

ORIGINAL RESEARCH

Spectrum Of Breast lesions in lumpectomies and mastectomies, A retrospective morphological study

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ABSTRACT

Introduction: Breast lesions are heterogeneous diseases that consist of several distinct entities with remarkably different characteristic features. Most of the breast lesions are well understood and well diagnosed while some of the unusual lesions and malignancies are less appreciated. Majority of the breast lesions initially present with a lump in the breast which is very sensitive for female patients due to which they might not report timely to the doctor for an examination. Even after clinical examination, histopathological confirmation plays a crucial role in the evaluation of many malignant and premalignant lesions. **Objective:** To study the spectrum of lesions in mastectomies categorizing them into benign and malignant lesions with significance on histomorphology. **Materials and methods:** Study was conducted in the department of pathology from 2017 July to 2022 June. All the specimens received as lumpectomies and mastectomies were considered. Trucut biopsies were excluded from the study. Specimens were fixed, processed, stained, and examined under binocular microscope for histopathology. All of them were categorized as non-neoplastic and neoplastic. **Observation and results:** Among a total of 129 specimens received, 31 cases belonged to the age group between 20-30 with benign and malignant being 30 and 1 respectively. 24 cases of benign and 3 cases of malignant belong to the age group of 31-40. Most of the cases in the age group >50 belonged to malignant category and among all the malignant cases, common age group encountered was between 40 and 50. **Conclusion:** Even after advancements in the diagnostic world, histopathology remains the gold standard for confirmation of breast malignancies and premalignant lesions.

Key words: breast lesions, histomorphology, pathology, malignancies.

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INTRODUCTION

Breast lesions are heterogeneous diseases that consist of several distinct entities with remarkably different characteristic features. Most of the breast lesions are well understood and well diagnosed while some of the unusual lesions and malignancies are less appreciated. Majority of the breast lesions initially present with a lump in the breast which is very sensitive for female patients due to which they might not report timely to the doctor for an examination.¹

Benign or malignant lesions Per se do not pose any problem in histopathological diagnosis. But difficulty arises in differentiating between premalignant lesions and carcinoma in situ and minimally invasive carcinoma. There are great differences so far in the prognosis of the lesions concerned.

Breast is a site of a broad array of pathological alterations ranging from inflammatory lesions to life threatening invasive cancers. Breast lesions have gained global attention as breast cancer has become

one of the leading causes of death among women worldwide².

In India, breast cancer is second most common cancer after cervical cancer [2]. Advances in imaging techniques and increased use of fine needle aspiration cytology have greatly assisted the preoperative evaluation of breast lesions. However, in a large proportion of cases differentiation between benign and malignant lesions still rests on histopathological examination. The importance of benign lesions lie in their ability to mimic cancers and not all benign lesions are completely free of risks. Treatment of benign breast disease is preservation of breast tissue as far as possible in contrast to traumatizing mutilating surgeries in breast cancers.

The present study was undertaken with an aim to determine the incidence and analysis of Breast lesions are the leading cause of morbidity and mortality among women worldwide. Breast lesions are broad spectrum of lesions that comprise of many entities

with different characteristics.¹ Around 200,000 cases of breast lesions are diagnosed annually.²

The most common cancer among Indian women is breast cancer accounting to 25.8/100,000 women and mortality 12.7 per 100,000 women.³ Early evaluation of lesion with timely accurate diagnosis can alleviate anxiety of patients and can be lifesaving.³

Benign breast lesions are more common than malignant, which is seen more commonly in age group of 20 to 40 years as opposed to malignant diseases, for which the incidence increases as the age advances.⁴

More than half of the women develop some form of benign breast lesion after 20 years of age.^{5,6} Since a majority of benign lesions are not associated with an increased risk for subsequent breast cancer, unnecessary surgical procedures can be avoided in such lesions.⁷ This study is conducted with the purpose of appreciating histopathological spectrum of various neoplastic and nonneoplastic lesions, their age distribution and clinical aspects from various types of biopsies, lumpectomy and mastectomy specimens of various sex hormones and a common site of neoplasm.⁴

Breast lumps produce anxiety and worry to patients who present to the clinics. Various diseases affect the breast tissues which arise from the glandular epithelium, stratified squamous epithelium and mesenchymal connective tissue. These sometimes become a diagnostic challenge to us.

