

SPECTRUM OF BENIGN BREAST DISEASES ON A REMOTE INDIAN ISLANDGargade C.B¹, Deshpande A.H²¹Associate Professor, Department of Pathology, Andaman & Nicobar Islands Institute of Medical Sciences, Port Blair.²Professor and HOD, Department of Pathology, Andaman & Nicobar Islands Institute of Medical Sciences, Port Blair.**ABSTRACT****BACKGROUND**

Lump in the breast has assumed increasing importance in recent years because of the public awareness of breast cancer. Benign lesions of breast are the most common lesions and constitute a heterogeneous group of disorders including developmental abnormality, epithelial and stromal proliferation, inflammatory lesions and neoplasm. Few benign proliferative lesions have been reported to be at increased risk for development of subsequent breast cancer.

The aim of the study is to study the frequency of various benign breast diseases in the females.

MATERIALS AND METHODS

This descriptive study of histopathologically diagnosed breast lesions was carried out in the Department of Pathology of a newly-established medical college from January 2016 to May 2017. The incidence of benign breast lesions was found to be 78.6% of all breast lesions. Most of the benign breast lesions were seen below age of 40 yrs. (86.14%); 38.27% (31/81) patients belonged to third decade of life (21-30 years) followed by 25.92% (21/81) in second decade (11-20 years) and 22.22% (18/81) from fourth decade (age between: 31-40 years). Fibroadenoma was the most common benign breast disease seen in 62.96% (51/81) of patients followed by fibrocystic disease in about 8.64% (7/81) patients. Bilateral gynaecomastia was the most common benign disease seen in all male patients.

CONCLUSION

Benign breast diseases were more common than malignancies in our study. Fibroadenoma was the commonest of all benign breast diseases. Fibroadenoma was seen more commonly in second and third decade, while fibrocystic disease was seen in little older patients.

KEYWORDS

Breast, Benign Breast Diseases, Fibroadenoma.

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BACKGROUND

Around 50% of women in their lifetime experience breast-related signs and symptoms. All breast lesions are not malignant. Globally, Benign Breast Diseases (BBD) are the most common lesions accounting 90% of breast related clinical presentations.¹

BBD includes all non-malignant conditions of the breast, including benign tumours, trauma, mastalgia, mastitis and nipple discharge. Benign tumours include pathologic changes that do not increase a patient's risk for developing cancer, lesions that confer a slightly increased risk and lesions that are associated with up to 50% risk of developing breast cancer.²

Hence, it is essential to recognise and study these lesions in detail.

Aims and Objectives-

The aim of this study was to find the frequency of various benign breast diseases in females. The objective was to find the incidence of various benign breast lesions in different age groups.

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**MATERIALS AND METHODS**

This descriptive study of 81 cases of histologically diagnosed benign breast lesions was carried out in the Department of Pathology, at newly-established teaching hospital on an Indian Island from January 2016 to May 2017. Since all cases were taken from record of Pathology Department, ethical consideration was not necessary. Male and female patients of all age group with biopsy-proven benign diseases of the breast were included in this study. Patients with biopsy-proven malignant diseases and inadequate core biopsies were excluded from present study. The demographic characteristics of patients were presented in excel sheet and analysed for the frequency of each lesion and their distribution in various age group.

RESULTS

During study period, 107 breast samples were received in Department of Pathology in the form of modified radical mastectomy, lumpectomy, wedge biopsy and core biopsy. All core biopsies (4/107) received were inadequate to report, hence excluded from study. On histopathological examination of 103 cases of breast lesions, 81 (78.64%) were benign and 21.36% were malignant. Out of 81 benign lesions, 77 (95.06%) were seen in female and 4 (4.94%) were seen in male.

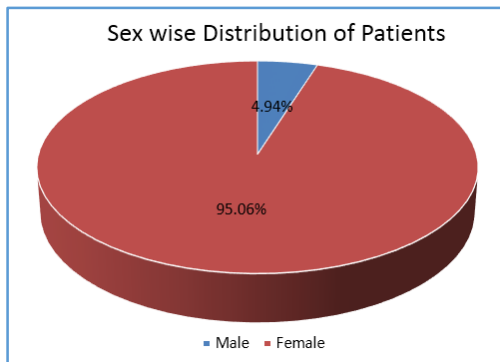


Figure 1. Sex Wise Distribution of Benign Breast Diseases

Commonest benign breast lesion in female was fibroadenoma (62.96%), followed by fibrocystic disease (8.64%). Distribution pattern of benign breast disease is shown in Table 1.

Sl. No.	Type of Lesions	No. of Cases	Percentage of Total Benign Breast Lesions
Lesions in Female			
1.	Breast abscess	6	7.4
2.	Fat necrosis	1	1.23
3.	Mammary duct ectasia	1	1.23
4.	Fibrocystic disease	7	8.64
5.	Epidermal inclusion cyst	3	3.7
6.	Axillary breast	3	3.7
7.	Hamartoma	1	1.23
8.	Lactating adenoma	2	2.46
9.	Fibroadenoma	51	62.96
10.	Benign phyllodes	2	2.46
Lesions in Male			
1.	Gynaecomastia	4	4.93

Table 1. Distribution and Incidence of Benign Breast Lesions

Age distribution pattern reveals most of the cases of benign breast lesions were found below 40 years of age in third decade followed by second decade.

