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Original Research Article

Clinical, pathological and radiological correlative study of benign breast diseases in a tertiary care hospital

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ABSTRACT

Background: Study of pattern of benign breast disease is a challenge due to variants in occurrence and presentation in different age groups and different geographical areas. The objective was to study the pattern of benign breast diseases and its clinical, pathological and radiological correlation.
Methods: This is a prospective study of females with benign breast diseases presenting to surgery department. This work was done for studying the age distribution, to evaluate the different types of benign diseases of the breast, their mode of clinical presentation, pathology, to evaluate the accuracy of different modes of triple assessment and various modes of management for different types of Benign Breast Diseases. Patients with obvious malignancy and males were excluded from the study.
Results: A total of 200 females were included in the study. Fibroadenoma (55%) was the commonest diseases with presenting mostly at 20-24years of age. Clinical examination had accuracy of 88%, USG had accuracy of 77.3%, FNAC had 93% and mammography had 83.33% accuracy foe diagnosing benign breast diseases.
Conclusions: Benign breast diseases are common problems of 2nd and 3rd decade in females and raises considerable fear of malignancy. The patients of BBDs generally present with one or more of these complaints-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 diseases, Fibroadenoma, Mammography, FNAC, USG

INTRODUCTION

Benign breast diseases (BBDs) has always been neglected, compared to breast cancer even the they account for 90% of the clinical presentations of breast diseases.[1,2] Up to 30% of the women who suffer from BBDs will require treatment at some time in their lives. It is relatively common in younger population and the incidence rises during the second decade of life and peaks in the fourth and fifth decades. In contrast, the malignant diseases are more common after menopause.[3-8] The popular classification of ANDI (Aberrations of Normal Development and Involution) is not of much help in clinical diagnosis because it does not distinguish between the normal physiological changes from the pathological ones.[9] Nashville classification given by Love S et al is more satisfying which divides BBDs pathologically into: Non-proliferative lesions, Proliferative lesions without atypia, and Proliferative lesions with atypia. Triple assessment by clinical examination, radiological imaging and pathological assessment by core or open biopsy has been a standard approach in the evaluation of breast lumps.[10,11] BBD is a very common but complex topic and require an integrated approach involving not only surgeons but also radiologists, pathologists, oncologists.

The aim was to study the spectrum of benign breast diseases (BBD) among the patients admitted to SCB medical college and hospital in terms of their types and modes, relationship between various BBD with age, OC pill use and lactation, correlation between pre-op FNAC, USG, MRI or mammography and post-op HP study of excised specimen and to highlight different modalities of management of benign breast diseases based on the above findings.

METHODS

This prospective study was conducted in the Dept. of General Surgery of S.C.B. Medical College, Cuttack. All patients of benign breast diseases irrespective of age admitted to Dept. of General Surgery were selected for the study from August 2016 To July 2018.

Inclusion criteria

Female patients with any benign disorder or disease of the breast such as breast lump, breast pain and nipple discharge were included.

Exclusion criteria

Women with an obvious malignant disease or those who had been treated for malignancy earlier and patients who did not give consent for participation after being thoroughly informed about the study. Total 200 patients were included in the study. Detailed history was taken and a thorough physical examination of the patients was done as per a proforma. A thorough history was taken. Particular importance was given to its presentation, whether taking OC pills or not, and lactational problems. After making clinical diagnosis, a preoperative pathological investigation (FNAC), core needle biopsy (Trucut biopsy) radiological investigation (USG or MRI for patients aged ≤40 years and mammography for patients aged >40 years) was done to plan out the required surgical procedure. Post-operative HPE study was done to correlate with the pre-op pathological and radiological findings.

RESULTS

Table 1 shows that the commonest age group is 20-24 years (32% cases), second most common age group being 15-19 (28% cases). Only 9% cases are above 40 years of age.

Table 2 shows that fibroadenoma (55% cases) was the most common benign breast disease, followed by mastalgia with nodularity (18% cases) and breast abscess (16%) cases) in this study.

Table 3 shows that 36 out of 50 cases of fibroadenoma were detected during 0-6 months of lactation. All cases of breast abscess were present in 0-6 months of lactation. Phylloides tumor was detected after 1 year of lactation.

Table 1: Age distribution in benign breast diseases.

Age in years	No. of cases	Percentage (%)
15-19	56	28
20-24	64	32
25-29	18	9
30-34	22	11
35-39	22	11
>40	18	9

Table 2: Incidence of various benign breast diseases.

Diseases	No. of cases	Percentage (%)
Fibroadenoma	110	55
Mastalgia with nodularity	36	18
Breast abscess	32	16
Phylloides tumor	8	4
Lipoma	6	3
Fibrocystic disease	4	2
TB mastitis	2	1
Duct papilloma	2	1

Table 3: Relation between lactation and different benign breast diseases.

Duration from lactation	Fibroadenoma	Mastalgia with nodularity	Breast abscess	Phylloides tumor	Duct papilloma
0-6 months	36	8	30	-	-
6-12 months	10	4	-	2	2
>12 months	4	6	-	6	-

Table 4 shows overall accuracy 88%, 100% accuracy in clinical diagnosis in cases with breast abscess. The accuracy rate of fibroadenoma was 96.36% and 88.89% in cases of mastalgia with nodularity.

Table 5 shows that the overall accuracy rate of USG was 77.32%. Out of 172 patients who were subjected to USG, the disease detection was made in 133 patients. 100% success was obtained in cystic diseases. Accuracy rate for fibroadenoma, mastalgia with nodularity and phyloides tumor were 83%, 67.64% and 50% respectively.

