Section: General Surgery

Original Research Article

A PROSPECTIVE OBSERVATIONAL STUDY ON THE INCIDENCE AND CLINICOPATHOLOGICAL PROFILE OF BENIGN BREAST DISEASES IN WOMEN ATTENDING A TERTIARY CARE HOSPITAL IN EASTERN INDIA

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ABSTRACT

Background: The term "benign breast diseases" is made up of a heterogenous group of lesions that have diverse symptoms or may be detected as incidental microscopic findings. It is relatively common in younger population and the incidence rises during the second decade of life and peaks in the fourth and fifth decades. The aim of this study is to study the spectrum of benign breast diseases in females above 13 years of age.

Materials and Methods: The female patients attending surgery OPD with various breast related complaints were evaluated clinically, radiologically and histo-pathologically.

Results: A total of 100 patients were studied for a duration of 18 months, 65% patients were < 30 years of age and 29% were between 31-40, 6% were between 41-50, Mean age being 30.42 $\pm$ 7.037 years. 39% had BIRADS I lesion, 52% had BIRADS II and 9% had BIRADS III. Fibroadenoma was found in 23%, Fibroadenosis in further 18%, Breast Abscess in 14%, 7% Bilateral Mastalgia and others with various other diagnosis. In our study most of the patient had BIRADS II lesion, however more number of patients had Fibroadenoma in FNAC/Cytology.

Conclusion: BIRADS II is the most common benign breast disease with Fibroadenoma being the predominant.

Keywords: Breast Discharge, BIRADS, Mastalgia, Benign Diseases.

INTRODUCTION

Breast diseases encompass a wide spectrum of diseases, including aberrations in normal development, abscess, various benign lesions to various malignant lesions. Breast development is one of the first obvious signs of puberty and any variation in its normal progression often deserves attention.[1] Breast lumps are rare in pediatric population but presence of any breast mass frequently raises substantial patient and parental concern of a potential cancer.[2] Pediatric breast lumps are usually benign and self-limited, although malignancies have been reported in children.[3] The most prevalent benign breast lesions in adolescents include fibrocystic disease, fibroadenoma (juvenile or giant), breast trauma, and breast infection. Less prevalent benign breast lesions include mammary duct ectasia and cysts of Montgomery. Various studies conducted worldwide reported that a detailed patient history, focused physical examination, radiological imaging (ultrasonography or mammography), along with a tissue specimen analysis (fine-needle aspiration cytology or core needle biopsy), are used as diagnostic tools for a possible malignant disease at an early stage. The breast is a highly modified apocrine sweat gland, composed of both epithelial and connective tissue components, and the range of diseases that affect it could be inflammatory or neoplastic (benign or malignant).[4] Reports by

Global Cancer Incidence, Mortality and Prevalence (GLOBOCAN) show that breast cancer most common cancer in women, with 1 in 8 cancer diagnoses. In 2022, there were 2.31 million new cases worldwide i.e 11.6 % of all cancers. It is also the leading cause of cancer death in women, responsible for 0.67 million deaths.[5] Various studies have reported benign breast disease (BBD) to be more common than malignant breast lesions.[6,7]

MATERIALS AND METHODS

This is a hospital-based prospective observational study, done from 1st February 2021 to 31st July 2022, in the Department of General Surgery, Burdwan Medical College, Burdwan. Data from 100 patients were collected. A detailed history and clinical examination were performed on the patient. Then an Ultrasonography was performed, followed by histopathology either with FNAC or True cut biopsy. The clinical findings were corroborated with radiological and histopathological findings. The inclusion criteria are i) females above 13years of age ii) Breast pain iii) Breast lump iv) Breast discharge v) Sore or ulcer over the Breast region vi) abscess formation in breast region. The exclusion criteria were i) Females with primary elsewhere with secondary in breast ii) Females with malignant breast disease.

Statistical Analysis

For statistical analysis data were entered into a Microsoft excel spreadsheet and then analyzed by SPSS (version 27.0; SPSS Inc. Chicago, IL, USA) and GraphPad Prism version 5. Data has been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables.

Z-test (Standard Normal Deviate) was used to test the significant difference of proportions. Correlation was calculated by Pearson correlation analysis. The Pearson product-moment correlation coefficient was a measure of the linear dependence between two variables X and Y. Multivariate analysis was performed by logistic regression method for calculation of risk factors. The Kaplan-Meier estimator (Kaplan-Meier survival analysis) was a non-parametric statistic used to estimate the survival function from time data.

