

A Clinico-Pathological Study of Benign Breast Diseases in Gauhati Medical College and Hospital

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ABSTRACT

Introduction: Benign breast diseases are common disorder, upto 30% of women will suffer from benign breast diseases requiring treatment at sometimes in their lives. It is at least 10 times more common than breast cancer in hospital clinic. The term benign breast disease, (BBD) encompasses a heterogenous clinical and pathological condition which ranges from inflammatory condition to benign neoplastic conditions. During the past decade there has been an increasing interest in BBD for the reasons like its high incidence, patients demanding investigations and treatment for symptoms of diseases and the question of premalignant disorder in which surveillance may be beneficial.

Materials and Methods: During the period of study from 1st August 2021 to 31st July 2022, 108 patients attending surgical out patient department and admitted in Department of Surgery with breast lump and pain at Gauhati Medical College and Hospital, were taken up for the purpose of the study. The data were obtained from all the patients who presented with symptoms and signs of benign breast disease. Benign breast disease was diagnosed clinically in patients with breast lump, pain, nipple discharge followed by radiological and histopathological investigations.

Results and Observations: Our study population comprised 108 patients with both benign breast tumours and inflammatory lesions. Fibroadenoma was the predominant breast tumour occurring in (61.1%) cases. The next common tumours were fibrocystic disease occur in (11.1%), Breast abscess 8.3%, phyllodes tumour (5.6%), tubular adenoma (3.7%), and Fibroadenosis (2.8%). We found two cases of breast cyst, two cases of antiabioma and single case of gynaecomastia (0.9%) Acute mastitis (0.9%), Galactocele (0.9%), Tuberculous Mastitis (0.9%). Majority of the fibroadenoma (66.6%) cases were found in the age group of 16-30 years. Fibrocystic disease was maximum (50%) in 31-45 years of age. All 6 cases of phyllodes tumour were found in 3rd and 5th decades. Youngest patient in our study was 15 years oldest was 45 years. Commonest mode of presentation of most of our benign breast tumours was painless lump in the breast. 90.9% of fibroadenoma, 25% of fibrocystic disease and all cases of phyllodes tumour presented as painless tumour.

Conclusion: The most common benign breast tumour found was fibroadenoma (61.1%) and majority of the fibroadenomas found in the 2nd decade of life. Majority of benign breast lesions presented with painless lump in the breast except fibroadenosis, breast abscess, acute mastitis, breast cyst and tuberculous mastitis.

Key words: Benign Breast Disease, Fibroadenoma, Fibroadenosis

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I. INTRODUCTION

Breast is a dynamic structure, which undergoes changes throughout women's reproductive life, and superimposed on this, cyclical changes throughout the menstrual cycle. The pathogenesis involves disturbance in the breast physiology extending from an extreme normality to well defined disease processes.¹ Benign breast diseases are common disorder, upto 30% of women will suffer from benign breast diseases requiring treatment at sometimes in their lives.¹ It is at least 10 times more common than breast cancer in hospital clinic. Growing public awareness have increased referrals to hospital clinics for breast symptoms and currently malignant to benign ratio of 1: 10 are being seen in breast clinic.² The term benign breast disease, (BBD) encompasses a heterogenous clinical and pathological condition which ranges from inflammatory condition to benign neoplastic conditions. During the past decade there has been an increasing interest in BBD for the reasons like its high incidence, patients demanding investigations and treatment for symptoms of diseases and the question of premalignant disorder in which surveillance may be beneficial. Thus, it is an important area because of its incidence in the population at large and because of the concern it generates. The concept of ANDI (Aberrations of Normal Development and Involution) as described by Prof. Hughes is recommended as a framework for understanding majority of benign conditions. Breast complaints are one of the most common reasons for surgical

consultation. The majority ultimately proves to have a benign origin.³ Breast lesions may present with a variety of symptoms often confusing clinical evaluation leading to error in treatment of essentially benign conditions. Thus the aim of this study is to exclude malignant breast condition and to emphasise on their presentation and treatment of benign breast diseases. This study aims to evaluate the incidence, clinical presentation, age distribution and management of the benign breast diseases.

II. AIMS AND OBJECTIVES

AIMS : To study the clinical profile of Benign Breast Diseases.

OBJECTIVES: To study the age incidence and distribution and clinical presentation of benign breast diseases (BBDs). To correlate clinical diagnosis with histopathological examination regarding the accuracy of clinical diagnosis.

