



Original Research Article

Clinical and pathological study of patients with fibrocystic disease of breast in tertiary care hospital of Gurugram, Haryana

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ABSTRACT

Introduction: A fibrocystic breast disease group of benign breast diseases that consists of fibrocystic breast disease, breast cyst, breast abscess, duct ectasia, cyclic and non-cyclic mastalgia, Gynaecomastia and Mondor's disease. Abnormal hormonal balance and cellular interactions mediated growth factors leading to ductal and cellular hyperplasia is the main pathophysiological cause of the disease.

Materials and Methods: This prospective observational study was conducted on 100 SGT medical college and hospital patients from January 2021 to August 2022 to assess the detailed clinicopathological study of patients with fibrocystic disease breast diagnosed clinically with relevant investigations.

Results: In our study, we found that fibroadenoma is the maximum among all Fibrocystic breast diseases, i.e. 34%, with the majority between 11-30 years. It rises in the 2nd decade of life and peaks in the 4th decade. Non-cyclic mastalgia constituted 29% of the total cases, with most patients lying in the age group of 31-50 years, where mastalgia was the presenting complaint in most cases. Inflammatory breast diseases formed 4% of the total, with the main presenting symptoms being mastalgia, fever and nipple discharge. Again, it mainly included patients from the age group of 31-50 years. Gynaecomastia and breast abscess were diagnosed in 3 cases, with all lumping on the right side of the breast.

Conclusion: Our study attempted to derivate the spectrum of breast diseases in different age groups among patients reporting to SGT medical college and hospital, SGT University, Gurugram, Haryana. Apart from the incidence of various fibrocystic diseases, various other facts were recorded. Benign breast lesions were recorded to comprise the bulk of the patients presenting with breast disorders and were maximum in the reproductive age group. Breast sclerosing adenosis should be identified by excluding the malignancy. Most Fibrocystic breast diseases have been managed conservatively.

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1. Introduction

Fibrocystic breast disease is the most common benign type of breast disease that generally affects women between 20-50 years of age and is ten times more common than malignant breast diseases in the west.^{1,2} Different studies have shown that over 70% of women

develop fibrocystic breast disease in their lifetime, with only 20% being symptomatic.^{3,4} Breast fibrocystic diseases include various non-malignant breast lesions like mastalgia, nipple discharge, trauma and benign breast tumours.¹ The term comprises both cystic and solid lesions, including microcystic and macrocystic breast lesions, adenosis, papilloma, epithelial hyperplasia with or without atypia and metaplasia.² Histological classification of benign

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breast disorders is classified into three major categories that include non-proliferative breast disorders like cysts, apocrine metastasis, duct ectasia, fibroadenoma and calcifications, the proliferative breast disorders like radial and complex sclerosis lesions, ductal epithelial hyperplasia, intraductal papilloma and atypical proliferative lesions like atypical lobular hyperplasia and ductal hyperplasia. The patients presenting with proliferating fibrocystic breast diseases are at a greater risk of developing breast cancer than those with non-proliferative breast disease.⁵⁻⁷ According to Sangam et al.,⁸ the incidence of fibrocystic changes and breast abscesses was 18% and 12%, respectively, and benign breast disease accounted for 48% of all the cases. The abnormal hormonal balance is essential in the pathophysiology of fibrocystic diseases. The abnormally high estrogen levels and imbalance in the estrogen-progesterone ratio are observed in women with fibrocystic breast disease.⁹

