

SPECTRUM OF BENIGN BREAST DISEASES IN A TERTIARY CARE HOSPITAL OF PUNJAB

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ABSTRACT**BACKGROUND**

Benign breast diseases (BBD) constitute a heterogeneous group of disorders including developmental abnormality, epithelial and stromal proliferation, inflammatory lesions and neoplasm. As compared to breast cancers, benign breast lesions are 10 times more common. Benign breast lesions deserve attention because of their high prevalence, their impact on women's life and due to cancerous potential of some histological types.

MATERIALS AND METHODS

120 cases were diagnosed as BBD after triple assessments like clinical examination, ultrasonography or mammography, FNAC or excisional biopsy. Patients with obvious malignancy were excluded from the study.

RESULTS

Out of 120 benign lesions, the commonest presentation was breast lump (60%) commonly involving left upper outer quadrant. Fibroadenoma accounted for 39.2%, fibroadenosis 31%, mastalgia 13.3%, breast abscess about 7.5% and gynaecomastia 7.5%. The other benign lesions observed were phyllodes, cysts, lipoma, galactocele, mastitis, duct ectasia and accessory breast. In case of fibroadenoma, accuracy of clinical diagnosis vs radiology and pathology was found to be 91% and 94% respectively, and 100% for galactocele and breast abscess.

CONCLUSION

BBDs are common in females and fibroadenoma is the commonest in all. Triple assessment provided a quick diagnosis and it alleviated unnecessary anxiety for the patients about breast cancer. The clinical diagnosis of the breast lump as confirmed by radiology and pathology was accurate in 91% and 94% of cases respectively.

KEYWORDS

Benign Breast Disease, Fibroadenoma, Triple Assessment, Fibrocystic Diseases, Punjab.

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BACKGROUND

Breast is a dynamic organ which continuously undergoes normal structural and physiological changes like pubertal, cyclical, pregnancy, lactational and menopausal. When these normal changes exceed their limit, they are known as benign breast disease. Benign breast diseases are traditionally considered less relevant diseases as compared to malignancy of breast.¹

Benign breast diseases constitute heterogeneous group of disorder including developmental abnormalities, epithelial and stromal proliferations, inflammatory lesions and neoplasms.² These include all non-malignant conditions like fibroadenoma, fibrocystic disease, mastalgia, mammary duct ectasia, sclerosing adenosis, lactational adenoma, benign phyllodes tumour, intraductal papilloma, fibrous disease, blunt duct adenosis, calcification, breast abscess, lactational mastitis, puerperal mastitis, granulomatous lobular mastitis,

fat necrosis, tuberculous mastitis, galactocele, gynaecomastia and lipoma.³

These patients generally present with symptoms of breast pain, lump in breast, nodularity, nipple discharge, nipple retraction, ulceration, eczema of nipple, swelling in the axilla, enlargement of breast, etc. Most common clinical presentation is a palpable breast lump followed by breast pain and nipple discharge.⁴

Benign breast disorders are usually hormone induced and therefore usually seen in the reproductive period of life with dramatic fall of incidence after menopause.⁵ As compared to breast cancers, benign breast lesions are 10 times more common.¹ Of all the diagnosed breast diseases, benign lesions account for 90%.⁶ Fibroadenoma is found to be the most common benign breast disease followed by fibrocystic disease followed by breast abscess and mastalgia.³

Breast mass is a common complaint along with pain. Such symptomatic masses have been traditionally assessed by clinical, cytological and radiologic modalities like mammography.⁷ Thus, up to 95% of such lesions could be diagnosed by the triple assessment. Although, the role of FNAC and Clinical examination has been unanimous,⁸ the role of USG instead of mammography has been emphasised recently,⁹ especially in the young female population.

There is evidence that woman who correctly practice breast self-examination monthly are more likely to detect a

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lump in early stage of development and early diagnosis has been reported to influence early treatment to yield a better survival rate.¹⁰

Aims

To study the clinical profile of benign breast diseases in relation to age, sex and clinical presentation; to correlate clinical, radiological and pathological findings in patients presenting with benign breast diseases.

MATERIALS AND METHODS

This is a descriptive study, Observational study which was conducted in the outpatients department of General Surgery in Satguru Partap Singh, Tertiary Care Hospital, Ludhiana, Punjab, from June 2015 to November 2016. A total of 120 patients were treated for falling under BBDs.

Inclusion Criteria

Which includes all patients with symptom of breast disease including breast pain, palpable breast lump, nodularity, nipple discharge, nipple retraction, ulceration, enlargement of breast and swelling in the axilla were included and all asymptomatic patients coming voluntarily for preventive health checkup.

