

## Frequency of benign breast diseases in female patients presenting with breast complaints - a study at a tertiary care center

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**Abstract:** *Background:* Throughout life period of female, breast is subjected to constant physical and physiological alterations that are related to puberty, menstrual cycle, pregnancy, lactation, and menopause. Benign breast diseases (BBD) constitute a heterogeneous group of breast lesions which include developmental abnormalities, inflammatory and granulomatous lesions, epithelial and stromal proliferations, and neoplasms. *Methods:* This is a prospective study of 116 females with breast complaints presenting to surgery department over a period of one year. Malignant cases are excluded from the study. In addition to detailed history, triple assessment including thorough clinical examination, imaging study and tissue biopsy was done to arrive at a diagnosis. *Results:* Most common BBD is fibroadenoma followed by mastalgia, breast abscess and fibrocystic disease in our population. Commonest way of presentation was lump in breast followed by mastalgia and nipple discharge. *Conclusion:* The patients of BBDs generally present with complaints like breast lump, breast pain or nipple discharge. All the patients with discrete breast lumps should undergo a triple assessment to make an early diagnosis.

**Keywords:** Benign breast disorders, Aberrations in the Normal Development and Involution, fibroadenoma, mastalgia, fibrocystic disease.

### Introduction

Benign Breast Diseases (BBDs) is a group of breast diseases which is not cancer. It is the most common cause of breast problems in females. Up to 30% of the women who suffer from BBDs will require treatment at some time in their lives [1].

The etiology and risk of BBDs have not been extensively studied, despite an increasing incidence of BBDs detected by population-based mammographic screening. However, the exact incidence rates are unexplored. Of importance, a history of certain BBDs is also a risk factor for breast cancer; benign proliferative disease with or without atypia increases the risk approximately 4- and 2-fold, respectively, whereas it is less clear whether non proliferative diseases affect the risk.

In addition, family history of breast cancer influences the risk of breast cancer after a BBD diagnosis, and the risk may be further elevated in younger women. Therefore, it is important to

improve our understanding of benign vs malignant breast diseases for breast cancer risk assessment [2].

Benign breast disease incidence is generally not well estimated. Indeed, BBD is not always symptomatic, and most of the women do not come in for medical consultation.

*Aim and objectives:* The study was to observe the pattern and frequency of benign breast diseases among the female patients attending surgical OPD in a tertiary care hospital.

### Material and Methods

One year prospective study was conducted in a tertiary care center in department of general surgery.

*Inclusion Criteria:*

- Patient giving consent

- Premenopausal and post-menopausal female patients with breast complaints presenting to surgical opd

*Exclusion Criteria:*

- Clinically obvious malignant lumps
- Patients with features of carcinoma on FNAC.

*Sample size:* 116 patients

*Study procedure:*

- A written informed consent was taken. Direct interview with the patient and obtaining a detailed history and a Thorough clinical examination
- A pre-tested structured proforma was used to collect this information of individual cases.
- FNAC was be done for all palpable lesions and patients with breast nodularity.
- Ultrasound and mammography of the breast was performed in patients aged above 35 years, patients with nipple discharge and in patients with non-cyclical mastalgia.

*Ethical consideration:* Approval of Institutional Ethics Committee was taken before the start of the study.

**Results**

This study was conducted in department of general surgery. A total of 116 patients were analyzed and following results were obtained:

Age group (years)	Number of patients	Percentage
≤ 20	21	18.10
21 to 30	30	25.86
31 to 40	41	35.34
41 to 50	16	13.79
More than 50	8	6.90
Total	116	100
Mean ± SD	32.78 ± 10.89	

35.34 percent and 25.86 percent of the patients belonged to the age group of 31 to 40 years and 21 to 30 years respectively. Mean age of the patients was 32.78 years (Table-1).

Chief complaint	Number of patients	Percentage
Pain	15	12.93
Lump	99	85.34
Nipple discharge	19	16.38
Pain and lump	33	28.45

Lump was the chief complaint in 85.34 percent of the patients while lump along with pain in 28.45 percent of the patients. Nipple discharge was seen in 16.38 percent of the patients. Pain was seen in 12.93 percent of the patients (Table-2).

