ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 01 | January - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A STUDY OF HISTOPATHOLOGICAL SPECTRUM OF BREAST LESIONS IN A TERTIARY CARE HOSPITAL

Pathology

Dr Shalini.K	Senior Resident, Pathology, Sri Muthukumaran Medical College Hospital & Research Institute
Dr PremaDevi.E	Associate Professor, Pathology, Sri Muthukumaran Medical College Hospital & Research Institute
Dr.Lionel Mathew	Assistant Professor ,Pathology, Sri Muthukumaran Medical College Hospital & Research Institute
Dr.Jaishree.T	Senior Resident, Pathology, Sri Muthukumaran Medical College Hospital & Research Institute
Dr Saraswathi	Professor And Head, Pathology, Sri Muthukumaran Medical College Hospital & Research Institute
Dr.Muthukumar. M*	Senior Resident, Pathology, Sri Muthukumaran Medical College Hospital & Research Institute. *Corresponding Author

ABSTRACT

INTRODUCTION: Breast lesions are common in females of all age groups and include a variety of benign and malignant lesions the diagnosis of which is difficulty for both Clinicians as well as Pathologists. Histopathological examination forms the pivotal role in the final diagnosis. Malignant breast lesions form major part in malignancy census in a year apart from the commonly occuring benign lesions.

AIM: This study is undertaken to determine the age and gender distribution,frequency and histopathological spectrum of all breast lesions in a tertiary care hospital.

MATERIALS &METHODS:This is a retrospective study of 102 cases conducted in the Department of Pathology at Sri Muthukumaran Medical College and Research Institute from January 2020 to November 2021.Tissues were fixed in 10% formalin followed by routine paraffin embedded processing and stained with Haematoxylin &Eosin.The Histopathological findings were noted and final diagnosis was made.

RESULTS: Female cases were predominant contributing to unilateral benign lesions. 84% cases were diagnosed as benign with fibroadenoma having the highest incidence.Malignancy was confined to only 16% cases with Invasive ductal carcinoma being the predominant.

CONCLUSION: The clinical diagnosis of all breast diseases with symptoms of either pain or lump must be confirmed by Histopathological examination.The pattern of breast lesions provides valuable information concerning correct and adequate treatment.

KEYWORDS

Histopathological diagnosis,Benign& Malignant lesions Breast biopsies Trucut biopsy the occurrence Phyllodes tumor.

INTRODUCTION

Breast lesions are heterogenous disease ranging from developmental abnormality,inflammatory lesions ,benign epithelial and stromal proliferations to various malignant neoplasms.These lesions usually presents with symptoms of lump which is a sensitive issues for females thereby needs timely and accurate diagnosis followed by early intervention.Histopathological examination is considered as the gold standard approach for diagnosis.The treatment of breast lesions depends on the underlying causes and it varies from conservative therapy to radical surgery.The incidence of benign breast lesions begins during 2nd decade and peaks in 4th to 5th decade of life. The incidence of malignant breast lesion which forms around 10% is the leading cause of global cancer that mandates the accurate and precise diagnosis at the earliest for better intervention.This study was done with the purpose of analysing the histopathological spectrum of breast lesions in a tertiary care hospital.

MATERIAL & METHODS

This was a retrospective study done on all the breast biopsies, lumpectomy and mastectomy specimens received in Department of Pathology, Sri Muthukumaran Medical College and Research Institute from January 2020 to November 2021.A total of 102 cases were included in the study.

INCLUSION CRITERIA:

1. Age more than 10 years
2. Breast biopsies,lumpectomy and mastectomy specimens

EXCLUSION CRITERIA:

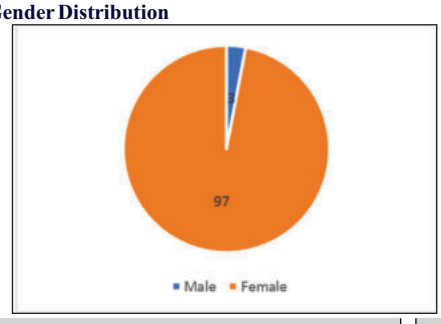
1. Less than 10 years of age
2. Patient previously treated for breast malignancy

Specimens were received in various forms like Trucut biopsy, Lumpectomy and mastectomy.Clinical details, imaging studies and fine needle aspirations reports were collected .Specimens were fixed in 10% formalin followed by macroscopic examination.All mastectomy specimens were oriented, margins were inked and lymph node sampling was done.Extensive bits were taken appropriately from all the specimens.Tissue bits were processed to make paraffin blocks.The sections were cut at 3-4 micron thickness and stained by Haematoxylin & Eosin stain. Microscopic examination was done and the lesions were diagnosed as either benign or malignant. Malignant lesions were diagnosed as per WHO classification and graded according to Nottingham modification of Bloom Richardson system. The lesions were studied according to gender and age distribution, frequency and histopathological features.