III. MATERIALS AND METHODS

STUDY POPULATION This prospective clinical study was undertaken on a series of patients attending surgical out patient department and admitted to surgical wards with breast lump and pain at Gauhati Medical College and Hospital during the period one year of 1st August 2021 to 31st July 2022.

SAMPLE SIZE All patients attending surgical out patient department and admitted in GMCH during the study period and fulfilling the inclusion and exclusion criteria. As such the sample size for the present study is 108.

SOURCE OF DATA The data were obtained from all the patients who presented with symptoms and signs of benign breast disease. Benign breast disease was diagnosed clinically in patients with breast lump, pain, nipple discharge followed by radiological and histopathological investigations.

METHODS OF COLLECTION OF DATA Data was collected by preparing a proforma with relevant history, clinical examination and investigation.

Inclusion criteria

1. All cases of benign breast disease diagnosed clinically or radiologically. Including both sexes.
2. Patient presenting with signs and symptoms of benign breast like lump, pain, nipple discharge, breast abscess between 12-45 years of age.

Exclusion criteria

1. Patient who has not started menarche.
2. Patient with history of trauma.
3. Patient with malignant breast lump.
4. Patients who are not willing for surgery, seriously ill patient and not fit for surgery.

IV. RESULTS AND OBSERVATION

The present study consists of 108 cases of benign breast disease which were studied in detail during August 2021 to July 2022 attending surgical out patient department and admitted to surgical wards with breast lump, pain and nipple discharge at Gauhati Medical College and Hospital between 12-45 years of age and fulfilling the inclusion and exclusion criteria.

Types of Benign Breast Diseases during this study

Table-1 Various benign breast diseases in the present study

S.No	Diagnosis	No.ofCases	Incidence(%)
1	Fibroadenoma	66	61.1
2	Fibrocysticdisease	12	11.1
3	Breastabscess	9	8.3
4	Phyllodestumour	6	5.6
5	Tubularadenoma	4	3.7
6	Fibroadenosis	3	2.8
7	Breastcyst	2	1.9
8	Antibioma	2	1.9
9	Gynaecomastia	1	0.9
10	Acutemastitis	1	0.9
11	Galactocele	1	0.9
12	TuberculousMastitis	1	0.9

	Total	108	100.0
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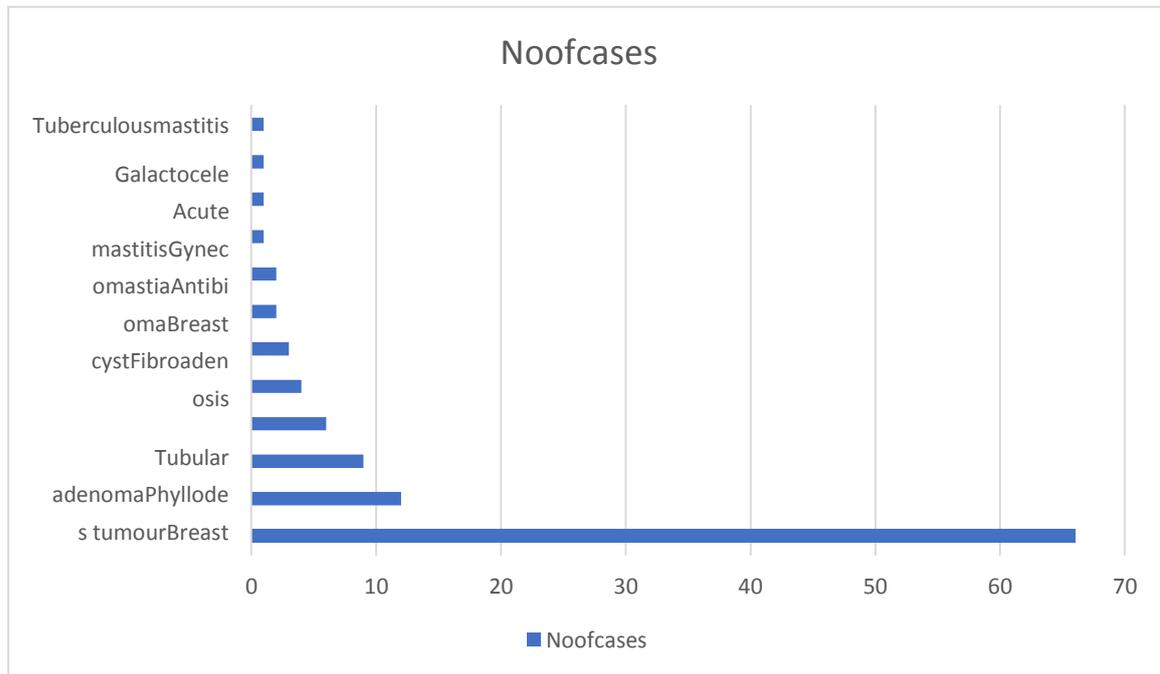


