

Original Research Article

A clinico-pathological study of benign breast disease at tertiary care centre

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ABSTRACT

Background: Benign breast diseases are 10 times more common than breast cancer in developed countries. It deserves attention because of their high incidence, their impact on women's life and due to cancerous potential of some histological types. The aim of the study was to evaluate the overall spectrum in relation to age, sex and clinical presentation in a Tertiary care centre. The primary objective of this study was to evaluate and correlate the role of FNAC and histopathological report with clinical examination for differentiating benign and malignant lesion. The secondary objective of this study was to evaluate and correlate the clinico-radiological presentation of the benign breast diseases.

Methods: A prospective observational study was conducted at a tertiary care centre where total of 64 patients were taken. Detailed clinical history and examination was done and then compared to histopathological, FNAC, and radiological results.

Results: Out of the 61 female patients fibroadenoma was found most common followed by fibrocystic disease and breast abscess. Most common age group was found to be 2nd decade of females having firm, painless swelling as their chief complaints. Accuracy of HPE, radiological and FNAC results were compared with clinical diagnosis.

Conclusions: Benign breast diseases are common among young females. Triple assessment is a gold standard approach to breast disease management.

Keywords: Benign breast disease, Fibroadenoma, Triple assessment

INTRODUCTION

Mammary glands, or breasts, are a distinguishing feature of mammals and have physical as well as psychological importance in females.^{1,2} Many hormones regulate its development and growth, as well as physiologic states such as pregnancy and lactation.¹ The majority of breast lesions are overwhelmingly benign.³ The mammary gland is unique among reproductive organs since it is not fully formed at birth, undergoes cyclical changes during childbirth.⁴ Aberration in normal development and involution [ANDI] is the term referring to benign proliferative changes in the breast.⁵ Breast benign

disorders are common during the reproductive period of life, and they are believed to be hormone-related. There is a dramatic drop off in their incidence after menopause, since the ovary is no longer stimulated.⁶ Occurrence of benign breast diseases can occur at any time during the lifetime of a female, though male cases are rare.⁷ Breast is an organ of beauty and pride for a female apart from performing the important physiological function of lactation.⁸ Benign breast lesions deserve attention because of their high prevalence, their impact on patient's life and due to cancerous potential of some high risk breast lesions.⁹ Breast lesions are 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.¹⁰ Benign breast diseases are at least times more common than breast cancer in developed countries.¹⁰ Globally, benign breast diseases are the most common lesions accounting for 90% of the clinical presentation related to breast diseases.¹¹

Aims and objectives

Aim

The aim of the study was to determine the overall spectrum of benign breast disorders in relation to age, sex and clinical presentation in a tertiary care center.

Primary objective

The primary objective of this study was to determine and correlate the role of FNAC and histopathological report with clinical examination for differentiating benign and malignant lesion.

Secondary objective

The secondary objective of this study was to determine and correlate the clinico-radiological presentation of the benign breast diseases.

Methodology

The present prospective study was done at Geetanjali Medical College and Hospital (GMCH), from January 2020 to June 2021 after getting approval from Ethical Clearance Certificate on 20th december 2019. A total of 64 patients were included consecutively who attended OPD/ IPD with breast symptomatology in a given period of time.

Study type

The study type was observational cross- sectional study.

Study place

The study was conducted at Geetanjali medical college and hospital.

Study period

The study was conducted from January 2020 to June 2021

Selection criteria

Inclusion criteria

Female and Male patient with complaints of breast diseases for example: breast lump, breast pain, nipple discharge. Females 18 year and above. Males 18 year and

above. All patients who are willing to undergo further management with informed and written consent.

Exclusion criteria

Female and male patients with obvious malignant disease or who had been treated for malignancy earlier.

METHODS

The study population consisted of patients who met the above criteria and were willing for evaluation of their clinically diagnosed breast lesions were undertaken in this cross- sectional study. Detailed history including the demographic factors, with significant past illness, and family and menstrual history were recorded for all patients. Triple assessment was done for patients and surgical excision of lesion was done those opted for surgery and was sent for HPE and findings were confirmed. Based on that assessment, sensitivity and specificity were calculated and compared among each investigating modalities.

Statistical analysis

Sampling technique

The sampling technique was consecutive sampling.

Sample size

The sample size was 64.

Formula

$$n = (Z \alpha)^2 P(1 - P) \div E^2$$

RESULTS

Among the age wise distribution of benign breast disease, the highest number of patient were in age group 18-30 years (45.31%) and second common age group of patients was 31-40 years which included 16 patients (25%).

Table 1: Age wise distribution.

Age group (years)	N	%
18-30	29	45.31
31-40	16	25.00
41-50	8	12.5
51-60	8	12.5
>60	3	4.69
Total	64	100

The least percentage of patients were reported in age group of >60 years which included only 3 patients (4.69%).

The correlation of clinical diagnosis and HPR showed that clinical diagnosis was 80% and 87.5% accurate in diagnosing benign breast diseases like fibroadenoma and fibrocystic disease respectively. On final HPR the accuracy of clinical diagnosis of gynecomastia and benign phylloides was 100%. Mastitis and breast abscess were managed conservatively and biopsy was not sent for breast abscesses. The overall accuracy of our clinical diagnosis was found to be 91.87% when compared with final HPR.

Out of the clinically diagnosed 42 cases of fibroadenoma, 37 cases showed similar diagnosis on USG. This showed that correlation between clinical and radiological diagnosis for diagnosing fibroadenoma in the present study was 88.09%.

Table 2: Symptomatology.

Symptoms	N	%
Breast pain	1	1.56
Painless swelling	53	82.81
Pain and swelling	4	6.25
Pain, swelling and nipple discharge	2	3.13
Pain, swelling and fever	3	4.69
Pain, swelling, fever and nipple discharge	1	1.56
Total	64	100

Table 3: Accuracy of clinical diagnosis with final HPR.