Exclusion Criteria

Included all patients with an obvious malignant disease or those who had been treated for malignancy earlier.

Detailed history included age, sex and duration of complaints like lump in breast, pain, fever, nipple discharge or retraction. Detailed menstrual history included age at menarche, regularity of cycles and marital history was also noted. Relevant findings of general, systemic and local examination were recorded. After making an appropriate clinical diagnosis one or more of the special investigations like ultrasound, mammography, FNAC, excisional biopsy or a core-needle biopsy were carried out for the confirmation of the diagnosis. Cytological and histopathological examination was done. Surgically resected specimen included needle biopsy, excisional biopsy and lumpectomy and mastectomy specimen. Specimens not representing the lesion and malignant breast lesions were excluded from the study. Specimens were received in 10% formalin. Gross features of each specimen were noted and sections were processed by autoprocessor. Paraffin embedded sections were stained by Haematoxylin and Eosin stain. Special stain and immunohistochemistry were performed wherever required. Diagnosis was confirmed by FNAC and/or Histopathology and correlated with clinical and radiological findings wherever available.

Statistical Analysis

Data were described in terms of range; mean \pm standard deviation (\pm SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate.

Settings and Design

This is a descriptive study, observational study of patients with breast disease presenting to surgery department during

June 2015 to November 2016 at Satguru Pratap Singh tertiary care hospital, Ludhiana, Punjab.

RESULTS

A total of 120 patients who attended the surgery outpatients department for breast diseases were studied in the Department of General Surgery.

Age Distribution

The age distribution in our study is shown in Table 1, which reveals maximum numbers of patients were in reproductive age group of 21 - 40 years. The overall range is from 13 years to 69 years and mean age was 38.69. In females, the minimum age of patient was 15 years, whereas the maximum age was 69 and mean age was 38.03 years.

Age (Years) Range	No. of Patients	Percentage
11-20	6	5.0
21-30	28	23.3%
31-40	43	35.8
41-50	24	20%
51-60	11	9.2
> 60	8	6.7
Total	120	100.0

Table 1. Age Distribution

Sex Distribution

The sex distribution in our study is shown in Table 2, which reveals maximum number of patients were females with female: male ratio of 11: 1. Total number of female patients were 110 and male patients were 10.

Sex	No. of Patients	Percentage
Female	110	91.7
Male	10	8.3
Total	120	100.0

Table 2. Sex Distribution

Pattern of BBDs

The pattern of BBD in our study is shown in Table 3, which reveals that in our study most common BBD was seen in 39.16% (47/120) patients with fibroadenoma followed by FCD seen in about 30.8% (37/120). Out of 47 patients of fibroadenoma, 10% (12/120) patients were diagnosed with both fibroadenoma and fibrocystic disease. Mastalgia was seen in 13.3% (16/120). Out of 16 patients, 10 were having cyclical mastalgia (8.3%) and 6 (5%) were having noncyclical mastalgia. Breast abscess was present in 7.5% (9/120) cases. Out of 10 males in our study, 9 (7.5%) were diagnosed of gynaecomastia and 1 case of mastitis. Other benign diseases noted were breast cyst in 3.3% (4/120), lipoma in 2.5% (3/120), phyllodes tumour in 1.6% (2/120) and mastitis were noted in 1.6% (2/120) cases. Only one case (0.8%) of each galactocele, duct ectasia and accessory breast was noted.

Diagnosis	No. of Patients	Percentage
Fibroadenoma	47	39.16%
Fibrocystic disease	37	30.83%

Cyclical Mastalgia	10	8.3%
Non-cyclical mastalgia	6	5%
Breast Abscess	9	7.50%
Gynaecomastia	9	7.50%
Breast cyst	4	3.33%
Lipoma	3	2.50%
Mastitis	2	1.67%
Phyllodes tumour	2	1.67%
Accessory breast tissue	1	0.83%
Duct ectasia	1	0.83%
Galactocele	1	0.83%
Total	120	100.00%

Table 3. Pattern of various BBD

Distribution of Various BBDs according to Age Group

Distribution of various BBDs according to age group is shown in Table 4, which reveals that about 36.2% patients with fibroadenoma belonged to 4th decade of life followed by 27.7% from 3rd decade of life. FCD was found to be most common in 4th and 5th decade of life. About 37.8% of patients

with fibrocystic disease were from 4th decade and 32.4% from 5th decade. About 60% of cases of cyclical mastalgia were from 4th decade of life followed by 30% from 3rd decade of life. About 33.3% cases of noncyclical mastalgia were commonly seen in 4th decade. Breast abscess was commonly seen in patients (44.44%) of 4th decade followed by (33.33%) patients of 5th decade. Out of 10 cases of breast disease encountered in males, 9 cases (7.5%) were of gynaecomastia. About 33.33% were found in 6th decade, 22.22% in > 60 years and remaining were equally distributed in 2nd, 3rd, 4th and 5th decades.

