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### RESEARCH ARTICLE

#### STUDY OF CLINICAL PRESENTATION, IMAGING, PATHOLOGICAL PROFILE AND MANAGEMENT OF BENIGN BREAST CONDITION IN TERTIARY HEALTH CARE CENTRE

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#### Abstract

**Background:** Benign breast diseases (BBDs) are not life threatening; clinicians require a thorough knowledge so that clear explanations can be given to patients and appropriate treatment can be instituted, and unnecessary long term follow up can be avoided. Present study was aimed to study clinical presentation, imaging, pathological profile and management of benign breast condition in a tertiary health care center.

**Material and Methods:** Present study was descriptive, cross-sectional study, conducted in females, age >10 years with benign breast diseases.

**Results:** Among 215 cases, majority were from the age group of 21-30 years (52.56%), followed by in 31-40 years (21.39%). The mean age among the distribution of cases was 28.16  $\pm$  10.12 years. 173 (80.47%) were in premenopausal status, followed by 42 (19.53%) of postmenopausal status. All cases were presented with breast lump (100%), along with lump pain was seen in 45 (20.93%) cases and nipple discharge in 37(17.21%) cases. Majority had unilateral lump (84.1%) ,in right upper outer quadrant (23.08%), followed by left upper outer quadrant (21.53%). The maximum number of cases had size of 2-5 cm (53.02%), followed by <2 cm (32.09%) and only 14.89% cases had size >5 cm. Out of 215 cases of benign breast diseases, benign neoplasms (Fibroadenoma, Benign phylloides, Intraductal Papilloma) comprising of 68% of cases and benign lesions (Inflammatory, Fibroadenosis, Fibrocystic diseases, Galactocele) were 32% of cases. Fibroadenoma was the commonest of all benign neoplasms (63.26%) followed by benign phylloides (3.26%). 179 (83.26%) were lumpectomies, 21 (9.77%) was Incisional biopsies and 11 (5.58%) were simple mastectomies.

**Conclusion:** Fibroadenoma is the most common benign breast disease affecting women in their reproductive age group. Triple assessment provided quick diagnosis and it alleviated unnecessary anxiety from patients about breast cancer.

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**Introduction:-**

Benign breast diseases (BBDs) are a group of disorder which comprises of non-malignant condition. It includes cyclical mastalgia, physiological swelling, palpable lumps, nipple discharge, infection or inflammation. BBD present with the wide range of symptoms like pain, nipple discharge and lump. They are the most common cause of breast problems in females and they are more frequent than malignant ones. They can occur any time during the lifespan of females.<sup>1</sup> BBD are at least 10 times more common than breast cancer in developed countries. Up to 30 percent of the female who suffer from BBD will require treatment at some time in their lives.<sup>2</sup>

BBD are usually hormone induced and therefore usually seen in the reproductive period of life with dramatic fall of incidence after menopause.<sup>3</sup> Until recently benign disorders were given very less importance and the terminology is also confusing sometimes, inadequate classification and poor correlation between clinical, radiological and pathological features.<sup>4</sup>

Although BBDs is not life threatening, clinicians require a thorough knowledge so that clear explanations can be given to patients and appropriate treatment can be instituted, and unnecessary long term follow up can be avoided.<sup>5</sup> Various studies had shown that there is a relationship between BBDs and breast cancer. Risk of cancer varies according to the histological grading of the BBDs.<sup>6,7</sup> Present study was aimed to study clinical presentation, imaging, pathological profile and management of benign breast condition in a tertiary health care center.

**Material And Methods:-**

Present study was descriptive, cross-sectional study, conducted in department of Surgery, at XXX medical college & hospital, XXX, India. Study duration was of 18 months (January 2021 to June 2022). Study approval was obtained from institutional ethical committee.

**Inclusion criteria**

All females, age >10 years with benign breast diseases, willing to participate in present study

**Exclusion criteria**

1. Not willing to participate in study
2. Patients with suspected or proven carcinoma lesions
3. Patients with Benign breast diseases operated earlier
4. Pregnant and lactating mothers

Study was explained to patients in local language & written consent was taken for participation & study. Detailed history of patients was recorded that included age, marital status, parity, age of menarche, age at first pregnancy and age at menopause. Family history of breast diseases especially breast cancer, history of contraception use was recorded. Detailed examination of lump and axilla was made with especial attention to any clinical signs of malignancy. Ultrasonography or mammograms was done when required necessary.