The abnormal cellular interactions mediated growth factors involved in ductal growth and hyperplasia, TGF- α , β and FGF also contribute significantly to the development of fibrocystic disease.¹⁰ Various other etiological factors include a positive family history of the fibrocystic disease, drugs like OCP, young age mothers, nulliparity and the duration of breastfeeding.¹¹ The common signs and symptoms in patients with fibrocystic disease are cyclic or non-cyclic breast pain, nipple discharge, and a firm discrete rubbery solitary lump that occurs majorly in one quadrant of the breast.¹¹ Fibroadenoma, however, is a type of fibrocystic disease that is a painless and solid benign breast tumour that usually occurs between the age of 14-35 years.¹² Shukla and Khanna,^{13,14} drew attention to the significance of breast pain, which usually accounts for 70% of all fibrocystic and benign breast diseases. Cyclic mastalgia was more common than non-cyclic in fibrocystic and benign breast disease patients. Kumar et al. observed a wide range of breast lump size varying from 2.5cm to as big as 10cm in cases of phyllodes tumour.¹⁵ Clinical history, physical examination and radiological findings like USG, mammography, and FNAC are used to detect and confirm the FCD of the breast.¹⁶ FNAC forms the primary investigatory modality with sensitivity and specificity of 99% and 89%, respectively. Surgical excision is usually adequate in 90% of cases; however, surgical interventions like simple mastectomy and wide excision may also be needed in the rest of the patients.¹⁶

2. Aims and Objectives

The detailed clinicopathological study of breast patients diagnosed clinically with fibrocystic disease with relevant investigations.

3. Materials and Methods

3.1. Study design

Prospective observational study.

3.2. Study site

SGT medical college and hospital, SGT university, Bucher, Gurugram, Haryana, India.

3.3. Study population

A total of 100 patients were included from the OPD and surgical wards of SGT medical college.

3.4. Inclusion criteria

OPD patients of all age groups. Patients with previous breast disease or surgery for breast disease will also be considered for the present study.

3.5. Exclusion criteria

Following are the diseases which had been excluded from this study:

1. Women with an apparent malignant disease or those treated for malignancy earlier.
2. Infective pathology like herpes or any infection.
3. Blow/trauma to the breast.
4. Burn injury to the breast.

3.6. Operational definition

3.6.1. Procedure and data collection

The study was conducted after obtaining approval from the institutional thesis and ethical committee. The study was based on the patients attending the surgical OPD with a lump in the breast. Informed consent of each patient has been taken before enrolment into this study. The present study included 100 cases of female and male patients of all ages who complained of lump/pain in the breast. Diagnosis of fibrocystic breast disease was based on clinical history taking and local examination of both breasts. All quadrants of the breast were examined. In addition, both breasts were reviewed along with palpation of the axillary lymph nodes bilaterally. Each patient's treatment had been done as per the diagnosis, and the management of each patient was recorded in the proforma as attached. The patients managed on an outdoor basis had been followed up in successive OPD and routinely followed up. The data was collected and analysed by applying appropriate statistical tests.

3.6.2. Analysis plan

The data were collected properly, and entries were made. Numeric data are presented as mean \pm SD. Simple mathematical expressions like percentages were also used.

Statistical analyses were performed using the latest software package for social science (SPSS) software. Sensitivity, specificity, Positive predictive value (PPV) and negative predictive values (NPV) were calculated.

3.6.2.1. Quality assurance. It was ensured at every step. Patients were enrolled in an unbiased fashion.

3.6.2.2. Ethical considerations. The institutional ethics committee's approval for research on the human subject was taken. Throughout the study, strict ethical norms were maintained and written informed consent was taken from patients in their local language (mother tongue).

4. Results

Our study included a total of 100 cases. Most patients were in the age group of 11-30 years (54%). The age groups of 31-50 years and >50 years included 43% and 5% cases, respectively [Table 1]. It was observed that breast diseases were more common in females (97%) compared to males (3%) [Table 2]. Breast disorders were slightly more common on the right side (39%) than on the left side (10%) [Table 3]. 51% of cases had bilateral problems, and most patients had a lump size of less than 2 cm, i.e. 62%. 4 patients had a lump size of Less than 3 cm and few patients had more than 3 cm. 32 patients had mastalgia only [Table 4]. It was observed that among all the breast quadrants, the frequency of lumps in the outer upper quadrant was 68%. 3% of patients had lumps in the lower outer quadrant, and 2% had lumps in the upper outer quadrant. 32% of patients did not lump only [Table 5].

