



HISTOMORPHOLOGICAL SPECTRUM OF LESIONS IN BREAST

Histopathology

Rachana S. Binayake	Associate Professor, Department of Pathology, GGMC & Sir J.J Group of Hospitals, Mumbai
Shweta Watane	Assistant Professor, Department of Pathology, GGMC & Sir J.J Group of Hospitals, Mumbai
Buddheshwar N. Hiwale	Professor and Head of Department of Pathology, GGMC & Sir J.J Group of Hospitals, Mumbai
Mitali Priya Netam*	Junior Resident- 3, Department of Pathology, GGMC & Sir J.J Group of Hospitals, Mumbai *Corresponding Author

ABSTRACT

Introduction Breast carcinoma is the most common malignancy followed by cervical carcinoma in females in India. It accounts for about one-third of female cancers and nearly one fourth of all malignancies. The breast lesions varies with several entities consisting of significant features from inflammatory, non-neoplastic and benign to severe invasive carcinomas. In case of malignancy, early and accurate diagnosis can save the patient from metastases, thus reducing mortality and morbidity. **Aim** We aimed at determining the spectrum, histopathology and prevalence of lesions in breast in our tertiary care hospital. **Material and Methods** This is a retrospective study conducted in the department of pathology in tertiary care hospital, Mumbai over a period of one year. There were 58 specimens of breast lesions received during the period of one year. The biopsies were taken under aseptic precautions. The specimens were fixed in 10% formalin and stained with H and E stain. The lesions were classified based on their histomorphological findings. **Results** This study included total of 58 specimens of breast biopsies and modified radical mastectomy specimens. Most common benign breast lesions among 58 specimens was fibroadenoma in 18 cases in the age group of 18-43years (31%) followed by neoplastic lesion of invasive ductal carcinoma in 17 cases (29.3%). Benign lesions like benign phyllodes tumor in 4 cases (6.8%), infective breast lesions in 3 cases (5.1%), adenomyoepithelioma, androgen insensitivity, Ductal carcinoma in situ in 1 case (1.7%) and malignant phyllodes in 1 case (1.7%). Metastasis to axillary lymph node was also observed in 1 case (1.7%). In 2 cases (3.4%) changes of post neoadjuvant regime are also noted. **Conclusions** In our study, the peak incidence of benign lesion and malignant lesion is in the age group of 40-45 years. This study highlights the importance to recognize benign lesions and differentiate it from malignant lesion so the most appropriate treatment regime can be organized.

KEYWORDS

Benign, Malignancy, Neoplastic

INTRODUCTION

In India, breast cancer has emerged as the leading cause of cancer in women in most urban populations. Now a days breast cancer has replaced carcinoma cervix as the most common cancer in women in India.⁽¹⁾ Breast carcinoma is the most common malignancy with a frequency of 20/10,00,000 women. Nowadays, breast carcinoma is considered as most common cause of mortality in females.⁽²⁾

Breast tissue or the mammary gland is a modified sweat gland that shows broad spectrum of pathological lesions. The breast lesions usually presenting as palpable breast masses, ranging from inflammatory lesions, non-neoplastic lesions to neoplastic breast lesions.⁽¹⁾

The lesions of breast are heterogenous diseases that comprises of various different structures with remarkably different characteristic features. It is comparatively more feasible to understand most of the breast lesions and diagnosed them but it becomes difficult to appreciate the unusual findings and neoplasms.⁽³⁾

Most of the breast lesions are initially present with breast lump which is sensitive for the patients due to which they might not report timely to the doctor for an examination. A prompt and accurate breast lump diagnosis is essential, as early management reduces worry and save lives.^(4,5)

Due to increase in breast cancer awareness, the profound interest in benign breast lesions is stimulated since certain epithelial benign breast diseases have been associated with malignant transformation⁽⁶⁾. The benign lesions of the breast are more common than malignant ones. The incidence of the lesions increases during the second decade and reaches its peak in the fourth and fifth decades in the younger population. Incidence of malignancy are more likely to develop in post-menopausal women.

These lesions can be without any symptoms or may have overt clinical manifestations such as lump in breast associated and not associated

with pain and nipple discharge. Non-specific symptoms can also come across in various breast diseases. Therefore, further evaluation by imaging techniques like USG and Mammogram and histopathological study for definitive diagnosis is mandatory.⁽⁶⁾

AIM

The aim of this study is to determine the spectrum, histopathology and prevalence of lesions in breast in our tertiary care hospital.

