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Research Article

A Study of Clinical Profile of Benign Breast Diseases Presenting at a Tertiary Care Centre in Central India

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Abstract: The objective of the work was to study the clinical profile of Benign Breast Diseases (BBD) and their correlation with ultrasonographic and histopathological findings at a tertiary care centre in Central India. The present study was conducted in the Department of Surgery, Radiodiagnosis and Pathology at G R Medical College and J A Group of hospitals, Gwalior (MP) from November 2012 to October 2013 on 80 female patients of BBDs attending surgical OPD. A detailed history-taking and clinical examination was done on all the patients. All patients, as and when indicated, underwent USG breast, FNAC and excisional biopsy of the lesion. Patients were followed up during and after treatment. Out of the 80 patients taken into study, the most common pathology was fibroadenoma (45%) followed by mastalgia (32.5%) & fibroadenosis (17.5%). The most commonly involved age group was 20-30 years (38.75%). The commonest mode of presentation was pain (32.5%) followed by breast lump (31.25%). FNAC was found to be the most sensitive and specific investigation for diagnosis of fibroadenoma and fibroadenosis, while a clinical diagnosis was found to be adequate in cases of simple mastalgia. Thus we conclude that fibroadenoma is the most common BBD presenting in females, particularly in 3rd decade of life. FNAC is the investigation of choice for most BBD patients which helps in diagnosis as well as to avoid unnecessary surgery in the patients who can be managed satisfactorily on conservative approach.
Keywords: Benign Breast Diseases (BBD), Pain, Breast lump, Fine-Needle Aspiration Cytology (FNAC)

INTRODUCTION

Breast is a dynamic organ undergoing physiological changes, i.e. development, cyclic changes, pregnancy, lactation and involution [1, 2] throughout the reproductive period of a woman. Significant morphological changes occur in breast right from the onset of puberty till menopause due to the action of hormones and growth factors leading to most of the breast pathologies [2].

Benign breast diseases (BBD) refer to a heterogeneous group of lesions that may present a wide range of symptoms [3].

Though BBD constitutes the majority of breast complaints, it is a neglected entity [4]. The vast majority of women presenting with breast symptoms have an underlying benign etiology [5]. Breast cancer has taken precedence over BBDs since it is more fearsome although number of females with BBDs is substantial [2].

Up to 30% of the women who suffer from BBDs will require treatment at some time in their lives [6]. An early diagnosis and treatment plan after the first consultation in these patients helps in alleviating unnecessary anxiety about breast cancer, as well as in giving a prompt treatment, a proper follow-up and awareness regarding the risk of breast cancer in BBD patients with an increased risk of malignancy.

The aim of this prospective study carried out in surgical OPD in a tertiary care centre in Central India was to study the clinical profile of benign breast diseases and their correlation with ultrasonographic and histological findings of the disease.

MATERIALS AND METHODS

The present study was a prospective study conducted in the Department of Surgery, Radiodiagnosis and Pathology at G R Medical College and J A Group of Hospitals, Gwalior (MP) from November 2012 to October 2013 on 80 female patients of 12 to 45 years age having benign breast diseases (as specified in ANDI classification) attending surgical OPD. A detailed

history about symptoms and their duration, menstrual patterns, marital status, pregnancy, lactation, OCP intake was taken from all the patients.

All patients with history of trauma to the breast, malignant breast lumps, breast abscesses, recent history of pregnancy and lactation (<6 months), history of OCP intake or who had underwent excisional biopsy before clinical evaluation were excluded from the study.

All patients, as and when indicated, underwent USG breast and FNAC of the lesion beforehand. Later, if so indicated, excisional biopsy was also performed and results noted. Patients were followed up throughout their treatment course and management options adopted were also noted.

The observations were tabulated to reach the conclusions of the study and they were compared with other contemporary studies.

RESULTS

In the present study, total 80 patients with BBDs who attended surgical OPD at G R Medical College and J A group of Hospitals, Gwalior were included.

Disease Distribution

Among these 80 patients, fibroadenoma was the most common pathology encountered in 36 patients (45%) followed by mastalgia in 26 patients (32.5%), fibroadenosis in 14 patients (17.5%), galactocoele in 3 patients (3.75%) and lipoma in 1 patient (1.25%).