On histopathology, 34 patients were found to have fibroadenoma, cyclic mastalgia consisted of 20 cases, breast abscess consisted of 4 cases, and Gynaecomastia consisted of 3 cases. Breast cysts and duct ectasia had only 5 and 3 cases, respectively [Table 6]. It was observed that fibroadenoma was maximum in the age group of 11 to 30 years (20%), followed by the age group 31 to 59 years (11%). Non-cyclic mastalgia showed maximum incidence in 31 to 50 years (12%) And was relatively nil in more than 50 years. Cyclic mastalgia was the maximum in 11 to 30 years (13%). And followed by 31 to 50 years, 7% inflammatory conditions like mastitis and abscess were found to be the maximum among 31 to 50 years (4%). Mondor's disease, and breast cysts were common among the age group of 31 to 50 years and 11 to 30 years, respectively [Table 7].

Table 1: Showing age wise distribution of breast disease

Age in years	No of cases	Percentage
11-30	52	52%
31-50	43	43%
>50	5	5%

Table 2: Showing gender distribution

Sex	No of cases	Percentage
Female	97	97%
Male	3	3%

Table 3: Showing side effects

Side	No of cases	Percentage
Right side	39	39%
Left side	10	10%
Bilateral	51	51%

Table 4: Showing size of lump in any dimensions presentation.

Size(cm)	No of cases	Percentage
<2cm	62	62%
3cm	4	4%
>3cm	2	2%
Total	68	68%
No lump	32	32%

Table 5: Quadrants involved in all cases

Quadrant	Number	Percentage
Upper outer	63	63%
Lower outer	3	3%
Upper inner	2	2%
No lump	32	32%

Table 6: Showing benign breast disease distribution according to spectrum of histopathology

Benign breast diseases	No of cases	Percentage
Breast abscess	4	4%
Duct ectasia	3	3%
Cyclic mastalgia	20	20%
Fibroadenoma	34	34%
Breast cyst	5	5%

Table 7: Distribution of various breast diseases according to different age groups

Fibrocystic breast disease	11-30	31-50	>50
Breast abscess	0	4	0
Breast cyst	4	1	0
Duct ectasia	3	0	0
Cyclic mastalgia	13	7	0
Fibroadenoma	20	11	3
Gynaecomastia	2	0	1
Mondors disease	0	4	0
Non cyclic mastalgia	12	16	1
Total	54	43	5

5. Discussion

Breast diseases are very common diseases affecting females. Due to better health awareness and medical facilities, the number of patients presenting with breast lumps has increased considerably over the years. The main objective of the present study was to become conversant with the percentage of various types of fibrocystic diseases of the breast to know the age distribution and to determine the breast disease based on histopathological findings. In the present study, a total of 100 cases were examined histopathologically. Fibrocystic diseases and fibroadenoma make up the majority, followed by non-cyclic mastalgia. In our study, we observed painless breast lump, i.e. freely mobile, is the presenting symptom in 68% of the cases. Foncroft LM et al.¹⁷ found that 87.4% of women who attended the clinic presented with a breast lump, and Ratana Chikanont T.¹⁸ reported that the breast lump was the presenting symptom in 72.35% of patients. In our study, breast's most common quadrant involved was the breast's upper and outer quadrants. This result is consistent with Sohi F.Oluwole¹⁹ study, where the most common disease site was the right outer upper quadrant. The number of lesions varied from 2-5 (69.72%), with overall sizes ranging from 2 -10cm in our study compared to Sohit. Oluwole¹⁹ where the lesion size varied from 1 -10cm. According to our study, fibroadenoma formed 34% of all benign breast diseases. Most patients that presented with fibroadenoma were between the ages of 36-55 years (23 cases), followed by the age group 11-30 years (18 cases). The study by Bagale⁶⁸ reported that the commonest age group of fibroadenoma was 15-40 years. These findings are similar and consistent with the results reported by Kulkarni et al.,²⁰ Malik et al., Amr et al.²¹ and Gupta et al.,^{1,2} who reported 62%, 41%, 30.7%, 43% of the total patients as fibroadenoma respectively. Non-cyclic mastalgia was the second most common benign breast disease accounting for benign breast diseases. According to Gupta et al.,²² the max incidence of benign breast disease was up to 40 yrs. Ish and Cox PJ²³ described the mean age as 40 yrs. The main presentation in 64 per cent of cases was pain and tenderness, and I'll define mass. Similar facts reported by Hangensen supported it.²⁴ Inflammatory diseases of the breast formed only 2 per cent of fibrocystic breast disease in our study, with max incidence found between 31 to 40 years of age. Our data agree with Kulkarni et al., who reported 8.7% of the same. However, bagale et al.²⁵ reported a higher incidence of 18.2%. The mean age of the involvement of the inflammatory diseases was among females in lactation and perperium period. These results are comparable with Haque et al.²⁶ who found that breast abscess was maximum among the age group of 31 to 40yrs. Gynaecomastia was encountered in 4cases out of all breast fibrocystic disease patients belonging to different age groups. Shashikala V²⁷ and Kulkarni et al. reported the incidence of 2.25 and