MATERIAL AND METHODS

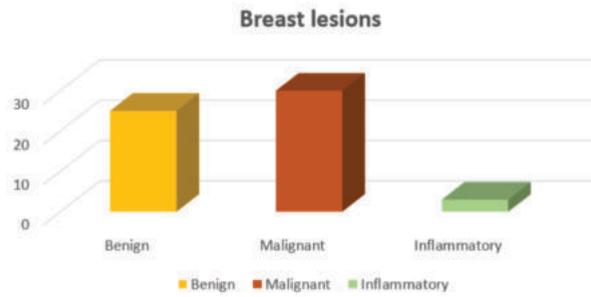
It is a retrospective study performed in the department of pathology in a tertiary care hospital over a period of one year. During this period, a total of 58 breast specimens were received by the Department of Pathology. The standard Formalin Fixed Paraffin Embedding tissue processing protocols were 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 histo pathological reports were recorded as per proforma. The clinical data is obtained from the hospital records and tissue specimens received in the department

RESULT

In a period of one year, total 58 specimens of breast biopsies and mastectomy were observed. In the present study, the total specimens received were only of females. Out of the 58 specimens studied, 51.7% (30cases) belonged to category of malignant breast lesions whereas 25 cases (43.1%) were of benign breast lesions and 3 cases (5.2%) were of inflammatory breast lesions [Table/fig 1].

The age of the patients ranged from 17 to 75 years. The mean age of the patients was 31years. Overall, majority of the cases that are 16 cases, belonged to the age-group of 41-50 years followed by age group of 21-30 years with 11 cases. Majority of the benign breast lesions were found in the age-group of 21-30 years. Most of the malignant lesions were reported in the older age group of 41-50 years (67.2%) [Table/fig2].



[Table/fig1]

[Table/Fig2] Age wise distribution of breast lesions.

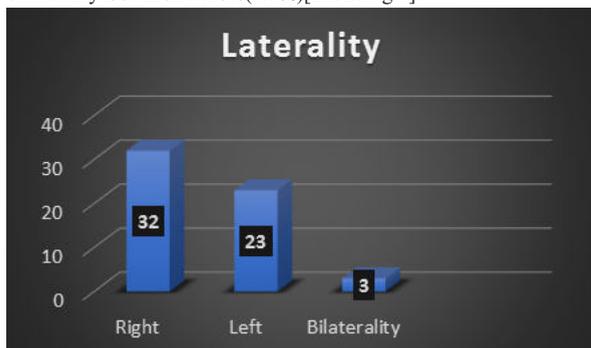
Age	Benign Breast lesions	Malignant Breast lesions	Inflammatory lesions
11-20	06	00	00
21-30	10	01	02
31-40	02	02	01
41-50	06	10	00
51-60	00	09	00
61-70	01	05	00
71-80	00	03	00
Total	25	30	03

Out of total number of cases, 51.7% patients were presented with lump in the breast not associated with pain whereas 48.2% patients presented with breast lump associated with pain and 17.2% patients were presented with case of nipple discharge. [Table/Fig3]

[Table/Fig3] Clinical features in breast lesions

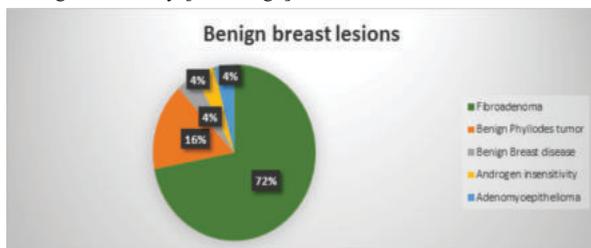
Clinical features	No of cases	%
Breast lump without pain	30	51.7
Breast lump associate with pain	28	48.2
Nipple discharge	10	17.2

In the current study, the right side predominancy was observed in 32 cases(55.1%), 23 cases (39.6%) were seen on the left side and bilaterality is seen on 3 cases(5.3%)[Table/Fig.4]



[Table/Fig.4]

Out of total number of 25 cases of benign breast lesions, the most common benign lesion was fibroadenoma in 18 cases(72%) followed by benign phyllodes tumour in 4 cases(16%), 1 case of (4%) benign breast disease, 1 case(4%) of adenomyoepithelioma and 1 case (4%) of androgen sensitivity. [Table/Fig5]



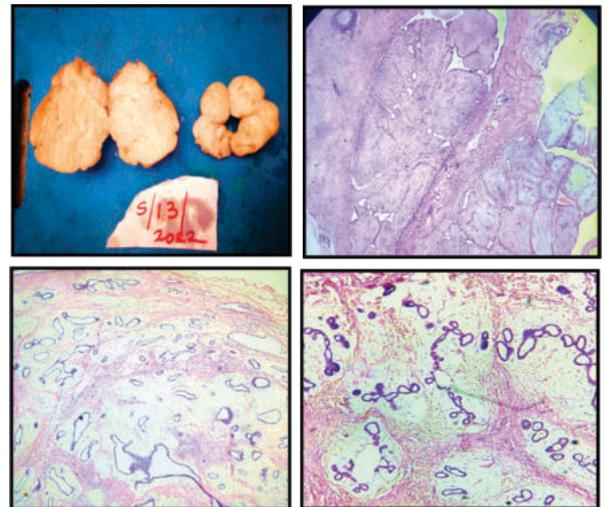
[Table/Fig5]