Radiological findings	Number of patients	Percentage
Phyllodes tumor	3	2.59
Epidermal cyst	1	0.86
Fibroadenoma	47	40.52
Accessory breast	1	0.86
Bilateral Fibroadenoma	1	0.86
Breast abscess	14	12.07
Duct ectasia	4	3.45
Fibroadenoma with fibrocystic changes	14	12.07
Fibrocystic disease	21	18.10
Galactocele	3	2.59
Intraductal papilloma	1	0.86
Mastitis	6	5.17
Total	116	100

Fibroadenoma was seen in 40.52 percent of the patients while Fibroadenoma was with fibrocystic changes were seen in 12.07 percent of the patients. Fibrocystic diseases were seen in 18.1 percent of the patients. Mastitis was seen in 5.17 percent of the patients while Galactocele was seen in 2.59 percent of the patients. Intraductal papilloma was seen in 0.86 percent of the patients. Breast abscess and duct ectasia were seen in 12.07 percent and 3.45 percent of the patients. Phyllodes tumor and epidermal cyst were seen in 2.59 percent and 0.86 percent of the patients respectively. 0.86 percent of the patients showed presence of bilateral Fibroadenoma.

Accessory breasts were seen in 0.86 percent of the patients (Table-3).

**Table-4: Distribution of patients according FNAC findings**

FNAC findings	Number of patients	Percentage
Benign proliferative lesion	1	0.86
Duct ectasia	4	3.45
Epidermal cyst	1	0.86
Fat necrosis	1	0.86
Fibroadenoma	52	44.83
Fibroadenoma with fibrocystic changes	10	8.62
Fibrocystic disease	8	6.90
Galactocele	3	2.59
Lipoma	1	0.86
Phyllodes Tumor	3	2.59
Simple cyst	2	1.72
No opinion possible	1	0.86
NA	52	44.83
Total	116	100

FNAC was done in 55.17 percent of the patients. Among them, Fibroadenoma was the finding in

44.83 percent of the patients while benign proliferative lesion was the finding in 0.86 percent of the patients. Epidermal cyst, fat necrosis and lipoma were the findings in 0.86 percent of the patients each. Phyllodes Tumors were the finding in 2.59 percent of the patients. Fibroadenoma with fibrocystic changes was seen in 8.62 percent of the patients while fibrocystic disease was the finding in 6.9 percent of the patients. Galactocele was the finding in 2.59 percent of the patients. Simple cyst was the finding in 1.72 percent of the patients (Table-4).

Onhistopathologic examination, Fibroadenoma was the diagnosis in 42.24 percent of the patients while Fibroadenosis was the diagnosis in 0.86 percent of the patients. Benign phyllodes tumor, Duct ectasia, epidermal cyst and Fat necrosis were the diagnosis in 2.59 percent, 1.72 percent, 0.86 percent and 1.72 percent of the patients respectively. Granulomatous mastitis, Intraductal papilloma with duct ectasia, mammary hamartoma and TB breast abscess were the diagnosis in 1.72 percent, 0.86 percent, 1.72 percent and 1.72 percent of the patients respectively.

**Table-5: Age distribution and benign breast lesions**

Histopathologic diagnosis	Age group (years)				
	≤ 20	21 to 30	31 to 40	41 to 50	More than 50
Antibioma	0	0	0	1 (100 %)	0
Benign phyllodes tumor	0	0	0	2 (66.67%)	1 (33.33%)
Duct ectasia	0	1 (25%)	2 (50%)	1 (25%)	0
Epidermal cyst	0	0	1 (100%)	0	0
Fat necrosis	0	0	2 (100%)	0	0
Fibroadenoma	16 (31.4%)	16 (31.4%)	15 (29.4%)	2 (3.9%)	2 (3.9%)
Fibroadenoma with fibrocystic changes	1 (16.67%)	0	2(33.33%)	2 (33.33%)	1 (16.67%)
Fibroadenosis	0	0	1 (100%)	0	0
Granulomatous mastitis	0	1 (50%)	1 (50%)	0	0
Intraductal papilloma with duct ectasia	0	0	0	0	1 (100%)
Mammary hamartoma	0	0	2 (100%)	0	0
TB breast abscess	0	0	1 (50%)	0	1 (50%)
Accessory breast	0	0	0	1 (100%)	0
Breast abscess	4	3	2	4	0
Fibrocystic diseases	0	5 (25%)	11 (55%)	3 (15%)	1 (5%)
Galactocele	0	1 (33.33%)	2 (66.67%)	0	0
Mastitis	0	0	2 (100%)	0	0

Out of 51 patients with Fibroadenoma, 31.4 percent of the patients each belonged to the age group of  $\leq 20$  years and 21 to 30 years respectively. 29.4 percent of the patients belonged to the age group of 31 to 40 years (Table-5).

### Discussion

Women presenting with breast complaints, especially lumps are a common finding and a cause of significant anxiety in view of extensive public awareness. It therefore becomes imperative for a surgeon to distinguish benign from malignant conditions and its prevalence.