Diseases	Clinical diagnosis	Histo-pathology			Accuracy (%)
		Correct	Incorrect	Specimen not sent for HPE	
Fibroadenoma	42	32	8	2	80
Fibrocystic disease	10	7	1	2	87.5
Gynecomastia	3	3	0	-	100
Mastitis	3	-	-	3	-
Breast abscess	4	-	-	4	-
Galactocele	1	-	-	1	-
Benign phylloids	1	1	0	-	100

Table 4: Correlation between clinical and radiological diagnosis.

Diseases	Clinical diagnosis	USG			Correlation (%)
		Correct	Incorrect	USG not done	
Fibroadenoma	42	37	5	-	88.09
Fibrocystic disease	10	10	0	-	100
Gynecomastia	3	3	0	-	100
Mastitis	3	1	-	2	100
Breast abscess	4	3	-	1	100
Galactocele	1	1	-	-	100
Benign phylloids	1	1	-	-	100

Table 5: Accuracy of radiological diagnosis with final HPR.

Diseases	USG	Histo-pathology			Accuracy (%)
		Correct	Incorrect	Specimen not sent for HPE	
Fibroadenoma	35	32	3	-	91.42
Fibrocystic disease	12	10	2	-	83.33
Gynecomastia	3	3	0	-	100
Mastitis	2	2	0	-	100
Breast abscess	3	-	-	3	-
Benign phylloids	2	2	-	-	100
Duct ectasia	1	1	-	-	100
Fat necrosis	2	2	-	-	100

Similarly, clinical and radiological correlation in diagnosing fibrocystic disease, gynaecomastia, galactocele, and benign phylloides was found to be 100% in our study. Out of the 3 cases of mastitis, 2 patients were not willing for USG and remaining 1 patient was correctly diagnosed with mastitis giving 100% correlation to our clinical diagnosis. Similarly, out of the 4 cases of breast abscess, 3 cases were correctly diagnosed radiologically and 1 patient did not undergo for radiological investigation.

The overall correlation of our clinical diagnosis was found to be 98.29% when compared with radiological diagnosis. Ultrasound was 91.42% accurate in diagnosing fibroadenoma and 83.33% accurate in diagnosing fibrocystic disease when compared to final HPR diagnosis. It was 100% accurate in diagnosing gynaecomastia, mastitis/ TB mastitis, benign phylloides, duct ectasia and fat necrosis. The 3 patients diagnosed with breast abscess on USG did not undergo for HPE. Ultrasound diagnosis was found to have 96.39% accurate when compared with final HPR.

DISCUSSION

The breast lump is the most common symptom of women presenting to breast centers, accounting for more than half of the complaints. Although most are benign, the presence of a mass can cause considerable anxiety because of the concern for cancer. The most important task of the physician evaluating a breast mass is to exclude the presence of malignancy and provide an accurate diagnosis.

Age wise distribution of benign breast disease

Benign breast lesions are more common in reproductive age group 8. The incidence of benign breast disease begins to rise in the 2nd decade, and it peaks in the 4th or 5th decade as compared to the malignant lesions, for which the incidence continues to rise after menopause 12. In the present study the most common age group was found to be between 18 to 30 years accounting for 29 patients (45.31%) out of total 64 patients. Similar age distribution with majority of the patients being in the age group of 21-30 years was found in the previous studies done by Sankar et al, Das et al, and Khanna et al, Sangma et al.^{5,13-15}

Accuracy of clinical diagnosis

The study done by Abhijit et al 7 also showed similar clinical accuracy of 91.1% in their study and was comparable to study of Iyer et al 36 (90.24%). In our study the overall clinical accuracy was found to be 91.87% when compared to final histopathological findings, and that was found to be similar to other studies.

Role of triple assessment

Masses that are found to be solid on imaging require triple test evaluation which refers to physical examination, radiologic examination, and needle biopsy performed by core or fine-needle aspiration (FNA). The triple test is performed even in cases where masses are considered benign on imaging because some malignant lesions can have a benign appearance. The overall specificity by triple assessment method for diagnosing fibroadenoma and fibrocystic disease in our study was found to be 92.85% and 89.13% respectively. While, the specificity was found to be 100% in other benign conditions like gynaecomastia and benign phylloides. The overall specificity of triple assessment in our study was found to be 96.7% in diagnosing benign breast disease.

Limitations

Though ultrasound is the primary investigation of choice in women under the age of 35 years, children and in male patients. It remains the imaging modality which is most dependent on the operator's skill and technique, both of which require optimal attention to detail. Our study had the lesser sample size of patients (n=64) and a smaller study period of 2 years, which made our case study limited. Moreover, all the cases did not opt for surgical excision and their HPR was therefore not available. So the diagnosis made by triple assessment method was not found to be precise in several diseases. The lack of participation of patients for not undergoing all imaging modalities made our study limited. Therefore, a detailed study may be needed to compare all imaging modalities for this and it should include all patients with their final HPR diagnosis. Other factors that limited our study were: lump being painless and it was not interfering with normal day to day work with patients hoping that the lump may disappear, financial constraints of the cases, delayed referral to tertiary care facility and lack of awareness about the disease.

CONCLUSION

Our study analyzed that for correct diagnosis of breast diseases, background knowledge of general features of individual breast diseases like incidence, age distribution, symptoms and palpatory findings are very important. In our study, the specificity of clinical diagnosis, ultrasonography and FNAC was found to be 91.87%, 96.39% and 98.57% respectively when compared with final histopathological report. The three modalities of clinical assessment, imaging and pathological examination, known as triple assessment, are now a standard practice.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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