In 25 cases of benign breast disease fibroadenoma comprised for maximum number of cases(72%) with mean age of 25.5 years. Majority of the cases (50%) were seen in the age group of 21-30 years,

followed by benign phyllodes tumour in 16% cases equal distribution in between 3rd to 5th decade. 1 case each of lesions like benign breast disease, adenomyoepithelioma and androgen sensitivity belonged in the age group of 41-50 years, 21-30 years and 61-70 years. [Table/Fig6]

[Table/Fig6]

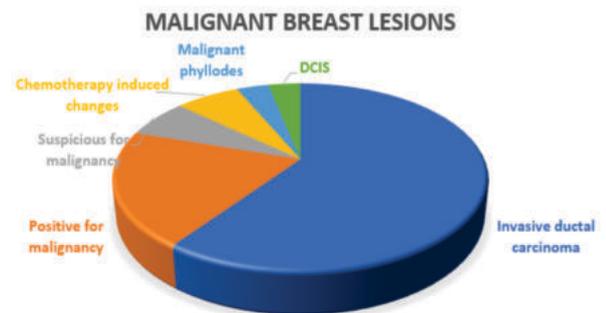
Histological pattern	11-20	21-30	31- 40	41- 50	51- 60	61- 70	71- 80
Fibroadenoma	06	09	00	03	00	00	00
Benign Phyllode tumour	00	00	02	02	00	00	00
Benign breast disease	00	00	00	01	00	00	00
Adenomyoepithelioma	00	01	00	00	00	00	00
Androgen Insensitivity	00	00	00	00	00	01	00
Total	06	10	02	06	00	01	00



[Table/Fig7]

- (a) Gross picture of fibroadenoma of breast. On cut surface, firm, white and bosselated with slit like spaces
- (b) Microscopic picture of benign phyllodes tumour showing leaf like epithelial pattern.
- (c) Microscopic picture of fibroadenoma with fibrocystic changes
- (d) Microscopic picture of fibroadenoma showing stromal and glandular component.

In neoplastic lesions, most of the cases were of invasive ductal carcinoma in 18 cases(60% of total malignant lesions), 6 cases (20%) were positive for malignancy in breast biopsies, 2 cases (6.6%) of suspicious for malignancies, 2 cases (6.6%) of chemotherapy induced changes in malignant breast carcinoma, 1 case(3.4%) of malignant phyllodes and 1 case(3.4%) of DCIS(Ductal carcinoma in situ). [Table/Fig8]

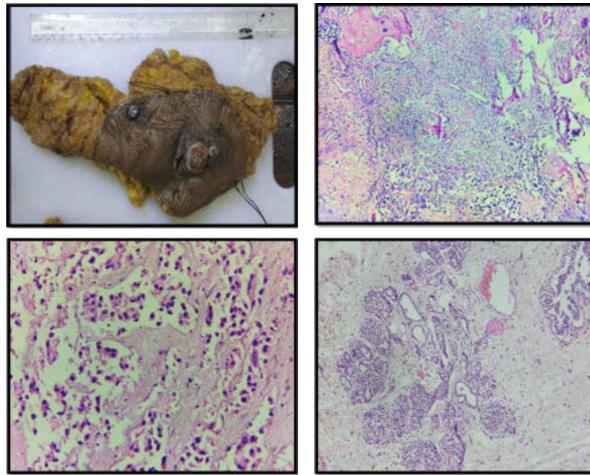


[Table/Fig8]

In total 30 cases of malignant breast disease Invasive ductal carcinoma comprised for maximum number of cases(60%) with mean age of 58.6 years. Majority of the cases (23.3%) were seen in the age group of 51-60 years, followed by positive for malignancy in 20% cases in between 20th to 50th decade. 2 cases of suspicious for malignancies in between 41-60. 2cases (6.6%) of chemotherapy induced changes were seen in age group of 41-50 years followed by 1 cases each of malignant phyllodes tumor with heterologous component and DCIS in 51-60 and 71-80 years. [Table/Fig9]

[Table/Fig9]

