in a rural area

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## ABSTRACT

**Background**- Breast cancer is the most common cancer of women worldwide representing approximately16% of all female cancer[1]. It represents the second leading cause of cancer death among women after lung cancer[2], In some of the studies, it occurs secondary to cervical cancer[3,4], presently 75,000 new cases occur in Indian women every year[5]. Aetiology of breast cancer is multifactorial. The present study was done to know the histopathological spectrum of breast malignancies in Ashwini Rural Medical college and research centre, Kumbhari, Solapur.
**Aim and objectives**- This study is aimed to analyse the histopathological spectrum of various breast malignancies and to study the distribution of breast malignancies in different age groups in rural area.
**Material and methods**- After receiving approval of Institutional ethics committee the study was conducted in the histopathology section of our department using the specimens of Modified Radical Mastectomy sent for histopathological evaluations during the mentioned study period.
Total 70 specimens were evaluated and the slides were stained with routine stains like H and E. Histo-morphological features as seen in the slides mentioned above were studied and following observations were made.
**Observations and results**-Invasive duct cell carcinoma, 47 cases (66.9%) was the most common malignant breast lesion. Followed by Malignant phyllodestumour which were 10 cases (14.2%). There were 5 cases of Invasive lobular carcinoma and 4 cases of carcinoma in situ.
Most number of cases in Invasive ductal carcinoma were of grade 2, followed by grade 1 invasive ductal carcinoma.20 cases of breast carcinoma were of Stage IIA. 14 cases were of stage IIB and stage IIIA.
**Conclusion**-We observed that the females presented at a later stages in the rural areas. It is advisable that awareness should be created about breast health in rural areas and all cases of breast lesions should be carefully evaluated as early as possible to exclude the possibility of malignant breast lesions.

**Key Words**: *Modified radical mastectomy, Invasive ductal carcinoma, Breast, Rural*

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## INTRODUCTION

Breast lumps are one of the common problems encountered in women. These lumps are frequently seen in younger to middle aged women and often they go undetected for various reasons. These lumps have different etiologic causes and can be either benign or malignant. In India breasts are considered a symbol of womanhood and fertility and there is a taboo surrounding discussion about breast lumps and hence the women come to the hospitals for examination only later in the course of the disease.

Breast cancer is the most common cancer of women worldwide representing approximately 16% of all female cancer[1]. It represents the second leading cause of cancer death among women after lung cancer[2]. In some of the studies, it occurs secondary to cervical cancer[3,4], presently 75,000 new cases occur in Indian women every year[5]. A etiology of breast cancer is multifactorial. It includes diet, reproductive lifestyle, environmental and genetic factors[4].

This study is intended to clarify the epidemiological and pathological features of breast cancer to adopt an adequate strategy of care in our area.

The present study was done to know the histopathological spectrum of breast malignancies in Ashwini Rural Medical college and research centre, Kumbhari, Solapur.

**Aims and objectives**:

This study is aimed to analyse the histopathological spectrum of various breast malignancies and to study the distribution of breast malignancies in different age groups in rural area.

**Materials and Methods**

It is a prospective study performed in the department of Pathology, Ashwini Rural Medical college and research centre, Kumbhari, Solapur over a period of 06 months from April 2022 to September 2022. During this period a total of 70 breast specimens were received by the Department of Pathology, Ashwini Rural Medical college and research centre, Kumbhari, Solapur. The standard Formalin Fixed Paraffin Embedding (FFPE) tissue processing protocols were followed and "3- 4"µm thick sections were cut and stained with Haematoxylin and Eosin stains for histopathological analysis.

The gross appearance of specimens and the histopathological reports were recorded as per proforma. Histopathological typing was done according to WHO classification. And grading of the tumour was done based on the Nottingham criteria.

**RESULTS**

A total Of 144 breast lesion biopsies were studied over a period of six months out of which 70 were reported as malignant. These 70 cases were followed up on histopathology over a period of 4 months. All cases were females. Involvement of left breast (54%) was more than right breast (42%) whereas 4% cases presented with bilateral breast lesions. The age of presentation ranged from 32 to 70 years.