Histopathological study of the breast lumps is an important aspect for the diagnosis and management of breast diseases. Pathological diagnosis helps us to understand more about prognosis and treatment of the diseases.⁴

Each year the incidence of cancer is increasing, according to 2020 data from GLOBOCAN, breast cancer comprises 9.6% of all the cancers and is the most common cancer after lung and cervical cancer.⁴ The purpose of this study is to identify the spectrum of breast diseases visiting B.P Koirala Memorial

Cancer Hospital and to give a clinico-pathological profile.⁶

MATERIALS AND METHODS

In the present study, a total of 135 breast specimens were received to the department of pathology, GMC Anantapur and was conducted from 2019-2022. All the specimens were evaluated primarily by fixation using 10% Neutral buffered formalin, processed using semi-automatic processor, H&E stained and finally examined for histomorphology under binocular microscope. Out of the 135 specimens, 86 were lumpectomies rest of them being mastectomies. Clinical history with details like age, sex, symptoms, signs, radiological findings related to the cases was collected and correlated with histomorphology and final report is issued.

RESULTS AND OBSERVATION

Among a total of 135 specimens received, 31 cases belonged to the age group between 21-30 with benign being 32 and malignant 1 accounting for 24.4%.²⁴ cases of benign and 3 cases of malignant belonged to the age group of 31-40. Most of the cases among age group >50 belonged to malignant category and among all the malignant cases which were presented belonged to the age group of >50.

126 cases among the total were female consisting of 3 non neoplastic, 88 benign and 35 malignant. 9 cases were male patients, in which 3 were malignant and 6 were nonmalignant.

Among benign lesions of breast, fibroadenoma was the most common one accounting for with 70 cases in total and most of them belonged to the age group between 21 and 30.

Other benign lesions noted were FCD, Gynecomastia, Phyllodes, ADH, lactating adenoma, intraductal papilloma. Few non neoplastic lesions like mastitis and abscess were also noted.

Among a total of 38 malignant cases 34 belonged to IDCC. Each case of mucinous, medullary, lobular, metaplastic carcinomas were noted.