Age Distribution

Among these 80 patients, 85% of all patients of benign breast disease fall in the reproductive age group of 15-40 years. Majority (38.75%) of them belong to age group of 20-30 years with average age being 22.38 years.

The mean age of patients with fibroadenoma was 23.69 years, majority (72.22%) being in the age group of <30 years.

Table 1: Incidence of different BBDs according to age groups

Diagnosis	Age Groups (in years)				Total
	<20	20-30	30-40	>40	
Fibroadenoma	12	14	8	2	36
Fibroadenosis	2	6	2	4	14
Mastalgia	4	8	8	6	26
Galactocoele	0	2	1	0	3
Lipoma	0	1	0	0	1
Total	18 (22.5%)	31 (38.75%)	19 (23.75%)	12 (15%)	80

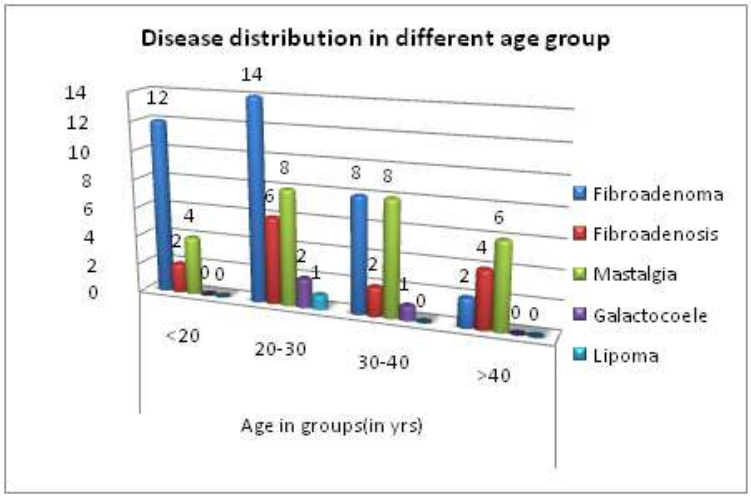

Fig 1: Graph showing distribution of different BBDs in different age groups

Mode of Presentation

The patients were broadly divided into 4 groups, depending on their symptoms or presentations, such as a breast lump, pain, nodularity and nipple discharge.

The commonest complaint was pain in breast which was present in 53 patients (66.25%), out of which 27 had associated complaints like breast lump, nodularity and nipple discharge while 26 patients (32.5%) had complaint of breast pain (mastalgia) only.

This pain was cyclical in 17 patients (65.38%) and noncyclical in 9 patients (34.61%).

Second most common complaint was breast lump which comprised 48 patients (60%), out of which 25 patients (31.25%) presented with breast lump only while remaining had associated complaints. 8 patients(10%) had breast nodularity with other associated complaints.

Table 2: Distribution of mode of presentation of patients

Mode of Presentation (n=80)	Number (%)
Pain (only)	26 (32.5%)
Lump (only)	25 (31.25%)
Pain + Lump	18 (22.5%)
Pain + Nodularity	4 (5%)
Pain + Discharge	2 (2.5%)
Lump + Nodularity	2 (2.5%)
Pain + Lump + Nodularity	2 (2.5%)
Pain + Lump + Discharge	1 (1.25%)

Duration of Symptoms

Most of the patients (n=32) (40%) had symptoms for 2-6 months, 15 patients (18.75%) for <2 months, 14 patients (17.5%) for 6-12 months while 19 patients had symptoms for >1 year.

Table 3: Duration of symptoms in different BBDs

Diagnosis	Duration of symptoms (months)			
	<2	2 to 6	6 to 12	> 12
Fibroadenoma	10	17	4	5
Fibroadenosis	2	4	4	4
Mastalgia	3	10	5	8
Galactocoele	0	1	1	1
Lipoma	0	0	0	1
Total	15 (18.75%)	32 (40%)	14 (17.5%)	19 (23.75%)

Size of Lump:

Out of the 46 patients in the study presenting with a breast lump, 35 (76.09%) were having size 2-5 cms, 4 (8.69%) of >5 cms and 7 (15.2%) of <2 cms.

Table 4: Table showing size of lump in patients with BBD's

Size of lump (in cm)	<2 cm	2 to 5 cm	>5 cm
Number of patients	7	35	4
Percentage	15.2%	76.08%	8.69%

Management Adopted

Out of 80 patients, 45 (56.25%) patients were treated conservatively while rest 35 underwent surgery. Out of the 36 patients of fibroadenoma, 29 (80.55%) were treated by surgery and remaining 7 patients were treated conservatively.