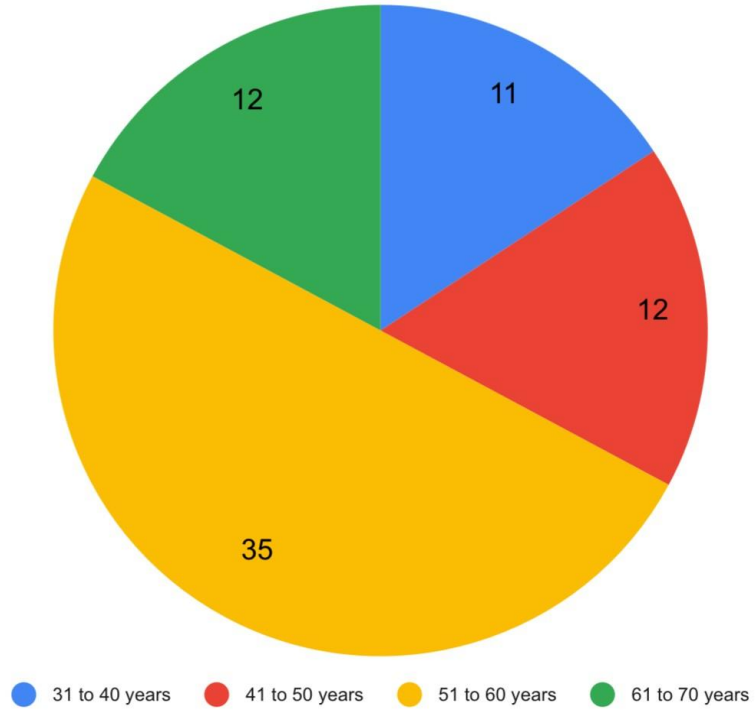


Figure 1: Age wise distribution of various malignant breast lesions

The minimum and maximum ages recorded were 32 and 69 years respectively. The average age at diagnosis was 48.5 years.

**Table 1**-Total number of cases in the studied population

| Diagnosis | Total number of cases | Total percentage |
|---|---|---|

| | | |
|---|---|---|
| Invasive ductal carcinoma | 47 | 66.9% |
| Malignant Phyllodestumour | 10 | 14.2% |
| Invasive lobular carcinoma | 5 | 7.1% |
| Lobular carcinoma in situ | 4 | 5.6% |
| Mixed malignant tumour | 2 | 2.8% |
| PapillaryTumour | 2 | 2.8% |

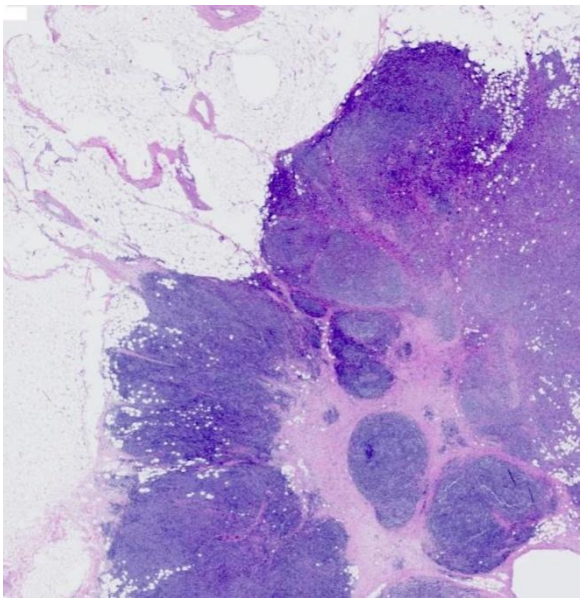

Image 2-The tumor appears blue at low power due to tumor infiltrating lymphocyte rich stroma. Medullary carcinoma.

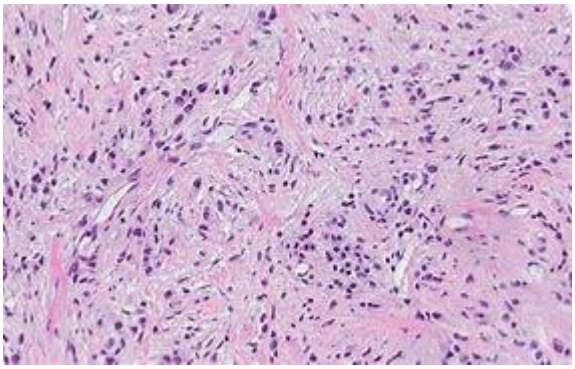

Image 3- Indian file pattern in Invasive lobular carcinoma

Invasive duct cell carcinoma, 47 cases (66.9%) was the most common malignant breast lesion. Followed by Malignant phyllodestumour which were 10 cases (14.2%). There were 5 cases of Invasive lobular carcinoma and 4 cases of carcinoma in situ.