RESULTS

During this study 102 samples were included among which lumpectomy specimens was predominant forming 60% of all cases. 98 samples were from female patients and 4 samples belonged to male patients forming 97% and 3%(Fig.1).The peak age of the occurence of breast lesions was in the 3rd decade(44 cases) followed by 4th decade(26 cases) (Tab.1).The most common presenting complaint was lump followed by pain and lump with pain. Nipple retraction with lump in 4 cases and lump with lymphadenopathy in 5 cases was noted. Both benign and malignant lesions were present in the study among which benign lesions forms major component of 84%(Tab.2).The frequency of benign lesions as given in Fig 2. Most of the lesions were unilateral except one case of gynaecomastia that was bilateral. Malignancy were diagnosed in 12% cases among which invasive ductal carcinoma NST was the most common followed by invasive lobular carcinoma

Fig 1: Gender Distribution



Tab 1: Age Distribution

Age	No of cases
<20	3
21-30	14
31-40	44
41-50	26
51-60	7
>60	8

Tab 2: Pattern of Breast lesion

Breast Lesion	Percentage
Benign	84
Malignant	16

Fig 2: Benign Breast lesion

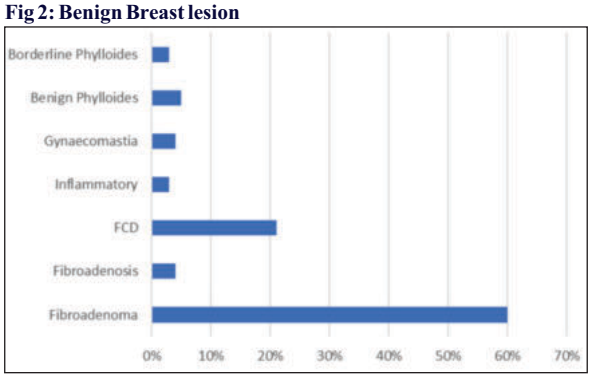
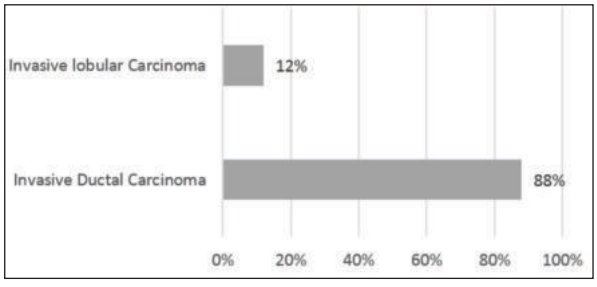


Fig 3:Malignant Breast lesion



DISCUSSION:

The most common benign tumor of the female breast is fibroadenomaoccuring in 2nd to 3rd decade.Other benign lesions include fibrocystic disease,Inflammatorylesions,ductal and lobular hyperplasia.Phyllodes tumor is a intralobular stromal neoplasm and its spectrum progresses from benign to malignant .Malignant ductal breast lesion includes invasive ductal carcinoma, lobular carcinoma, tubular carcinoma, mucinous carcinoma, medullary carcinoma, papillary carcinoma, and metaplastic carcinoma.

Total 102 cases have been included in our study, out of them 98 patients (97%) are females and 4 patients (3%) are males. In a similar study done by KulkarniSangeeta et al[1] ,out of 176 cases, 171 were females (97.16%) and five were males (2.84%). In a study done by Malik et al[2], 94.52% patients were females & 5.48% patients were males. In a study done by Pudale S et al [3], 97.78% patients were females & 2.22% patients were males so, female: male ratio or gender ratio remains more or less similar in all studies.

In our study, of the 102 breast tissue 84% comprised benign breast lesions ,while 16% was constituted by malignant lesions. These findings were comparable with the studies done by Hatim*et al.*[4] who had 80% of the cases and Rasheed*et al.*[5] who had 80.7% cases. The mean age in our study which is 33.63 years is found to be much lesser when compared to the study in the western literature where the mean age is found to be 54 years. In western countries and Africa, the percentage of malignant breast lesions is usually high (10% and 21%, respectively).[6,7]