Phyllodes tumours were seen in 2 patients from 3rd and 4th decade of life. Similarly, mastitis were seen in 2 patients from 3rd and 4th decade of life; 3 cases of lipoma were found in which 2 were in 4th decade and 1 in 6th decade. Breast cysts were present in 3.33% (4/120), 2 patients were > 60 yrs. and remaining 2 patients were from 4th and 5th decade of life. Galactocele, duct ectasia and accessory breast which accounted for 0.8% (1/120) of all BBDs were seen in 3rd, 6th and 4th decade of life respectively.

Final Diagnosis	Age (Years) Range												Total
	11-20		21-30		31-40		41-50		51-60		> 60		
	No.	% Age	No.	% Age	No.	% Age	No.	% Age	No.	% Age	No.	% Age	
Fibroadenoma	5	10.6%	13	27.7%	17	36.2%	6	12.8%	4	8.5%	2	4.3%	47
Fibrocystic Disease	0	0.0%	8	21.6%	14	37.8%	12	32.4%	2	5.4%	1	2.7%	37
Cyclical Mastalgia	0	0.0%	3	30.0%	6	60.0%	1	10.0%	0	0.0%	0	0.0%	10
Non-Cyclical Mastalgia	0	0.0%	0	0.0%	2	33.3%	1	16.7%	1	16.7%	2	33.3%	6
Breast Abscess	0	0.0%	2	22.2%	4	44.4%	3	33.3%	0	0.0%	0	0.0%	9
Gynaecomastia	1	11.1%	1	11.1%	1	11.1%	1	11.1%	3	33.3%	2	22.2%	9
Breast Cyst	0	0.0%	0	0.0%	0	0.0%	1	25.0%	1	25.0%	2	50.0%	4
Lipoma	0	0.0%	0	0.0%	1	33.3%	0	0.0%	2	66.7%	0	0.0%	3
Mastitis	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	2
Phyllodes Tumour	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	2
Accessory Breast Tissue	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1
Duct Ectasia	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	1
Galactocele	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1
Total	6	4.5%	30	22.7%	49	37.1%	25	18.9%	13	9.8%	9	6.8%	132

Table 4. Distribution of Various BBDs according to Age Group

Distribution of Mode of Presentation

Distribution of mode of presentation of patients in present study is shown in Table 5. The patients were broadly divided into groups depending on their symptoms or presentations such as a breast lump, breast pain, nodularity, enlargement and nipple discharge. Breast lump was the most frequent presentation in 60% (72/120) of patients followed by pain in 49.16% (59/120) and nodularity in 32.5% (39/120) patients. Discrete lump was present in 28.33% (34/120), pain alone in 11.67% (14/120) and nodularity in 10% (12/120). Presentation of lump in relation to pain was found in 23 cases (19.17%), lumpiness/nodularity in 11 cases (9.17%) and painful lump with nodularity in 4 cases. Out of 9 patients of gynaecomastia, 5 presented with enlargement of breast associated with pain, while 4 patients presented with solitary enlargement.

Lump and Pain	23	19.17%
Lump and Nodularity	11	9.17%
Nodularity and Pain	12	10.00%
Lump, Pain and Nodularity	4	3.33%
Enlargement	4	4.17%
Pain and Enlargement	5	3.33%
Pain and Discharge	1	0.83%

Table 5. Mode of Presentation

Symptoms	No. of Patients	Percentage
Lump	34	28.33%
Pain	14	11.67%
Nodularity	12	10.00%

Unilateral breast involvement was present in 99 cases (82.50%) and bilateral involvement in 21 cases (17.5%). LT breast involvement was more common in 56 cases (46.67%) and RT breast was involved in 43 (35.83%) cases shown in Table 6. Quadrant wise distribution of lump in BBD is shown in Table 7, which reveals that in present study lesion was most commonly present in upper outer quadrant 33 cases (27.5%) and in lower outer quadrant there were 18 cases (15%). Upper inner quadrant involvement was observed in 5 cases (4.17%) and lower inner quadrant in 6 cases (5%). Subareolar involvement was seen in 11 cases (9.17%) and in 3 cases (2.5%) it was diffuse involving all the quadrants.