Sl. No	Type of Lesion	Age Group in Years					
		11-20	21-30	31-40	41-50	51-60	61-70
Lesions in Female							
1.	Breast abscess	2	2	1	1	-	-
2.	Fat necrosis	-	-	-	1	-	-
3.	Mammary duct ectasia	-	-	1	-	-	-
4.	Fibrocystic disease	-	-	5	1	-	1
5.	Epidermal inclusion cyst	-	1	-	1	1	-
6.	Axillary breast	-	2	1	-	-	-
7.	Hamartoma	-	-	1	-	-	-
8.	Lactating adenoma	-	2	-	-	-	-
9.	Fibroadenoma	19	23	8	1	-	-
10.	Benign phyllodes	-	-	1	1	-	-
Lesions in Male							
1	Gynaecomastia	-	1	-	2	1	-
Total		21	31	18	8	2	1

Table 2. Age Wise Distribution of Benign Breast Lesions

Fibroadenoma 51 (62.96%) was the most frequent diagnosis encountered in female followed by fibrocystic changes, which constituted 8.64% of the BBD. Most of the fibroadenomas were seen in third decade of life 23 (45.09%), followed by second decade 19 (37.25%). Eight cases were noted in fourth decade and one case in fifth decade. Fibroadenoma was bilateral in two cases (3.92%) and seen in right and left breast in 26 (50.98%) and 23 (45.09%) cases, respectively. Three cases of fibroadenoma showed myxoid change and in one case stroma showed lipomatous differentiation.

Fibrocystic disease seen in 7 cases (8.64%) was the second most common breast lesion with maximum age incidence in the age group of 31-40 years (5/7). Minimum age noted in fibrocystic disease was 32 years and maximum 66 years. In later, case focal mild atypical ductal hyperplasia was noted.

Nonspecific mastitis and breast abscess constitutes 6 (7.4%) of all benign breast lesions in female. Other inflammatory lesions included were duct ectasia and fat necrosis.

Epidermal Inclusion Cyst (EIC) of breast accounted for 3.7% (3/81) of benign breast disease in female.

One case of benign phyllodes tumour was seen each in third and fourth decade.

Lactating adenoma was seen in 2.46% cases.

Adenolipomatous hamartoma of left breast was noted in 35-year-old female.

There were four cases of gynaecomastia. Bilateral gynaecomastia was observed in one case. Maximum age noted in gynaecomastia was 60 years.

DISCUSSION

In this study, benign breast diseases accounted for 78.6% (81/103) all breast diseases. This finding is in tandem with previous reports from Bagale P et al,³ Rasheed A et al,⁴ Pudale S et al⁵ and Sarma U et al⁶ where BBDs accounted for 78.5%, 77.7%, 71.15% and 70% of all breast diseases, respectively.

Similar studies have been documented in other parts of the world where incidence of BBD is similar to our study. In report by Forae GD et al⁷ from Nigeria, BBD constitutes 71.2% while higher incidence of benign breast disease of 85.2% is reported by Khan MA et al⁸ from Pakistan.

In our study, about 86.41% of the patients with BBD were in the age group between 11-40 years with peak incidence (38.27%) in age group between 21-30 years. Similar incidence of benign breast disease in the age group 21-30 is reported by Echejoh G et al from Nijeria.⁹

In study by Khanzada TW et al,¹⁰ majority of the patients (82%) were below the age of 40 years with peak incidence (43.5%) in age group between 21-30 years.

Other studies from India by Vimal M et al¹¹ and Kaki OB et al¹² reported higher incidence of BBD of 50% and 67% respectively in age group of 21-30 yrs.

In the present study, fibroadenoma 51/81 (62.96%) is the most common benign lesion, which is corresponding to Kulkarni et al study¹³ in which fibroadenoma accounted for 62.32% of benign lesions.

In present study, fibroadenoma was most commonly seen in 23/51 (45.09%) patients in third decade (21-30 years) of life and in 19/51 (37.25%) patients during second decade (11-20 years) of life. Similar findings were reported by Hatim

KS et al¹⁴ in his study where majority of fibroadenoma patients belonged to 21-30 years (43.5%), followed by 11-20 years (37.4%) of age group.

In our study, 26 patients of fibroadenoma presented with lump in the right breast (50.98%) followed by 23 (45.09%) in left breast. Bilateral fibroadenoma of breasts was seen in 2 cases (3.92%). Sangma et al¹⁵ noted 48% lesions in right breast and 40% in left breast, while Bagale P et al³ noted 95% cases in left breast and rest were detected in both breasts.