Fine needle aspiration cytology (FNAC) was performed in patients with lumps to confirm the diagnosis. Core biopsy and / incisional or excision biopsy was done in patients with inconclusive FNAC report. All the specimens collected were fixed in buffered neutral formalin for a period of 12-24 hrs. For light microscopy one slide from each block was routinely stained with H&E to arrive at a diagnosis. Final histological diagnosis was made using standard breast pathology book World health organisation (WHO) classification of breast tumors.

The data was coded and entered into Microsoft Excel Worksheet. The categorical data was expressed as rates, ratios, and proportions and the continuous data was expressed as mean  $\pm$  standard deviation. The comparison of categorical data was performed using Chi-square test and Fisher's exact test and the comparison of continuous data was done using independent sample t-test.  $P \leq 0.05$  at 95% confidence interval was considered as statistically significant.

**Results:-**

Among 215 cases, majority were from the age group of 21-30 years (52.56%), followed by in 31-40 years (21.39%). The mean age among the distribution of cases was  $28.16 \pm 10.12$  years. 173 (80.47%) were in premenopausal status, followed by 42 (19.53%) of postmenopausal status.

All cases were presented with breast lump (100%), along with lump pain was seen in 45 (20.93%) cases and nipple discharge in 37(17.21%) cases. Other symptoms including inflammation like erythema or edema over breast and diffuse nodularity of the breast along with pain or nipple discharge seen in 11% cases. The maximum number had unilateral lump in breast (90.70%), followed by bilateral lump (9.30%).

**Table 1:-** General characteristics.

Characteristics	No. of patients	Percentage
Age groups (in years)		
<20	16	07.44
21-30	113	52.56
31-40	46	21.39
41-50	21	9.76
51-60	10	04.65
>60	09	03.72
Mean age (mean±SD)	28.16 ±10.12	
Menstrual status		
Premenopausal	173	80.47
Postmenopausal	42	19.53
Symptom		
Lump	215	100.00
Lump + Nipple discharge	37	17.21
Lump + Pain	45	20.93
Others	23	10.69
Laterality		
Unilateral	195	90.70
Bilateral	20	09.30

Out of 195 cases, majority had unilateral lump (84.1%) in breast followed by bilateral lump (15.9%). The maximum number of patients had affected right upper outer quadrant (23.08%), followed by left upper outer quadrant (21.53%). In cases where more than one quadrant involved, predominantly involved quadrant was taken into consideration.

**Table 2:-** Distribution according to site (Quadrant) involved in benign breast diseases:

Site (Quadrant)	No of Cases	Percentage
Right upper inner	41	21.03
Right upper outer	45	23.08
Right lower inner	02	01.02
Right lower outer	02	01.02
Left upper inner	32	16.41
Left upper outer	42	21.53
Left lower inner	00	00.00
Left lower outer	00	00.00
Central	31	15.90

(\* 20 Bilateral patients were excluded)

The maximum number of cases had size of 2-5 cm (53.02%), followed by <2 cm (32.09%) and only 14.89% cases had size >5 cm.

**Table 3:-** Distribution according to size of the benign breast diseases:

Size of tumor (cm)	No of Cases	Percentage
<2	69	32.09
2-5	114	53.02
>5	32	14.89

Out of 215 cases of benign breast diseases, benign neoplasms (Fibroadenoma, Benign phylloides, Intraductal Papilloma) comprising of 68% of cases and benign lesions (Inflammatory, Fibroadenosis, Fibrocystic diseases, Galactocele) were 32% of cases. Fibroadenoma was the commonest of all benign neoplasms (63.26%) followed by

benign phylloides (3.26%). The commonest non-neoplastic benign lesion was Inflammatory lesions (12.56%) followed by fibroadenosis (10.23%), fibrocystic disease (8.37%).