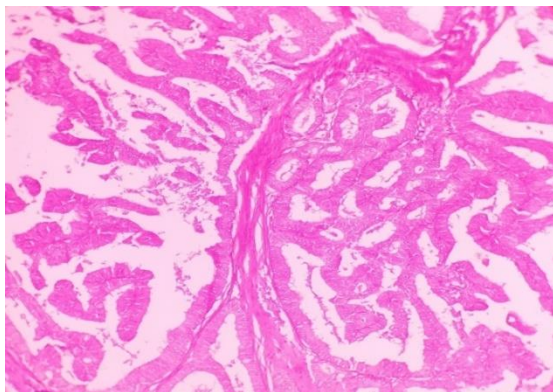


Image 1- Infiltrating papillary carcinoma

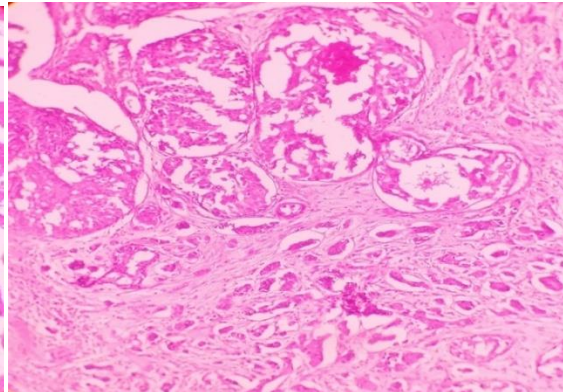


Image 2- Invasive duct cell carcinoma nos

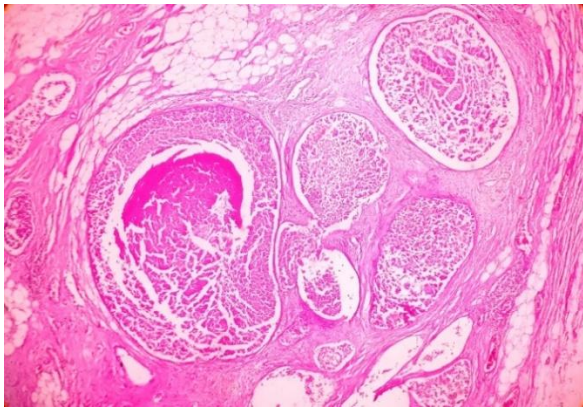


Image 3- Comedo necrosis in a case of IDCC

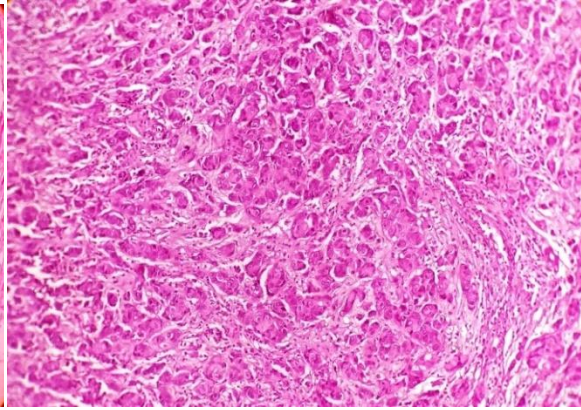


Image 4- IDCC NOS

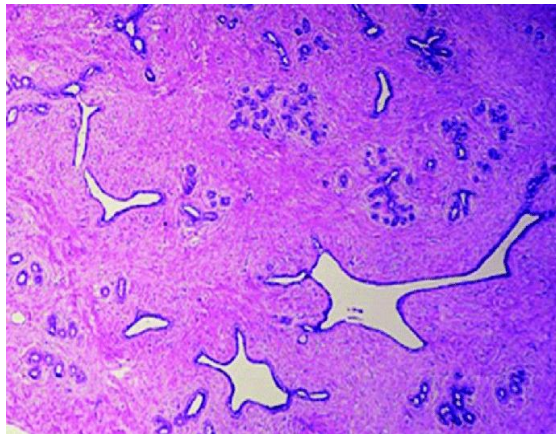


Image 5- Fibroadenoma

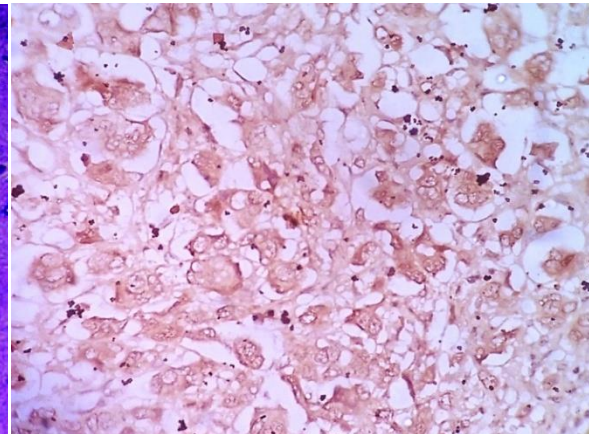


Image 6- IHC stained Mucinous carcinoma breast

Table 1- Age wise distribution of lesions

S. No	Age Range	No. Of Malignant Cases	No. Of Benign Cases	Total	Percentage
1	<20		10	10	7.4
2	21-30	1	32	33	24.4
3	31-40	3	24	27	20
4	41-50	11	22	33	24.4
5	51-60	14	6	20	14.8
6	61-70	8	3	11	8.1
7	>70	1	0	1	0.7