RESULTS

Table 1: Distribution of Age in Years

Age in years	Frequency	Percent
≤30	65	65.00%
31-40	29	29.00%
41-50	6	6.00%
Total	100	100.00%

Table 2: Distribution of Complaints

Complaints	Frequency	Percent
Discharge from Left nipple	3	3.00%
Discharge from Right nipple	2	2.00%
Finger like projection from nipple	4	4.00%
Fluid coming out nipple	1	1.00%
Itching and scaly lesions on Right breast	1	1.00%
Lump in Left breast	3	3.00%
Lump in Right breast	3	3.00%
Pain & swelling in left breast following trauma	1	1.00%
Pain and induration in Left breast	2	2.00%
Pain and induration in Right breast	2	2.00%
Pain and lump in Right breast	5	5.00%
Pain and Redness Left breast	1	1.00%
Pain and redness of both breasts	1	1.00%
Pain and Redness Right breast	3	3.00%
Pain and swelling in Right breast	5	5.00%
Pain and swelling Left breast	7	7.00%
Pain and swelling Right breast following trauma	2	2.00%
Pain and tenderness both breasts	4	4.00%
Pain and tenderness in Left breast	3	3.00%
Pain in both breast	8	8.00%
Pain in Left breast	10	10.00%
Pain in Right breast	12	12.00%
Projection from nipple	2	2.00%
Reddish discharge from nipple	1	1.00%
Swelling around nipple Left breast	2	2.00%
Swelling around nipple Right breast	2	2.00%
Swelling in both breasts	1	1.00%
Swelling in Left breast	6	6.00%
Swelling in Right breast	1	1.00%
Whitish fluid discharge from nipple Left breast	1	1.00%
Whitish fluid discharge from nipple Right breast	1	1.00%
Total	100	100.00%

Table 3: Distribution of Clinical Findings

Clinical Findings	Frequency	Percent
Cystic Swelling Around Nipple	1	1.0%
Diffuse Lump	1	1.0%
Erythematous Swelling	14	14.0%
Finger Projection From Nipple	1	1.0%
Lump	31	31.0%
Multiple Lumpy	1	1.0%
Multiple Small Swellings	1	1.0%
Normal	13	13.0%
Projection From Nipple	4	4.0%
Scaly Lesions	1	1.0%
Small Lumpy Swelling	7	7.0%
Swelling	17	17.0%
Swelling Around Nipple	3	3.0%
Tenderness	5	5.0%
Total	100	100.0%

Table 4: Distribution of USG

USG	Frequency	Percent
BIRADS I	39	39.0%
BIRADS II	52	52.0%
BIRADS III	9	9.0%
Total	100	100.0%

Table 5: Distribution of FNAC/Cytology

FNAC/Cytology	Frequency	Percent
DGL By Flat Cuboidal and columnar Cells	4	4.0%
Fibroadenoma	27	27.0%
Fibroadenosis	18	18.0%
INAT With Foamy Hitiocytes and MGC	5	5.0%
Inflammatory Cells	1	1.0%
Inflammatory cells & pus Cells	14	14.0%
Keratinous Cyst	1	1.0%
Leaf like epithelial pattern formed by EIP	6	6.0%
Normal glandular tissue	11	11.0%
PIWLymphocytes, plasma cells, neutrophils and histiocytes	3	3.0%
Proliferative epihelial cells like papilloma	8	8.0%
Secretory epithelial cells with fat and protein	1	1.0%
Spongiosis, perivascular lymphocytic infiltrate	1	1.0%
Total	100	100.0%

Table 6: Distribution of Diagnosis

Diagnosis	Frequency	Percent
B/L Mastalgia	7	7.0%
Breast Abscess	14	14.0%
Breast Cyst	2	2.0%
Breast Eczema	1	1.0%
Breast Papilloma	2	2.0%
Duct Ectasia	3	3.0%
Duct Papilloma	5	5.0%
Fibroadenoma	23	23.0%
Fibroadenosis	18	18.0%
Galactocele	1	1.0%
Giant Fibroadenoma	4	4.0%
Mastitis	1	1.0%
Nipple Discharge	4	4.0%
Nipple Papilloma	1	1.0%
Periareolar Cyst	1	1.0%
Phyllodes tumors	6	6.0%
Simple Cyst Of Breast	2	2.0%
Traumatic Fat Necrosis	5	5.0%
Total	100	100.0%

The value of z is 0.8758. The value of p is .37886. The result is not significant at $p < .05$.