2.84%, respectively. In the present study, FNAC played a vital role in managing patients presenting with breast lumps (sensitivity 97%). Histopathology showed 34 cases of fibroadenoma. Cyclic mastalgia had 20 cases, breast abscess had 4 cases, Gynaecomastia consisted of 3 cases, and breast cyst and duct ectasia formed 5 cases and 3 cases, respectively.

Out of 100 cases, only 67% could afford sonomammography to differentiate between solid and cystic lesions. Out of these, only three were cystic rest solid. During the study, various facts were observed and recorded, like the fibrocystic breast disease starts to rise in 2nd decade of life and peaks in 4th decade. Gynaecomastia has been found after puberty and old age; breast sclerosing adenosis should be well excluded from malignancy through various steps. Although most cases of breast disorders were diagnosed as benign, every patient presenting with a lump should be diagnosed by FNAC and sonomammography to rule out the malignancy. Our study had well attempted to analyse the spectrum of breast diseases in patients with different age groups. According to our study, we could conclude that fibroadenoma formed 34% of fibrocystic breast disc diseases maximum incidence in the age group of 11 -30 years. Patients presented with a freely mobile lump in all the cases. Non-cyclic mastalgia constituted 29% of cases, with most patients lying in the age group of 31-50 years, where patients mainly presented with mastalgia in most cases. Inflammatory breast diseases formed 4%, showing symptoms of mastalgia, fever and nipple discharge. It mostly includes patients from the age group of 31-50 years. Gynaecomastia was diagnosed in 3 cases, with lumps on the right side of the breast.

Other facts were also recorded besides the incidence of various fibrocystic diseases. Benign breast lesions were recorded to comprise the bulk of the patients presenting with breast disorders and were maximum in the reproductive age group. The incidence of fibrocystic breast disease rises in the 2nd decade and peaks in the 4th decade, whereas Gynaecomastia is found after puberty and old age. Breast abscesses, Duct ectasia, and Breast cyst need to be examined and investigated carefully. Mastalgia had to be appropriately differentiated then, according to diagnosis, it was managed. Breast sclerosing adenosis should be identified by excluding the malignancy. Most of the Fibrocystic breast diseases had been managed conservatively. Although most cases of breast disorders were diagnosed as benign, every patient presenting with a lump in the breast should be diagnosed by FNAC and sonomammography to rule out the malignancy. In our study of 100 cases, we found various types of fibrocystic disease of the breast. Thus, our study attempted to derivate the spectrum of breast diseases in different age groups among

patients reporting to SGT medical college and hospital, SGT University, Gurugram, Haryana.

6. Ethical Clearance

Ethical clearance has been taken from institutional ethical committee, Department of surgery, Faculty of medicine and health, SGT University, Haryana (SGTU/FMHS/Gen Surgery/23/450).

7. Patients Consent

Informed consent has been taken from the patients involved.

8. Source of Funding

None.

9. Conflict of Interest

None.

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