Fig 1-Barchart depicting the incidence of benign breast diseases

In the present study fibroadenoma was the commonest benign neoplasm constituting 66(61.1%) of all cases, followed by fibrocystic disease 12 (11.1%). Next common benign tumour found was breast abscess 9 cases (8.3%), phyllodes tumour were 6 cases (5.6%), tubular adenoma 4 cases (3.7%), fibroadenosis 3 cases (2.8%), breast cyst 2 cases (1.9%) and 2 cases (1.9%) of antibioma were recorded. Single case of gynecomastia (0.9%), acute mastitis (0.9%), galactocele (0.9%), tuberculous mastitis (0.9%) were found.

Table 2: Age-wise distribution of various benign breast disorders

Diagnosis	Age Group			Total
	12-15	16-30	31-45	
Fibroadenoma	3	44	19	66
Fibrocystic disease	0	4	8	12
Breast abscess	0	8	1	9
Phyllodes tumour	0	0	6	6
Tubular adenoma	0	4	0	4
Fibroadenosis	0	2	1	3
Breast cyst	0	1	1	2
Antibioma	0	1	1	2
Gynecomastia	0	0	1	1
Acute mastitis	0	0	1	1
Galactocele	0	1	0	1
Tuberculous Mastitis	0	0	1	1
Total	3	65	40	108