Table 5: Different management options used for different BBDs

Disease	Conservative	Surgery	Total
Fibroadenoma	7 (19.44%)	29 (80.55%)	36
Fibroadenosis	12 (85.71%)	2 (14.28%)	14
Mastalgia	26 (100%)	0 (0%)	26
Galactocoele	0 (0%)	3 (100%)	3
Lipoma	0 (0%)	1 (100%)	1
Total	45 (56.25%)	35 (43.75%)	80

All the fibroadenosis patients (12 patients) on FNAC were treated conservatively. 2 patients diagnosed as fibroadenoma on FNAC were operated, but later found to be fibroadenosis on histopathological examination.

All patients of mastalgia (26 patients) were reassured and treated conservatively while all the 3 patients of galactocoele and 1 patient of lipoma underwent surgery.

Correlation of Diagnosis by Clinical, USG, Cytological and Histopathological Examination

Table 6: Outcome of various diagnostic modalities in the diagnosis of BBDs

	Clinical	USG	FNAC	HPE	Final diagnosis
Fibroadenoma	36	40	38	29	36
Fibroadenosis	15	0	12	2	14
Mastalgia	26	-	-	-	26
Galactocoele	3	3	3	-	3
Lipoma	0	0	1	1	1
Normal finding	0	11	0	0	0
Not done	0	26	26	48	0
Total Patients	80	80	80	80	80

The above table shows comparison of the outcome of various diagnostic modalities for the diagnosis of BBDs. All the modalities (clinical examination, USG, FNAC and HPE) were compared with the final diagnosis. Histopathology was taken as final diagnostic test for fibroadenoma (except where excision was not done) and lipoma while FNAC in cases of fibroadenosis, galactocoele and conservatively treated fibroadenomas. In patients of mastalgia, clinical diagnosis was taken as final.

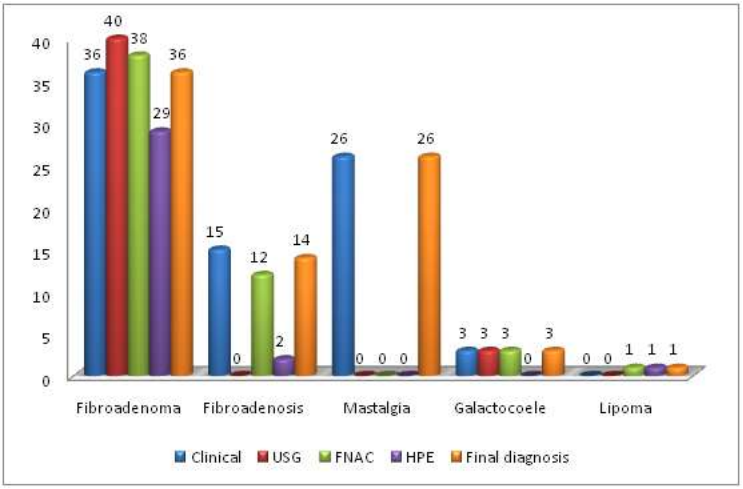

Fig. 2: Accuracy of different diagnostic modalities in diagnosis of BBDs

DISCUSSION

Distribution of variety of Breast Disorders

Fibroadenoma accounted for 45% of the total patients studied. Similar findings were reported by Umanah *et al.* [7] (54.8%), Naveen *et al.* [8] (52%), Greenberg *et al.* [9] (50%) and Malik *et al.* [10] (49%). In all these studies, fibroadenoma was reported to be most common BBD which is also consistent with our results.

Age Incidence

The most commonly affected age group by BBDs was 20-30 years (38.75%) in our study which was consistent with studies done by Oluwale *et al.* [11] and Onuka *et al.* [12] in which the peak age of incidence 20-29 years.

The mean age of patients with fibroadenoma was 23.69 years, majority (72.22%) being in the age group of <30 years.

Mode and Duration of Presentation

Breast lump was the commonest presenting symptom in studies by Sangma *et al.* [13] (87%). Krishnaswamy [14] reported pain as the major complain (56.9%). The most common presenting symptom in our study was pain in breast (66.25%).