Table 2- Sex wise distribution of lesions

	MALE	FEMALE
BENIGN	6	91
MALIGNANT	3	35

Table 3- Distribution of benign (neoplastic and non-neoplastic) lesions

S.NO	TYPE OF LESION	NO. OF CASES	PERCENTAGE
1	FIBROADENOMA	70	70
2	FCD	6	6
3	PHYLLODES	7	7
4	ADH	4	4
5	INTRADUCTALPAPILLOMA	3	3
6	LACTATING ADENOMA	1	1
7	GYNAECOMASTIA	6	6
8	MASTITIS	3	3
	TOTAL	100	100

Table 4- Distribution of malignant cases

S.NO	TYPE OF LESION	NO. OF CASES	PERCENTAGE
1	IDCC-NOS	34	89.5
2	MEDULLARY	1	2.6
3	MUCINOUS	1	2.6
4	LOBULAR	1	2.6
5	METAPLASTIC	1	2.6
	TOTAL	38	100

DISCUSSION

The percentage of benign lesions in our study is closely in resemblance to Anushree et al study whereas Geeta Mourya et al study showed a little higher incidence.

Malignant lesions percentage in our study is in close approximation to Greta Pandey et al study where the commonest encountered histopathological diagnosis was IDCC NOS in both the studies. Among rare malignant cases similarity in our study was seen with Greta Panda et al study. In addition to all the rare cases which were comparable to other study cases, our study in addition showed a case of metaplastic carcinoma.

Among all the benign cases, almost every study in comparison with ours showed Fibroadenoma as the commonest, fibrocystic disease as the 2nd commonest.

Most common age group in which breast lesions were presented clinically and encountered was between 41 to 50 yrs. in our study which is in close comparison to Greta Panda et al study.

Overall, around 80% of the lesions were presented between the 21 to 60 yrs. of age group.

All in all, the proportion of benign lesions was more in younger age groups compared to malignant incidence, where the percentage of lesions in less than 30 yrs. of age group was around 30.3 % in which greater than 90% of cases were benign similar in other compared studies.

In similar way, percentage of lesions among people aged greater than 40 was around 49% in which almost greater than 80% cases belonged to malignant category.

Table 5- Comparative study of distribution of benign lesions

S.NO	TYPE OF LESION	GRETA PANDA	ANUSHREE ET AL	GEETAMOURYA	OUR STUDY
1	FIBROADENOMA	37.5%	67%	87.1%	70%
2	FCD	3.75	20%	-	6%
3	PHYLLODES	5%	4%	3%	7%
4	OTHERS	53.8%	9%	9.9%	17%

Table 6- Comparative study of distribution of malignant lesions

S.NO	TYPE OF LESION	GRETA PANDA	ANUSHREE	GEETA MOURYA	OUR STUDY
1	IDCC NOS	90.5%	60%	95.8%	89.5%
2	MEDULLARY	0.7%	3%	4.1%	2.6%
3	MUCINOUS	0.7%	-	-	2.6%
4	METAPLASTIC	-	-	-	2.6%
5	LOBULAR	-	9%	-	2.6%
6	OTHERS	-	28%	-	0

Table 7- Comparative study of age wise distribution of lesions

S.No	Age Group	Greta Benign	Greta Malignant	Greta Total	Geeta Benign	Geeta Malignant	Geeta Total	Our Benign	Our Malignant	Our Total	%
1	<20				72	0	72(34.2%)	10		10	7.4
2	21-30	12	6	18(8.3%)	46	3	49(23.3%)	32	1	33	24.4
3	31-40	29	19	41(18.9%)	10	23	33(15.7%)	24	3	27	20
4	41-50	22	45	67(31.2)	7	23	30(14.2)	22	11	33	24.4
5	51-60	12	29	41(18.9%)	2	14	16(7.6%)	6	14	20	14.8
6	61-70	8	28	36(16.7%)	0	8	8(3.8%)	3	8	11	8.1
7	>70	0	9	9(4.2%)	0	2	2(0.95%)	0	1	1	0.7

CONCLUSION

Due to advance diagnostic methods, it has become easy to differentiate benign from malignant cases, but as always histopathological examination and

confirmation remains gold standard which in early cases of presentation can reduce the aggressive treatment modalities. Percentage of malignancies in the male population who presented with lump in

breast noted was high thus requiring closer attention and frequent checkups

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