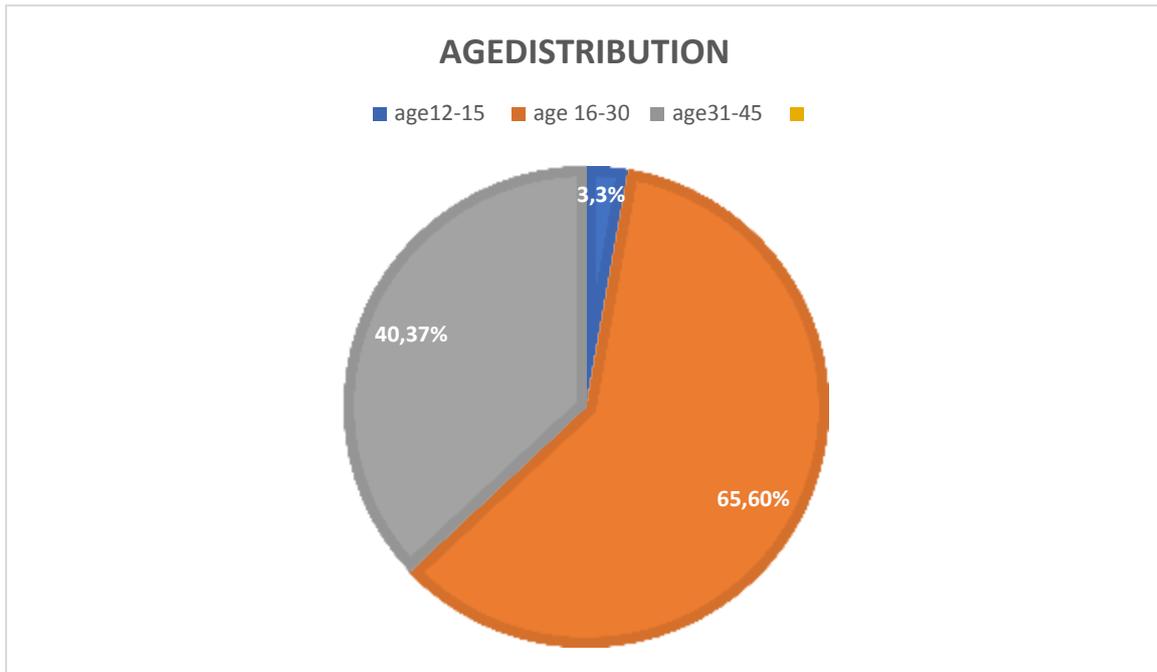


Fig 2-PiechartdepictingtheAgedistributionofbenignbreastdiseases

Mean age of cases in this study was 28.2 years (Minimum15, Maximum-45). Theincidence of fibroadenoma was maximum, i.e. 44 cases (66.6%) in 16 to 30 years of agegroup. Fibrocystic disease (50%) was common in the age group 31-45yrs. Breastabscess(88.8%)iscommonintheagegroupof16-30yrs.Allcasesofphyllodestumour were found in 31 to 45 yrs. Among 3 cases 2 cases (66.66%) of fibroadenosiswere found in (16-30) yrs. A single case of galactocele was seen in 27 years old female,tuberculous mastitis was seen in 37years old female, acute mastitis was seen in 38yearsoldfemale,gynecomastiawasseenin37yearsoldmale.

Table3: Sex incidenceofbenignbreastdisease

GENDER	NO.OFPATIENTS	PERCENTAGE
MALE	01	1.108
FEMALE	107	99.07
TOTAL	108	100

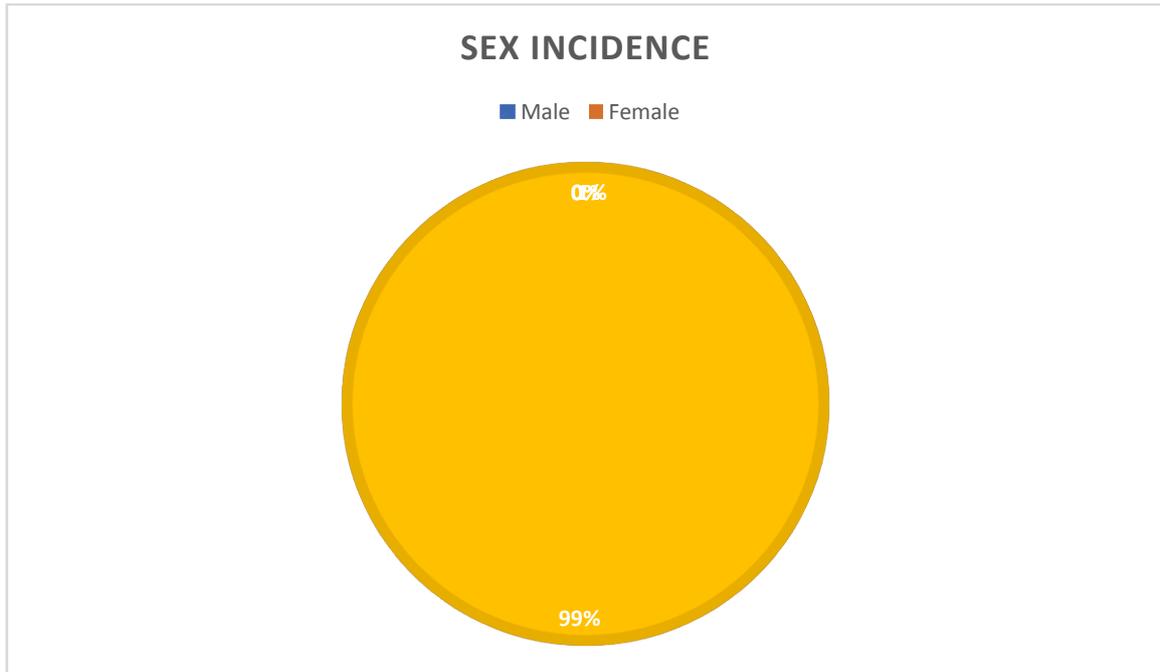


Fig 3-PiechartdepictingtheSex incidenceofbenignbreastdiseases

Itismoreprevalentinfemalepopulationthanmale.Outof108patients1patientweremale(1.108%)and107werefemales(99.07%).

Table4:Durationoflump

Diagnosis	Durationoflump(months)					Total
	0-3	3-6	6-9	9-12	>12	
Fibroadenoma	16	28	14	6	2	66
Fibrocysticdisease	2	2	5	3	0	12
Breastabscess	9	0	0	0	0	9
Phyllodestumor	0	0	4	2	0	6
Tubularadenoma	1	1	0	2	0	4
Fibroadenosis	1	2	0	0	0	3
Breastcyst	1	1	0	0	0	2
Antibioma	1	1	0	0	0	2
Gynaecomastia	0	1	0	0	0	1
Acutemastitis	1	0	0	0	0	1
Galactocele	1	0	0	0	0	1
Tuberculousmastitis	0	0	0	1	0	1
Total	33	36	23	14	2	108