The most common among the benign lesions in our study was found to be fibroadenoma(60%) and the most commonamong malignant lesion is infiltrative duct cell carcinoma (88%) [tab 2]. Similar results are observed in other studies as well.[8,9]Reported frequency of fibroadenoma in England is about 7.7% and in the USA it is about 8.5%. In this study, it is seen that benign lesions of the breast were more common in 31 to 40 years age group, whereas malignant lesions of the breast were about 16% in >40 years age group, which correlates to the findings in the studies by Kumar and Reddy *et al.*[10]

In our study, the most common breast lesion is fibroadenoma (60%, Fig 4), followed by fibrocystic change 20% and invasive carcinoma 16%. Another study reported by Sangma*et al.*Hatim*et al.*[11], Rasheed*et al* [12] and Dayanand*et al. reported the frequency of pattern of breast lesions as fibroadenoma most common followed by invasive carcinoma and fibrocystic disease.*[13]

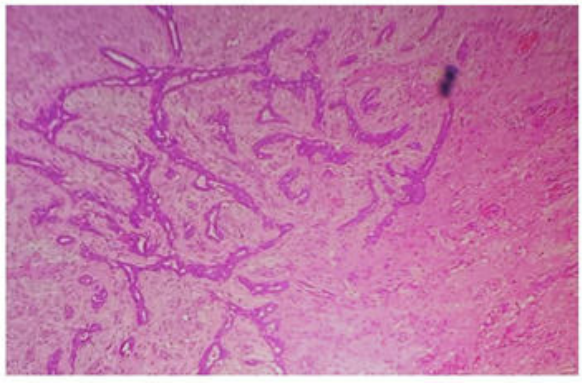


Fig 4 .Fibroadenoma H&E 10 X

Phyllodes tumor were diagnosed in 8% cases in this study. Benign phylloides were diagnosed in 5% cases and Borderline phylloides in 3% cases(Fig 5). One among the borderline phylloides was associated with florid epithelial hyperplasia.[14]

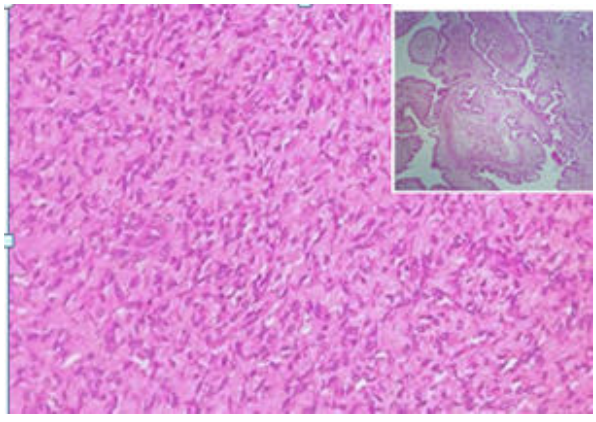


Fig 5.Borderline PhyllodesTumor H&E 40 & 10 X

Infiltrative duct cell carcinoma was seen in 14 specimens, of the total 16 malignant specimens received (88% incidence). 11 cases were reported as Grade3 (Fig 6)and 3 cases as Grade2.This incidence is similar to Malik and Bharadwaj study (88.20%) and Kulkarini*et al.* study (84.85%) conducted in the year 2003 and 2009, respectively.[15,16]

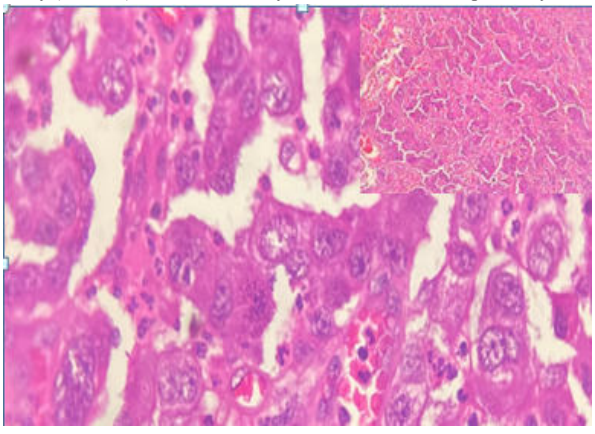


Fig 6.Invasive Ductal carcinoma H&E 40 & 10 X

Invasive lobular carcinoma Grade 1 was diagnosed in 2 cases contributing to 12 % of all malignant cases(Fig 7).[17.18] Specimens included one mastectomy and another lumpectomy with associated fibrocystic disease.