**Table 2**-Age wise distribution of the cases

| Diagnosis | 31 to 40 years | 41 to 50 years | 51 to 60 years | 61 to 70 years |
|---|---|---|---|---|
| Invasive ductal carcinoma | 3 | 6 | 28 | 2 |
| Phyllodestumour | 8 | 2 | - | - |
| Invasive lobular carcinoma | - | 2 | 3 | - |

| | | | | |
|---|---|---|---|---|
| Lobular carcinoma in situ | - | 2 | 2 | - |
| Mixed malignant tumour | - | 2 | - | - |
| Papillary tumour | - | - | 2 | - |

**Table 3**- Nottingham Grade of Invasive ductal carcinoma

| Nottingham Grade | No. of patients |
|---|---|
| Grade 1 | 6 |
| Grade 2 | 29 |
| Grade 3 | 12 |

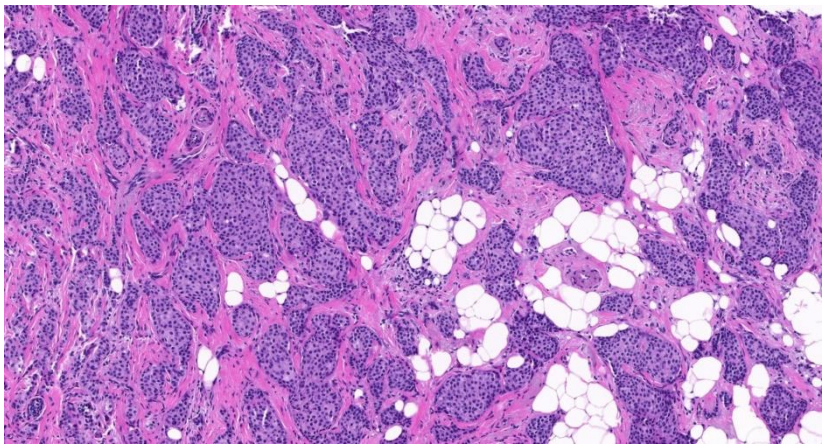

**Image1**- Invasive ductal carcinoma grade 2- Infiltrative, back to back nests of tumor cells with moderately enlarged nuclei (H&E, 10x).

Most number of cases in Invasive ductal carcinoma were of grade 2, followed by grade 1 invasive ductal carcinoma.20 cases of breast carcinoma were of Stage IIA. 14 cases were of stage IIB and stage IIIA.

Most cases were of invasive ductal carcinoma-NOS while 4 cases of Invasive ductal carcinoma with apocrine changes were reported while 2 cases of Invasive ductal carcinoma with micropapillary changes were reported. 2 cases were diagnosed with Invasive ductal carcinoma with neuroendocrine differentiation. In mixed malignant tumours both cases were of Invasive ductal carcinoma along with mucinouscarcinoma.

## DISCUSSION

Breast lesions are detected commonly nowadays due to awareness, knowledge and more importantly breast self examination by patients. Benign breast diseases are more prevalent as compared to malignant and inflammatory lesions as seen throughout the world[5].

In our study, a total of 144 breast biopsies were studied out of which 51.3% were benign lesions, 70 cases comprising 48.7% were malignant. These 70 cases were followed up on histopathology. The mean age of incidence of malignant breast lesions in our study, which is 48.5 years, is found to be much lower than in the western literature where the mean age is 54 years[6].

In the present study we found that mainly left sided breast lesions were more common (52.6%) compared to right sided breast involvement (45%). Bilaterality was seen in 1.4% cases. Our findings are similar to the studies done by Raju et al, Kalyani et al, Ngwogu et al. [7-9] Most of the malignant lesions are found after 40 years of age. The present study reported the highest incidence of malignant lesions after 5th decade of life which was comparable to the results obtained in the studies done by Malik R et al, Mudholkar et al and Ibrahim et al.[10,11,12]. Among the malignant lesions Invasive ductal carcinoma – NOS was the most common malignant variety, followed by malignant phyllodestumour and invasive lobular carcinoma. Kalyani et al and Dnyaneshwar J S et al. also found Invasive ductal carcinoma-NOS as the commonest malignancy among the studied malignant breast lesions [8, 10].

## CONCLUSION

In this study, we found that malignant lesions are common in 4th to 6th decade but peak incidence was in the 5th and 6th decade. Left breast was most commonly involved. In Invasive ductal carcinomas grade 2 tumours were

most common. Stage IIA was the most common stage in carcinoma breast. The most common type of breast malignancy was Invasive ductal carcinoma-NOS.

We observed that the females presented at a later stages in the rural areas. It is advisable that awareness should be created about breast health in rural areas and all cases of breast lesions should be carefully evaluated as early as possible to exclude the possibility of malignant breast lesions. Histopathological study plays a very important role in diagnosis of breast lesions and hence in treatment and prognosis.

**Conflict of interest**- Nil

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