Globally, BBDs account for approximately 90% of all clinical case presentations related to the breast. Fibroadenoma, fibrocystic change and breast abscesses account for a good majority. A thorough review of pathological findings in BBDs can provide insight into the exact nature of the lesion and will also serve as a means for timely decision making for the patient and the clinician [3].

Hence; the present study was conducted for assessing the pattern and frequency of benign breast diseases among the female patients attending surgical OPD in a tertiary care hospital. A total of 116 patients were analysed.

*Age:* In the present study, 35.34 percent and 25.86 percent of the patients belonged to the age group of 31 to 40 years and 21 to 30 years respectively. Mean age of the patients was 32.78 years. Our results were in concordance with the results obtained by previous authors who also reported similar findings. In a study conducted by Pai S et al, mmajority of BBDs were seen in the 3rd decade [60 out of 153 (39.2%)] and the 4th decade [42 out of 153 (27.5%)] [3].

In the studies conducted by various authors it was noted that benign breast lesions were more common in the 3rd decade which was also seen in the current study (39.2%). Second common age group in the current study was 4th decade similar to Ullah et al and Maychet et al [4-5]

*Chief Complaint:* In the present study, lump was the chief complaint in 85.34 percent of the patients while lump along with pain in 28.45

percent of the patients. Nipple discharge was seen in 16.38 percent of the patients. Pain was seen in 12.93 percent of the patients. Our results were in concordance with the results obtained by previous authors who also reported similar findings. In a study conducted by Singh SB et al, most of the patients presented with complaints of lump in the breast 44 cases (73.33%), followed by lump and pain in 10 (16.7%) cases and lump, pain, and fever in the other 6 (10%) cases [6].

Mima et al reported that the incidence of nipple discharge was 9% of all the breast complaints in his study. In the study of Foxcroft et al. they had found that 87.4% of the women who attended the Wesley Breast Clinic had complaints of breast lump [7-8].

*Radiological Findings:* Fibroadenoma was seen in 40.52 percent of the patients while Fibroadenoma was with fibrocystic changes were seen in 12.07 percent of the patients. Fibrocystic diseases were seen in 18.1 percent of the patients. Mastitis was seen in 5.17 percent of the patients while Galactocele was seen in 2.59 percent of the patients. Lymphadenitis and Intraductal papilloma were seen in 0.86 percent of the patients each. Breast abscess and duct ectasia were seen in 12.07 percent and 3.45 percent of the patients. Phyllodes tumor and epidermal cyst were seen in 1.72 percent and 0.86 percent of the patients respectively. 0.86 percent of the patients showed presence of bilateral Fibroadenoma. Accessory breasts were seen in 0.86 percent of the patients.

*FNAC findings:* FNAC was done in 55.17 percent of the patients. Among them, Fibroadenoma was the finding in 27.59 percent of the patients while benign proliferative lesion was the finding in 0.86 percent of the patients. Epidermal cyst, fat necrosis, lipoma and reactive lymphadenitis were the findings in 0.86 percent of the patients each. Fibroadenoma with fibrocystic changes was seen in 8.62 percent of the patients while fibrocystic disease was the finding in 6.9 percent of the patients. Galactocele was the finding in 2.59 percent of the patients. Simple cyst was the finding in 1.72 percent of the patients.

**Histopathology:** In the present study, on histopathologic examination, Fibroadenoma was the diagnosis in 40.52 percent of the patients while Fibroadenoma with fibrocystic changes, Fibroadenosis and Giant Fibroadenoma was the diagnosis in 0.86 percent of the patients each. Benign phyllodes tumor, Duct ectasia, epidermal cyst and Fat necrosis were the diagnosis in 2.59 percent, 1.72 percent, 0.86 percent and 1.72 percent of the patients respectively.

Granulomatous mastitis, Intraductal papilloma with duct ectasia, mammary hamartoma and TB breast abscess were the diagnosis in 1.72 percent, 0.86 percent, 1.72 percent and 1.72 percent of the patients respectively. Our results were in concordance with the results obtained by previous authors who also reported similar findings. In a study conducted by Pai S et al, the profile of cases examined was as follows: fibroadenomas [99 cases (64.7%)], fibrocystic disease [25 cases (16.3%)] and benign phyllodes tumour [8 cases (5.2%)]. Less commonly encountered were inflammatory breast diseases like acute mastitis [5 cases (3.3%)], chronic mastitis [4 cases (2.6%)], Granulomatous mastitis [5 cases (3.3%)] and Fat necrosis [1 case (0.7%)]. They also came across, 4 cases of lactational adenoma (2.6%)[3].