Table 6 shows that accuracy of FNAC was 100% in detecting fibroadenoma, breast abscess, duct papilloma and cystic disease. Overall accuracy was 93%.

Table 7 shows that overall accuracy of mammography was 72.22%. Out of 18 patients aged >40 years undergone mammography, the disease detection as benign was done in 13 cases. Mammography showed 83.33% accuracy for breast abscess, 90% for fibroadenoma, and 50% for mastalgia with nodularity.

Table 4: Accuracy of clinical examination in cases with histopathological diagnosis.

Diseases	Histo-pathology	Clinical diagnosis		Accuracy percentage (%)
		No. of correct	Incorrect	
Fibroadenoma	110	106	4	96.38
Mastalgia with nodularity	36	32	4	88.89
Phylloides tumor	8	4	4	50
Duct papilloma	2	-	2	-
Duct ectasia	-	-	-	-
Breast abscess	32	32	-	100
Fibrocystic disease	4	-	4	-
Lipoma	6	2	4	33.33
Fat necrosis	-	-	2	-
TB mastitis	2	-	2	-

Table 5: Accuracy of USG diagnosis in cases with histopathological diagnosis.

Disease (age <40years)	Histopathology	Gr-I	Gr-II	Total	USG detected	Accuracy percentage (%)
Fibroadenoma	100	94	6	100	83	83
Mastalgia with nodularity	34	26	8	34	23	67.64
Breast abscess	26	24	2	26	19	73.07
Phylloides tumor	8	6	2	8	4	50
Fibrocystic disease	4	4	0	4	4	100
Total	172			172	133	

Table 6: Accuracy of FNAC in histopathologically diagnosed cases.

Disease	Histopathology diagnosis	FNAC			Accuracy percentage (%)
		Correct	Insufficient	In-conclusive	
Fibroadenoma	110	110	-	-	100
Mastalgia with nodularity	36	30	4	2	83.33
Breast abscess	32	32	-	-	100
Phylloides tumor	8	4	4	-	50
Fibrocystic disease	4	4	-	-	100
Lipoma	6	6	-	-	100
TB mastitis	2	-	2	-	-
Duct papilloma	2	-	-	2	-

Table 7: Accuracy of mammography in relation to histopathological diagnosis.

Disease (>40 years of age)	Histopatholgy diagnosis	Mammographic detection as benign	Accuracy percentage (%)
Fibroadenoma	10	9	90
Mastalgia with nodularity	2	1	50
Breast abscess	6	5	83.33
Total	18	15	83.33

DISCUSSION

In the present series, youngest patient was of 15 years age, oldest being 50 years. Average age of incidence was 24 years. Most common age group was 15-24 years which is comparable with finding as 21-30 years according to Koorapati et al, Ilaiah et al, Chalya et al and Mallikarjuna et al.[12-15] The most common entity was fibroadenoma (55% cases) which correlates with finding of Bangaru et al (75% cases), Narayana et al (54% cases)

and Pandey et al (42.8%).[16-18] Most common presentation was breast lump in 53% cases which corresponds to finding of Koorapati et al (68%cases), Ilaiah et al (58.3% cases), Chalya et al (67.6% cases).[12-14] In 27.77% of mastalgia with nodularity patients, there was history of taking OC pills. 24 out of 110 patients (21.8%) patients of fibroadenoma used OC pills.

In this study, out of 200 patients only 48 patients (24%) had history of using OC pills. No association between lactation and benign breast diseases was shown in studies by Pestides et al and Yu et al.[19,20] Out of total number of 172 cases subjected to USG, detection of disesase was done in 133 cases with overall accuracy of 77.33%. The accuracy rate of fibroadenoma was 83%, for mastalgia with nodularity 67.64%, for breast abscess 75%, 50% for phylloides tumor and 100% for fibrocystic diseases which concurs the finding of Bangaru et al (98.3% sensitivity and 71.4% specificity).[16] The Aberdeen breast clinic had a high accuracy rate of 96.8% for benign breast diseases.

In this study fibroadenoma was found to be the most common lesion associated with oral contraceptive users while few studies have shown fibrocystic disease to be associated commonly with OC pill use. In this study the clinical diagnostic accuracy was found to be 88% and the same was 86.7% in study by Smallwood et al, 91.3% in study by Dandpat et al and 85% for Furnival et al.[21-23] We found the diagnostic accuracy for FNAC was 93% and comparable results were found in studies by Selvakumaran et al (89.6%) and Rajkumar et al (98%).[24,25] In this study the accuaracy of mammography in diagnosing benign breast diseases was 83.33 % whereas 87% diagnostic accuaracy and sensitivity 100% was in study by Patil et al.[26]

CONCLUSION

So we conclude that approximately more than half of the lumps in breast are benign in nature. However, benign it may be, a lump in breast should not be taken easily and utmost care should be given to its benign and malignant differentiation. Thorough clinical examination along with pathological and radiological assessment can be useful and effective in approaching and managing benign breast diseases. Prompt medical or surgical intervention not only benefits the patients but also upholds the decision of the concerned surgeon. Breast self-examination and education among the females is very important in case of benign breast diseases as they are common sources of anxiety and stress for the patient. And since there is no consensus on morphologic risk markers, in future molecular genetic study may help in the risk stratification to help in a better clinical management.

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