**Table 4:-** Distribution according to histopathology:

Diagnosis	No of Cases	Percentage
Fibroadenoma	136	63.26
Inflammatory	27	12.56
Fibroadenosis	22	10.23
Fibrocystic diseases	18	08.37
Benign phylloides	07	03.26
Intraductal Papilloma	03	01.39
Galactocele	02	00.93

Out of 215 cases of benign breast diseases, benign neoplasms, 195 (90.70%) were unilateral and 20 (9.30%) were bilateral. Fibroadenosis (12 out of 22 cases) shows maximum with bilaterality followed by fibrocystic disease.

**Table 5:-** Distribution of the benign breast diseases according to laterality:

Diagnosis	Laterality		Total
	Unilateral	Bilateral	
Fibroadenoma	133	03	136
Inflammatory	25	02	27
Fibroadenosis	10	12	22
Fibrocystic diseases	15	03	18
Benign phylloides	07	00	07
Intraductal Papilloma	03	00	03
Galactocele	02	00	02
Total	195	20	215

Out of 215 specimens, 179 (83.26%) were lumpectomies, 21 (9.77%) was Incisional biopsies and 11 (5.58%) were simple mastectomies.

**Table 6:-** Distribution according to type of surgical procedure:

Surgical Procedure	No of Cases	Percentage
Lumpectomy	179	83.26
Incision and Drainage	21	09.77
Simple Mastectomy	11	05.58
Other	04	01.86

## Discussion:-

Benign Breast lesions consist of heterogenous condition which in the majority of women go undetected and are identified incidentally during screening mammography or in the surgical specimens for cancer. Most women who present at the breast clinic have benign breast condition which range from non-specific breast pain to discrete lumps.

Breast neoplasm has become increasingly important not only because of its large variety of histomorphological patterns but more because they have gradually increased the mortality rate in females. The incidence, clinical appearance and the behavior of the different types of breast tumors is extremely variable. Hence, one has to depend on the microscopic appearance of the tumor for accurate typing of the breast tumors.

The popular classification of BBDs is according to the Aberration of the Normal Development and Involution (ANDI). A new scoring system has been devised by Love S et al.<sup>8</sup> also called as Nashville classification. Clinically BBDs can be classified as (i) Physiological swelling and tenderness (ii) breast pain (iii) palpable lump (iv) nipple discharge (v) infection or inflammation.

In the present study, maximum number of cases were in the age group of 21-30 years (52.56%), followed by in 31-40 years (21.39%). Chalya et al.,<sup>9</sup> studied 346 female patients with benign breast diseases, majority of patients, 255 (73.7%) were younger than 30 years. This finding was similar to present study. Priya Bagale et al.,<sup>10</sup> in a prospective study of histopathologically and cytologically diagnosed breast lesion, out of which 384 were benign

breast diseases most cases belonged to younger age group (21-40 years). This was almost similar to the data from other studies by S. Yogalakshmi et al.,<sup>11</sup> and Brajesh Kumar et al.,<sup>12</sup> which showed approximately similar results of age group 21-30 years mostly affected.

In the present study, amongst these 215 cases, 173 (80.47 %) were in premenopausal status, followed by 42 (19.53%) of postmenopausal status. Similar findings were seen in study by Chalya et al.,<sup>9</sup> majority of specimens were from female patients in premenopausal status 93.6%. This finding was in accordance to present study.

In the present study, all cases were presented with breast lump (100%), along with lump pain was seen in 45 (20.93%) cases and nipple discharge in 37(17.21%) cases. Similar findings were seen in study done by Chalya et al.,<sup>9</sup> where most common complaint was lump (67.6%).

The results comply well with a study carried out by Yogalakshmi et al.,<sup>10</sup> in which most common presenting symptom was a lump in the breast which was seen in 110 cases (92%) followed by discharge in the nipple which was seen in three patients and the remaining seven patients had both these symptoms.

In a study conducted by MimaMaychet et al.,<sup>13</sup> 87% of patient presented with the complaints of breast lump. In the study of Foncroft LM et al.,<sup>14</sup> they found that 87.4% of the women who attended the Wesley Breast Clinic had presented with breast lumps, while in the series of Ratana Chaikanont T.,<sup>15</sup> a breast lump was the presenting symptom in 72.35% of the 331 benign breast patients.