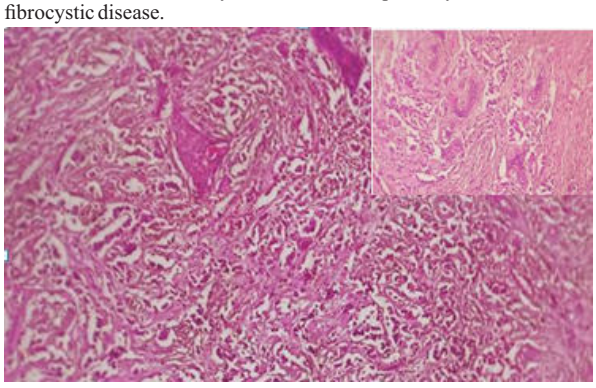


Fig 7.Invasive Lobular carcinoma H&E 10 & 40 X

CONCLUSION:

In the present study females in the age group between 30- 50 yrs diagnosed with benign breast lesions formed about 70% of study population .Fibroadenoma followed by fibrocystic diseases were the most common diagnosed benign breast lesions. This study highlights the significance of diagnosing these benign lesions and distinguishing it from insitu and invasive carcinoma. Lesions associated with insitu component should be confirmed by Histopathological examination and patients should be under follow up as these cases have higher incidence of progression to malignancy. The accurate diagnosis of malignancy at the earliest is needed to prevent its advanced presentation or metastasis for appopriate timely management.

REFERENCES

1. KulkarniSangeeta et al, Histopathological spectrum of breast lesions with reference touncommon cases. J ObstetGynecol India 2009;59(5): 444-452.
2. Malik R, Bharadwaj VK. Breast lesions in young females--a 20-year study for significance of early recognition. Indian J PatholMicrobiol. 2003 Oct;46 (4): 559-62.
3. Pudale S et al. A histopathological study of nonmalignant breast lesions. Int J Res Med Sci. 2015 Oct; 3 (10): 2672-2676.
4. Hatim KS, Laxmikant NS, Mulla T. Patterns and prevalence of benign breast disease in Western India. Int J Res Med Sci2017;5(2):684-8.
5. Rasheed A, Sharma S, Mohsin-ul-Rasool, et al. A three year study of breast lesions in women aged 15-70 years in a tertiary care hospital. Sch J App Med Sci 2014;2(1B):166-8.
6. Ellis H, Cox PJ. Breast problems in 1,000 consecutive referrals to surgical out-patients. Postgrad Med J 1984;60:653-6.
7. Oluwole SF, Fadiran OA, Odesanmi WO. Diseases of the breast in Nigeria. Br J Surg 1987;74:582-5
8. Cole P, Mark Elwood J, Kaplan SD. Incidence rates and risk factors of benign breast neoplasms. Am J Epidemiol. 1978 Aug;108(2):112-20.
9. Khanna U: Benign Breast Lump. A study of 250 cases.Maharashtra. Med. Jr. 1985;34: 397
10. Moolamalla RM, Raghu K. Histopathological spectrum of neoplastic and non-neoplastic breast lesions-a two year study. Int J Sci Stud 2017;4(11):158-62.
11. Rasheed A, Sharma S, Mohsin-ul-Rasool, et al. A three year study of breast lesions in women aged 15-70 years in a tertiary care hospital. Sch J App Med Sci 2014;2(1B):166-8.
12. Sangma MBM, Panda K, Dasiah S. A clinico-pathological study on benign breast diseases. J ClinDiagn Res 2013;7(3):503-6.
13. Dayanand V, Shashidhar HB, Sandya M, et al. Spectrum of breast neoplasms in females: a 10 years. Histopathological review in a tertiary care hospital.Int J Sci Stud 2015;3(2):79-84.
14. Buchberger W, Strasser K, Heim K, Müller E, Schröcksnadel H. Phylloides tumor: Findings on mammography, sonography, and aspiration cytology in 10 cases. AJR Am J Roentgenol 1991;157:715-9.
15. Kulkarni S, Vora IM, Ghorpade KG, Shrivastava S. Histopathological spectrum of breast lesions with reference to uncommon cases. J ObsetGynecol India 2009;59:444-52.
16. Cole-Beuglet C, Soriano RZ, Kurtz AB, Goldberg BB. Fibroadenoma of the breast: Sonomammography correlated with pathology in 122 patients. AJR Am J Roentgenol 1983;140:369-75.
17. McCart Reed, A.E., Kalinowski, L., Simpson, P.T. *et al.* Invasive lobular carcinoma of the breast: the increasing importance of this special subtype. *Breast Cancer Res* 23, 6 (202
18.. Li CI, Anderson BO, Daling JO, Moe RE. Trends in Incidence Rates of Invasive Lobular and Ductal Breast Carcinoma. *JAMA* (2003) 289(11):1421–4. doi: 10.1001/jama.289.11.1421