Breast Side Involvement	No. of Patients	Percentage
Right Breast only	43	35.83%
Left Breast only	56	46.67%
Bilateral Breasts	21	17.50%

Table 6. Breast Side Involvement

Breast Quadrant Involvement	No. of Patients	Percentage
Upper outer quadrant	33	27.50%
Lower outer quadrant	18	15.00%
Upper Inner Quadrant	5	4.17%
Lower inner Quadrant	6	5.00%
Subareolar	11	9.17%
Diffuse	3	2.50%

Table 7. Breast Quadrant Involvement

Clinical and Radiological Correlation

Radiological examination (USG and Mammography) was done in 118 cases of benign breast disease in our study. Out of 44 clinically diagnosed fibroadenoma, only 40 came to be correct on radiology. Four remaining cases were later found as one cyst, one FCD and two phyllodes tumour. The accuracy of clinical diagnosis was calculated and came out to be 91%.

Similarly, in case of 28 clinically diagnosed FCD 22 were correctly diagnosed on radiology and remaining 6 cases later found as five fibroadenoma and one lipoma. The accuracy of clinical diagnosis came out to be 78.5%.

In case of breast abscess and gynaecomastia, clinical diagnosis was 100% accurate.

Clinical and Pathological Correlation

The diagnoses of the lumps were confirmed either cytologically or histologically or in both ways. Pathological examination (FNAC and/or HPE) was done in total 46 cases. In 19 cases only FNAC was done and HPE was performed in 13 cases. Combined FNAC and HPE was done in 14 cases. Surgical excision was done in 23 cases of fibroadenoma and all of them were sent for HPE; 35 cases were clinically suspected as fibroadenoma, out of which 33 had fibroadenoma on pathological examination. The accuracy of the clinical diagnosis of fibroadenoma was 94.28% (33 out of 35 cases), as 2 cases after pathological examination came out to be phyllodes tumour.

DISCUSSION

Fibroadenoma was the most common benign breast disease in our study. Our finding was in agreement with most of the available literature on benign breast diseases like Ihekwa et al¹¹ and Greenberg et al.¹² However, study conducted by Aisha Memon et al⁷ and Nadia Adnan Ghani et al¹³ were contrary to our study, in which fibroadenoma was found to be the second most common BBD in female patient. In our study, the fibrocystic disease was the second most common condition. This concurs with findings by Priya Bagale et al⁴ and Akshara Gupta et al,¹⁴ who found that fibroadenoma was the most frequently diagnosed BBD followed by FCD, while results observed by Aisha Memon et al,⁷ Nadia Adnan Ghani et al¹³ and Chaudhary et al¹⁵ were contrary to our study in which they found FCD to be the commonest BBD. In present study, Mastalgia were the third most common BBD which was

in accordance with Akshara Gupta et al¹⁴ and Abhishek Sharma et al.¹⁶ They also observed the same result however Shukla et al¹⁷ and later Khanna et al¹⁸ drew attention to the significant incidence of mastalgia. The latter estimated it to account for 70% of all BBDs. Krishnaswamy et al¹⁹ also found mastalgia to be a significant problem accounting for 56.9% of all BBDs. These studies were performed exclusively in urban population, which may account for higher incidence of mastalgia due to high awareness in general population. Fourth most common BBD in present study was Breast abscess, which concur with findings of Priya Bagale et al.⁴ It appears that the figures for breast abscess in this study are underestimated, because most patients with breast abscesses are treated in the primary and secondary centres and are not often referred to tertiary care hospitals such as ours. Similar to our observation, in study done by Olu-Eddo A et al²⁰ gynaecomastia was the most commonly encountered male breast disease.

In our study, the most prominent symptoms was painless lump which was in accordance with study performed by Selvakumaran S et al²¹ and Sagar et al.²² On the contrary, Krishnaswami et al¹⁹ and Shukla et al¹⁷ noted mastalgia as the most significant problem. In the current study, left upper outer quadrant was most commonly involved. According to literature as upper and outer quadrant contains bulk of mammary tissue, lumps (benign and malignant) are commonest in that position. Haque et al²³ and SP Iyer et al²⁴ in their study found similar results. In our study, the accuracy of clinical diagnosis with respect to radiological diagnosis in cases of fibroadenoma, FCD, breast abscess and gynaecomastia was 91%, 78.5%, 100% and 100% respectively.

Similarly, when accuracy of clinical diagnosis with respect to pathological diagnosis was calculated in cases of fibroadenoma it came out to be 94.2%.

CONCLUSION

BBDs are common in females and fibroadenoma is the commonest in all. Triple assessment provided a quick diagnosis and it alleviated unnecessary anxiety for the patients about breast cancer. The clinical diagnosis of the breast lump as confirmed by radiology and pathology was accurate in 91% and 94% of cases respectively.

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