Table 7: Distribution of mean Age (yrs)

	Number	Mean	SD	Minimum	Maximum	Median
Age (yrs)	100	30.4200	7.0370	20.0000	50.0000	30.0000

In above table showed that the mean Age (mean± s.d.) of patients was 30.4200± 7.0370 (years).

Table 8: Distribution of mean Duration (Day/Month/Week/Years)

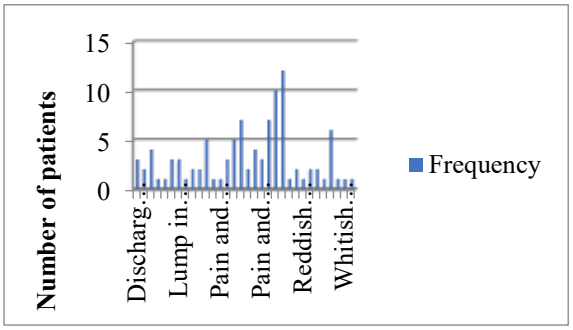
	Number	Mean	SD	Minimum	Maximum	Median
Duration (Day/Month/ Week/ Years)	99	4.2626	2.1217	1.0000	12.0000	4.0000

In above table showed that the mean Duration (Day/Month/Week/Years) (mean± s.d.) of patients was 4.2626± 2.1217.

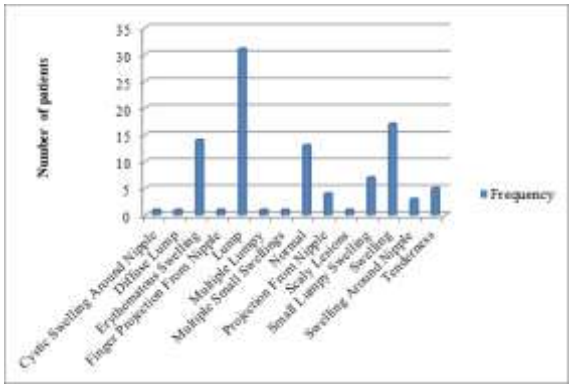
Table 9: Distribution of mean Size

	Number	Mean	SD	Minimum	Maximum	Median
Size	73	15.8356	13.5859	0.5000	70.0000	12.0000

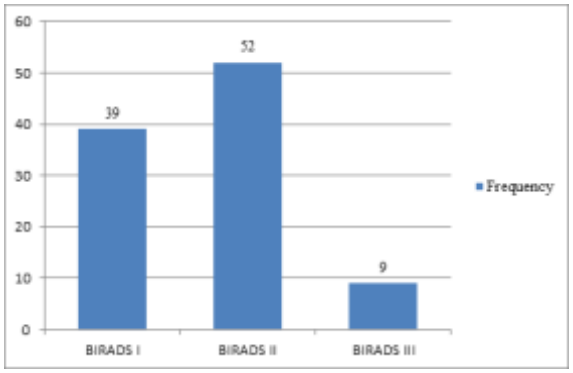
In above table showed that the mean Size (mean± s.d.) of patients was 15.8356± 13.5859.



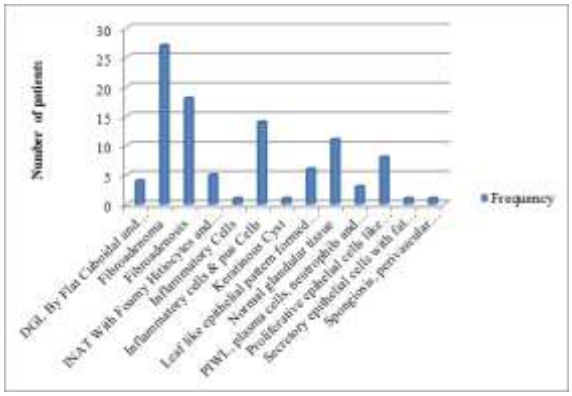
The value of z is 5.1004. The value of p is < .00001. The result is significant at p < .05.