In the present study, maximum number had unilateral lump in breast (90.70%), followed by bilateral lump (9.30%). The maximum number of patients had affected right upper outer quadrant (23.08%), followed by left upper outer quadrant (21.53%). Similar findings were seen in study by Chalya et al.,<sup>9</sup> where the majority of breast lumps were located on the outer upper quadrant, 169 (63.5%) followed by the inner lower quadrant, 35(13.2%), outer lower quadrant, 24(9.0%) and inner upper quadrant, 18(6.8%).

The similar findings were also reported in other studies like Kumar et al.,<sup>16</sup> & Abhijit et al.<sup>3</sup> where the right breast was frequently affected as in present study. This finding was at variance with Raju et al.<sup>7</sup> who found that the left breast was involved in the majority of cases. In various studies by Adesunkami AR<sup>17</sup> Kumar et al.,<sup>16</sup> & Abhijit et al.<sup>3</sup> breast lumps commonly involved the upper outer quadrant which was in agreement with findings by present study.

In the present study, maximum number of cases had size of 2-5 cm (53.02%), followed by <2 cm (32.09%) and only 14.89% cases had size >5 cm. Similar findings were seen in study by Chalya et al.,<sup>9</sup> where the breast lump size ranged from 0.5 to 18 cm with a median diameter of 6 cm. The majority of patients (73.9%) had breast lump of 6 cm diameter and below. This finding was in accordance to present study.

In the present study, benign neoplasms (Fibroadenoma, Benign phylloides, Intraductal Papilloma) comprising of 68% of cases and benign lesions (Inflammatory, Fibroadenosis, Fibrocystic diseases, Galactocele 32% of cases Fibroadenoma was the commonest of all benign neoplasms (63.26%) followed by benign phylloides (3.26%). The commonest non neoplastic benign lesion was Inflammatory lesions (12.56%) followed by fibroadenosis (10.23%), fibrocystic disease (8.37%).

The findings of present study were in accordance with study done by Chalya et al.,<sup>9</sup> and Pai et al.,<sup>18</sup> where the incidence of Fibroadenoma were 60% and 64.7% respectively.

In present study, among benign lesion, inflammatory comprising of 8.37% which was similar in study done Brajesh Kumar et al.,<sup>12</sup> and Pai et al.,<sup>18</sup> where incidence of inflammatory breast diseases 13% and 9.8% respectively.

Fibrocystic diseases in present study were comparable to other studies done by Yogalakshmi et al.,<sup>10</sup> (15%) and Pai et al.,<sup>18</sup> (16.3%). Benign phylloides was 3.26% in present which was comparable to little higher compared to other studies like Chalya et al.,<sup>9</sup> (1.4%) and Yogalakshmi et al.,<sup>10</sup> (1%).

The type of surgical procedure among patients shows maximum number of patients done under, 179 (83.26%) were lumpectomies, 21 (9.77%) was Incisional biopsies and 11 (5.58%) were simple mastectomies. Similar findings were seen in study by Chalya et al.,<sup>9</sup> where most patients, 295(85.2%) underwent surgical treatment of which lumpectomy was the most common surgical procedure performed.

Mammography was done selectively in only 11 patients, who had some risk factors and for diagnostic purpose in suspicious lesion. Mammography was done in two cases of duct ectasia to reach the diagnosis and in one case of atypical ductal hyperplasia and in two cases of focal nodularity and rest in suspicious cases of mastalgia with nodularity. The patient of atypical ductal hyperplasia on follow up developed carcinoma of breast.

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 helps us to differentiate benign from malignant lesions. There is need for more research into the picture of breast disease in the country, covering various demographic characteristics of the country's population for all regions and informing about its incidence rates and prevalence and also the breast cancer risk estimate for benign breast disease.

### **Conclusion:-**

The present study concludes that Fibroadenoma is the most common benign breast disease affecting women in their reproductive age group. 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 helps us to differentiate benign from malignant lesions. Triple assessment provided quick diagnosis and it alleviated unnecessary anxiety from patients about breast cancer

### **Conflict of Interest:**

None to declare.

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Nil.

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