In the present study, inflammatory breast diseases were seen in 5.16 percent of the patients. Among them, Fat necrosis, Granulomatous mastitis and TB breast abscess were seen in 1.72 percent of the patients each. In a study conducted by Pai S et al, 9.8% of inflammatory breast diseases were seen [3].

**Age Distribution and Benign Breast Lesions:** In the present study, out of 51 patients with Fibroadenoma, 31.4 percent of the patients each belonged to the age group of  $\leq 20$  years and 21 to 30 years respectively. 29.4 percent of the patients belonged to the age group of 31 to 40 years. Siddiqui reported in their study the incidence of fibroadenomas as 17% as it was based on histopathological analysis. He had studied 3279 cases of benign breast disease at a tertiary care hospital. Akhator reported the incidence of fibroadenomas to be around 68.0% in their study. It was a 5-year retrospective review of all histologically proven benign breast lesions. Irabor reported an incidence of fibroadenomas to be 64.3% in their study which was a retrospective

data of all breast biopsies done over a period of 8 years and 3 months [9].

In the present study, Granulomatous mastitis was seen in 1.72 percent of the patients. The study conducted by Pai S had 5 cases of granulomatous mastitis with an incidence of 3.3% which is comparable to the study by Siddiqui et al [3, 10]. In the present study, Phyllodes tumors were present in 2.59 percent of the patients. Phyllodes tumors are a rare entity in the breast. They make up  $< 1\%$  of all breast tumors. In the study conducted by Pai S et al, they comprised 5.2% of benign breast lesions comparable to the study done by Naveen et al where it was 4% [3, 11].

In the present study, fibrocystic changes were encountered in 1 patient (0.86 percent). This was quite low in comparison to previous studies. Many authors like Adesunkanmi and Agbakwuru et al. found in their study that the incidence of the fibrocystic changes ranged from 29.5% to 42.2% for the benign breast lumps [12]. In the studies conducted by Pawan tiwari (2013) and Mima MBS et al (2013), the incidence of duct ectasia was 4.4% and 6% respectively [13].

Kapoor B et al, in their study reported that the highest number of cases of benign breast disease were of fibroadenoma (53.3%), followed by fibrocystic disease (23.3%) and duct ectasia (10%) [14]. Parappurath M et al, in their study reported presence of Fibroadenoma, fibrocystic disease and inflammatory lesion in 31.1 percent, 10.6 percent and 7.8 percent of the patients respectively [15].

Benign breast disease is a group of condition which ranges from normal to aberrations to disease. Patients of benign breast diseases usually present with the following complaints - breast lump, breast pain, or nipple discharge. Patients with discrete breast lump should undergo a triple assessment to reach an early diagnosis.

Knowledge of general features of individual breast diseases such as incidence, age distribution, symptoms, and palpatory findings is important to make accurate

diagnosis. The literature available suggests that benign conditions of breast are significantly more common than the malignant conditions in developing countries. There is usually a delay in the diagnosis and management of benign as well as malignant lesions in developing countries because of illiteracy, social taboo, and unawareness. Triple assessment of the breast which is a combination of clinical examination, breast imaging, and aspiration cytology has been shown to be accurate in preoperatively diagnosing breast lumps.

In a study conducted by Hatim KS et al, authors assessed the patterns and prevalence of benign breast disease in Western India. Out of 210 benign lesions, 201 (95.7%) were found in females and 9 (4.3%) were found in males. Commonest benign breast lesion was fibroadenoma (77.62%), followed by fibrocystic disease (4.3%) and gynaecomastia (4.3%). Fibroadenoma is the most common benign breast disease. Most of the patients presented with painless lump in the breast in upper outer quadrant of the breast. Histopathology plays an important role in the diagnosis of benign breast diseases [16].

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## Conclusion

Breast lesions are a cause of concern as a few of them carry the potential risk of turning malignant. Timely excision, evaluation and confirmation of histological findings help us to differentiate benign from malignant lesions.

Since majority of benign lesions do not carry the risk of turning malignant, a timely diagnosis will prove invaluable in averting a needless radical mastectomy. It is therefore, imperative for pathologists, radiologists, Surgeons and oncologists to identify the small minority of benign cases that do carry the risk of evolving into a full-fledged cancer, so that the appropriate treatment modality may be implemented at the earliest. Though fine needle aspiration cytology prior to surgery provides a reliable picture as to the nature of the lesion, histopathology ultimately remains the gold standard for the diagnosis of benign breast lesions. Other diagnostic tools like immunohistochemistry are certainly helpful but may not be cost effective.

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