In present study, cyclical and non cyclical mastalgia were present in 65.38% and 34.61% of patients respectively. According to study by B.V. Sreedevi [15], cyclical mastalgia patients were present

in 65% and non-cyclical mastalgia in 18%. Khanna AK *et al*. [16] reported cyclical mastalgia (61.5%) to be more common than non-cyclical mastalgia (38.5%).

There were 3 patients (3.75%) of nipple discharge in this study. While study conducted by Krishnaswamy [14] reported 6.8% and Shirish Chandanwale *et al*. [17] reported 5% patients with nipple discharge in their study.

53.75% patients presented with lumps of <12 months duration. Stidies of Jitendra Yede *et al*. [18] reported similar findings.

Size of Lumps

Majority of lumps (76.08 %) in the present study were sized 2 to 5 cms while Krishnaswamy [15] showed majority (55.6%) of lumps sized <2 cms and 44.3% sized 2-5 cm.

Correlation between Various Diagnostic Modalities for the Diagnosis of BBDs

According to our study, FNAC had highest sensitivity and specificity for diagnosis of fibroadenoma, fibroadenosis and lipoma. Following table shows the comparison and accuracy of different diagnostic modalities in diagnosis of BBDs:

Table 7: Comparison of various diagnostic modalities for diagnosis of BBDs

Diagnosis	Parameter	Clinical	USG	FNAC
Fibroadenoma	Sensitivity	89.47%	91.67%	100%
	Specificity	87.50%	61.11%	88.89%
	PPV	94.44%	82.50%	94.74%
	NPV	77.78%	78.57%	100%
Fibroadenosis	Sensitivity	78.57%	0.00%	87.71%
	Specificity	90.00%	100.00%	100%
	PPV	73.33%	-	100%
	NPV	92.31%	74.07%	95.24%
Mastalgia	Sensitivity	100%	-	-
	Specificity	-	-	-
	PPV	100%	-	-
	NPV	-	-	-
Galactocoele	Sensitivity	100%	100%	100%
	Specificity	100%	100%	100%
	PPV	100%	100%	100%
	NPV	100%	100%	100%
Lipoma	Sensitivity	0%	0%	100%
	Specificity	100%	100%	100%
	PPV	-	-	100%
	NPV	98.75%	98.75%	100%

Management Strategy Adopted

In this study out of 80 patients of BBDs, 45 patients (43.75%) were treated conservatively. Out of which maximum 26 patients (100%) were having mastalgia, 7 patients (19.4%) were having fibroadenoma and12 patients (85.71%) were having fibroadenosis.

According to study by Larsen & Faurschou [19], fibroadenomas in adolescents can safely be treated conservatively. However for adult women, a benign triple test is a prerequisite for conservative treatment.

Houssami *et al*. [20] accepted that conservative approach is safe and acceptable, provides the result of an adequate triple test is both negative for cancer and consistent with a fibroadenoma.

Out of 80 patients, 35 patients (43.75%) underwent surgical intervention. Out of 35 patients, 29 patients were of fibroadenoma (80.55%), 2 patients (14.28%) were of fibroadenosis, 3 were of galactocoele and 1 was of lipoma.

CONCLUSION

Thus we conclude from this study that the commonest benign breast lesion encountered in clinical practice is fibroadenoma (45%), followed by mastalgia (32.5%) and fibroadenosis (17.5%). The mean age of presentation of fibroadenoma was 23.69 yrs, while fibroadenosis was 28.42 yrs. Fibroadenoma most commonly presented in 2nd and 3rd decade while fibroadenosis presented a decade later. The commonest mode of presentation in patients with BBDs was mastalgia (66.25%) followed by lump (60%) in breast. Diffuse nodularity (10%) and nipple discharge (3.75%) were other symptoms that were seen. Majority of the lumps had a size of 2-5 cms (76%).

FNAC has highest sensitivity and specificity in the diagnosis of BBDs after histopathology. It also helps in the conservative management of small lumps, thus avoiding unnecessary surgical intervention. Clinical diagnosis carries significant role in diagnosis of BBDs while USG has a limited role. Majority of the patients with fibroadenoma are treated surgically while in patients with mastalgia and fibroadenosis, conservative approach is preferred.

But since our study is underpowered (sample size is small), further studies with large sample size have to be conducted for better understanding of the nature and course of BBDs and their proper management.

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