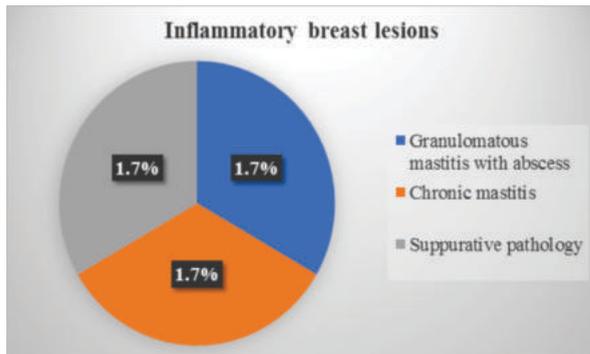
Histological pattern	11-20	21-30	31-40	41-50	51-60	61-70	71-80
Invasive ductal carcinoma	00	00	00	04	07	05	02
Positive for malignancy	00	01	02	03	00	00	00
Suspicious for malignancy	00	00	00	01	01	00	00
Chemotherapy induced changes	00	00	00	02	00	00	00
Malignant phyllodes with heterologous component	00	00	00	00	01	00	00
DCIS	00	00	00	00	00	00	01
Total	00	01	02	10	09	05	03



[Table/Fig10]

- (a) Gross picture of mastectomy specimen showing greyish brown nodule near nipple areolar area.
- (b) Microscopic picture of malignant phyllodes tumor with heterologous elements
- (c) Malignant tumor cells arranged in sheets in with stromal invasion in Invasive ductal carcinoma
- (d) Component of DCIS (Ductal carcinoma in situ)

In the present study, we also found 3 cases of inflammatory breast disease. 1 case (1.7%) of granulomatous mastitis with abscess showing granulomas comprising of epithelioid cells, foreign body type of giant cells, mantle of lymphocytes with neutrophils and peripheral fibrosis. Ducts showed presence of foamy macrophages. 1 case (1.7%) of chronic mastitis showing dense infiltration of breast tissue with inflammatory cells consisting of predominantly lymphocytes, respectively along with stromal fibrosis and 1 case (1.7%) of suppurative pathology is observed in the present study. [Table/Fig.11]



[Table/Fig.11]

DISCUSSION

In the present study, the age group range varies between 17 to 79 years which is similar to study done by Suhail Farooq et al,⁽⁷⁾ Rashmi Gupta et al⁽⁸⁾ and Kumar R et al.⁽⁹⁾

In our study, Out of total 58 specimen of breast lesions, 58.6 % were malignant neoplasm, 36.2% were benign which shows that malignant lesions were more common in our study. This study correlates with the study done by Greta P et al⁽¹⁰⁾ with 62.9% cases and Siddiqi et al⁽¹¹⁾ with

37% cases which also shows malignant cases more than benign cases in their study.

Present study showed 65.5% of patients(38 cases) presented with breast lump not associated with pain. Foncroft LM et al⁽¹²⁾ (87.4%), Sangma et al⁽¹³⁾(87%) also stated that breast lump was the most common symptom. Our study correlates with the above author

The incidence of nipple discharge was 8% in study done by Sangma et al⁽¹³⁾ and 8% by Koorapati Ramesh et al⁽¹⁴⁾. Our study showed 5 cases (8.6%) with nipple discharge. It correlates with the above authors

In the present study, right side predominancy was observed in 32 cases(55.1%), 23 cases (39.6%) were seen on the left side and bilaterality is seen on 3 cases(5.3%). Chalya PL et al⁽¹⁵⁾ and Shambhu S et al⁽¹⁶⁾ showed the similar findings of right side predominancy with 53.8% and 54.8%

In the present study, out of total 30 cases of malignant lesions, Invasive ductal carcinoma accounted for majority of the lesions that is in 17 cases(56.6 %). This is comparable to the study done by S. Yogalakshmi et al(77%)⁽⁴⁾, Kumbhakar et al (75.6%)⁽¹⁷⁾ and Shalini K et al⁽¹⁸⁾ which found invasive ductal carcinoma as the most common lesions in their study. In our study, maximum number of malignant cases were observed in the age group between 4th to 6th decade. This is similar to the study done by Kulkarni et al⁽¹⁹⁾.

The current study shows 25 cases of benign breast lesions in which fibroadenoma was the commonest accounting for 72% of the total benign lesion with the majority of cases in age group between 21-30 year with a mean age of 25.5 years. This data is concordant with study done by Fekade Y et al⁽²⁰⁾, Mouleeswaran et al⁽²¹⁾ and Padmom L et al⁽²²⁾ which shows similar age group and fibroadenoma as their most common benign breast lesion finding. We encountered 4 cases of benign phyllodes tumor which was 6.8% of total breast lesions which is similar to the study done by Shweta Pai⁽²³⁾ which showed 5.2% and Darshana W et al⁽²⁴⁾ which showed 5.8% of benign phyllodes tumor in their studies.

CONCLUSION

This study shows that the number of malignant cases are more in number as compared to the benign cases. Thus, It is very important for us to undertake preventive measures and create awareness regarding breast cancer. This study emphasizes the importance to recognize and treat breast lesions at an early stage and distinguish them from in situ and invasive breast carcinomas. Histopathology plays an important role in the diagnosis and treatment of breast disease along with radiological and FNAC findings

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