Fibrocystic disease of the breast can mimic carcinoma in clinical, radiographic, gross and microscopic appearance. Some forms, especially those that are proliferative and atypical are associated with an increased risk for the development of carcinoma. Fibrocystic disease was the second most common BBD seen in our study (8.64%). Five out of seven cases (71.42%) were from fourth decade while one case (14.28%) was from fifth decade and one (14.28%) was from seventh decade of life. Female showing fibrocystic disease in seventh decade also showed mild atypical ductal hyperplasia.

Bagale P et al,³ Pudale et al⁵ and Hatim KS et al¹⁴ also noted fibrocystic disease as second common BBD after fibroadenoma accounting for 11.24%, 32% and 4.3%, respectively. Bagale P et al³ and Shashikala et al¹⁶ noted most of the cases in fourth decade while Sangma et al¹⁵ noted most of cases in third and fourth decades. While Chaudhary et al¹⁷ in his study of 234 patients found fibrocystic disease as the most common BBD with maximum age incident in the fifth decade of life.

Most Indian and other studies elsewhere reported Fibrocystic Change (FCC) as the second most common finding. It is important to note, however, that few studies showed FCC as the most common BBD.¹⁸⁻²⁰

Epidermal inclusion cysts of breasts were seen in three female patients constituting 3.7% of all benign breast lesions. First, histologically defined case of EIC of the breast was reported in December 1900 at The Johns Hopkins Hospital.²¹

EIC of the breast typically affects individuals in the fifth decade of life and males are affected in a small proportion of cases. In present study, all three cases of EIC were seen in female individuals; while age predilection of fifth decade was not noted. International literature has reported 90 cases of EIC of the breast.²²

Two patients in our study (2.46%) showed benign phyllodes; one was in fourth decade and other was in fifth decade. These findings were compatible with Forae GD and Olu-Eddo et al²³ where benign phyllodes tumour constituted 1.8% of BBDs and most commonly encountered between the third and fifth decades of life. Mudholkar et al²⁴ and Mallikarjuna et al²⁵ noted maximum number of cases in fourth decade, while Pudale et al⁵ noted most of the cases in fifth decade.

However, our findings are in contrary to the reports by Nzegwu et al,²⁶ Irabo and Okolo et al²⁷ and Chalya PL et al²⁸ where patients with benign phyllodes were aged below 20 years of age. Benign phyllodes tumour below 20 yrs. of age are rarely reported in Indian literature.^{29,30}

Breast abscesses are mostly seen in lactating mothers, but it might occur in female who do not lactate. Breast abscess was seen in six cases in our study accounting for 7.4% of

cases. Four out of six breast abscesses were seen in lactating mothers.

In a study done by Ullah et al,³¹ 15% had breast abscesses.²⁹ Breast abscess in study by OB Karki et al¹¹ accounted for 11% of cases and all of them were lactating mothers except one. Similar findings were noted by Khanzada TW et al.¹⁰

In Indian study, incidence of breast abscess ranges from 1%, 1.67% to 6.5% as reported by Hatim KS et al,¹⁴ Pudale S et al⁵ and Bagale P et al,³ respectively. In present study, breast abscess were found in patient of age between 21-30 years, which is similar to that observed by Hatim KS et al.¹⁴

Lactating adenoma occurred in 2.46% of the patients and all were in their third decade of life. In a study by Pudale et al,⁵ incidence of lactating adenoma was 1.67% of all benign breast disease and mean age of presentation was 27 yrs.

One case of adenolipomatous hamartoma of the breast was reported in our study constituting 1.23% of all the cases. Two cases of hamartoma (0.31%) were reported by Forae et al,⁷ while Pudale S et al⁵ reported a single case (0.18%) in their study.

Fat necrosis is a benign non-suppurative inflammatory process of adipose tissue. It is important to diagnose fat necrosis, because it can often mimic carcinoma of the breast. Fat necrosis in the breast is a common pathologic condition with a wide variety of presentations on mammography, ultrasound and MRI.

A single case of fat necrosis was reported in 50 yrs. old female in our study accounting for 1.23% of all benign breast lesions, which is similar to that reported by Hatim KS.¹⁴ Fat necrosis is found to be 0.8% of breast tumours and 1% in breast reduction mammoplasty cases. The average age of patients is 50 years. Karki et al noted¹² 1% cases of fat necrosis while Bagale P et al⁵ reported 11 cases (2.2%) of fat necrosis. In study by Bagale P et al, 10 cases of fat necrosis were observed in reproductive age group and one case was seen in sixth decade. The high incidence of fat necrosis mainly in reproductive age group could be secondary to leakage of milk in galactocele or lactating adenoma.

CONCLUSION

The spectrum of benign breast diseases in our study does not appear to differ much from other studies with fibroadenoma being the most common benign breast lesions. Benign breast disease was observed mainly before 40 yrs. of age. Premalignant condition like atypical ductal hyperplasia was less common in our study and a single case was noted in 60 yrs. elderly female.

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