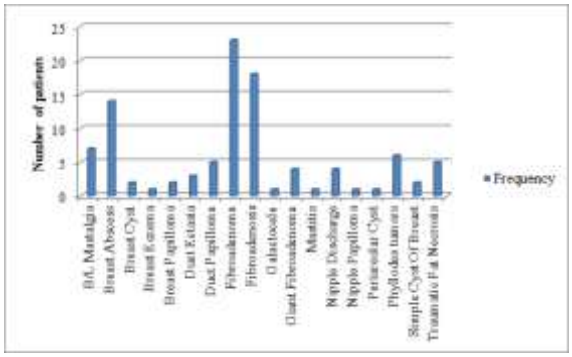
The value of z is 2.3179. The value of p is .02034. The result is significant at p < .05.



The value of z is 1.846. The value of p is .06432. The result is not significant at p < .05.



The value of z is 2.277. The value of p is .0226. The result is significant at p < .05.



The value of z is 0.8758. The value of p is .37886. The result is not significant at p < .05.

DISCUSSION

A hospital based prospective Study was conducted in Department of General Surgery, Burdwan Medical College, Burdwan. The study period was 18 months (1stFebruary, 2021 - 31stJuly, 2022).

100 patients were included in this study.

Manjiri S et al. (2018) aimed of the current study was to assess the incidence and varying clinical presentation of benign breast lumps in adolescent age group in a Tertiary care Medical College Hospital.[8] In our study, out of 100 patients, most of the patients were <=30 years of age [65(65.0%)]. Rest of 29(29.0%) patients were 31-40 years of age and 6(6.0%) patients were 41-50 years of age. Age was

statistically significant (p<.00001). The mean Age of patients was [30.4200+=7.0370(yrs)].

Rayne S et al. (2017) showed that while most breast-related research focuses on cancer, presentation of symptomatic persons in non-screened environments requires understanding the spectrum of breast diseases so as to plan services in resource-constrained settings. Pain (28.5%) were the most common symptoms.[9] In our study, we found that, most of the patients had Pain in right breast [12(12.0%)]. However, pain in left breast (10.0%) followed by pain in both breast (6.0%) which was statistically significant (p<.00001).

Oedina SO et al. (2018) found that breast disorders cause great anxiety for women especially when they occur in pregnancy because breast cancer is the most common cause of cancer related deaths in women. Women with breast disorders were referred for Breast Ultrasound Scan (BUS) and those with Breast Imaging Reporting and Data System (BIRADS)>= 4 had ultrasound guided biopsy. Twenty out of 127 (15.7%) participants who had BUS performed were classified as BIRADS>=3.[10] In our study, We found that, most of the patients had BIRADS 2 [52(52.0%)] and it was not statistically significant(p=.06432).

Li J et al. (2018) showed that to understand which breast cancer (BC) risk factors also increase the risk of fibroadenoma and investigate whether these factors have the same effect in BC patients with previous fibroadenoma. the mean ages at diagnosis of fibroadenoma and BC were 42.6 and 48.3 years. Age at fibroadenoma diagnosis was associated with the transition from fibroadenoma to BC (hazard ratio per year increae = 1.07[95% confidence interval = 1.03 to 1.12]). They showed that biopsy confirmed fibroadenoma shared many risk factors with BC.[11]

In our study, we showed that, more number of patients had Fibroadenoma in FNAC/ Cytology [27 (27.0%)] which was statistically significant.

CONCLUSION

In our study, out of 100 patients, most of the patients were <=30 years of age. Age was statisctically significant. The mean Age of patients was [30.4200+=7.0370(years)].

In our study, all patients were Females.

We found that, most of the patients had Pain in Right breast. However pain in left breast was next, which was followed by pain in both breasts which was statistically significant.

It was found that, most of the patients had Lump in Clinical Findings. However, swelling was next, which was followed by Erythematous Swelling though it was statistically significant.

We observed that, higher number of patients had Left side followed by Right side but this was not statistically significant.

We found that, most of the patients had BIRADS II and it was not statistically significant. We showed that, more number of patients had Fibroadenoma in FNAC/ Cytology which was statistically significant.

In our study, most of the patients had Fibroadenoma in Diagnosis which was not statistically significant (p=.37886)

We found that, the mean Duration (Day/Month/Week/Years) of the patients was [4.2626+-2.1217] and mean Size of patients was [15.8356+-13.5859].

Limitations

The notable shortcomings of this study are:

1. The sample size was small. Only 100 cases are not sufficient for this kind of study.
2. The study has been done in a single centre.
3. The study was carried out in a tertiary care hospital, so hospital bias cannot be rules out.
4. Ongoing COVID 19 pandemic and lockdown has further hampered the study.

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