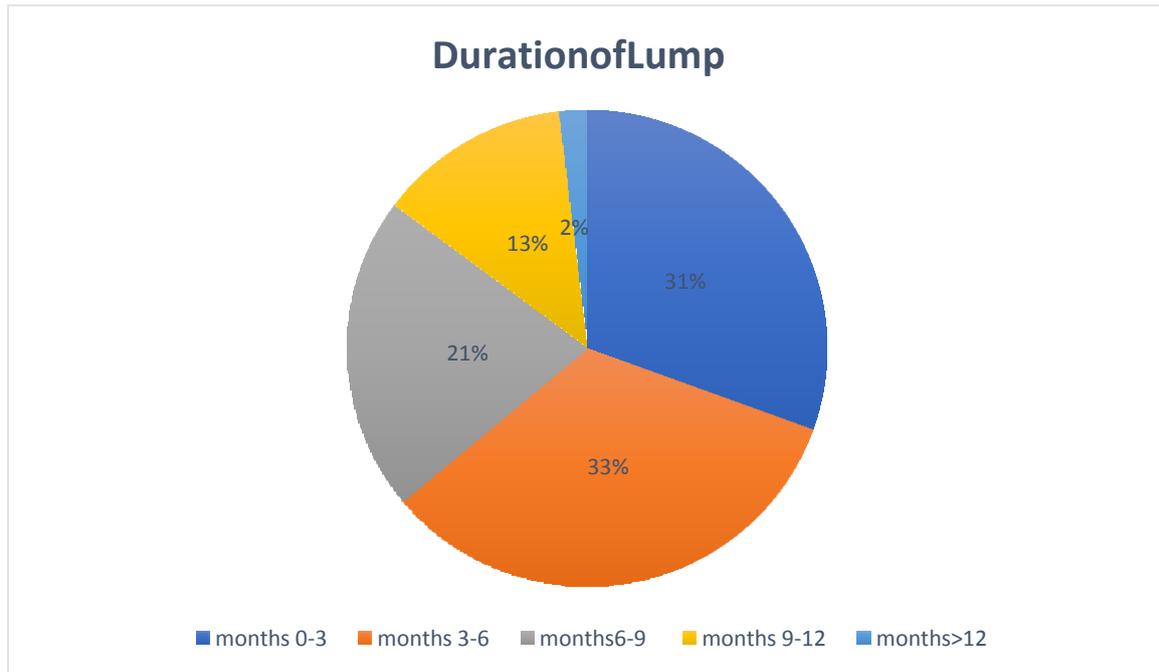


Fig 4-Piechart depicting the duration of lump

In the present study out of 66 cases of fibroadenoma, 28 cases (42.4%) presented with lump of 3-6 months of duration, 16 cases (24.2%) presented with lump of 0-3 months of duration and 14 cases (21.2%) 6-9 months duration. Among 12 cases of fibrocystic diseases 5 cases (41.6%) presented with lump of 6-9 months of duration. All cases of phyllodes tumour presented with lump of 6-12 months of duration. Out of 4 cases of tubular adenoma 2 cases (50%) presented with lump of 9-12 months of duration. All cases of breast abscess and acute mastitis presented with shorter duration. A case of galactocele presented with lump of 2 months duration, a case of gynaecomastia presented with 6 months duration. Among 2 cases of breast cyst one case presented with 5 months duration and another case presented with 3 months duration.

Table 5: Duration of Pain

Diagnosis	Duration of Pain							Total
	0	<1 week	1 week-2 weeks	<1 Month	1-3 months	3-6 months	6-12 Months	
Fibroadenoma	6	0	2	2	0	1	1	66
Fibrocystic disease	3	0	0	0	0	2	7	12
Breast abscess	0	3	6	0	0	0	0	9
Phyllodes tumor	6	0	0	0	0	0	0	6
Tubular adenoma	3	0	1	0	0	0	0	4
Fibroadenosis	0	0	0	0	2	1	0	3
Breast cyst	1	0	0	0	0	1	0	2
Antibioma	2	0	0	0	0	0	0	2
Gynaecomastia	1	0	0	0	0	0	0	1
Acute mastitis	0	0	1	0	0	0	0	1
Galactocele	1	0	0	0	0	0	0	1
Tuberculous Mastitis	0	0	0	0	0	0	1	1
Total	77	3	10	2	2	5	9	108

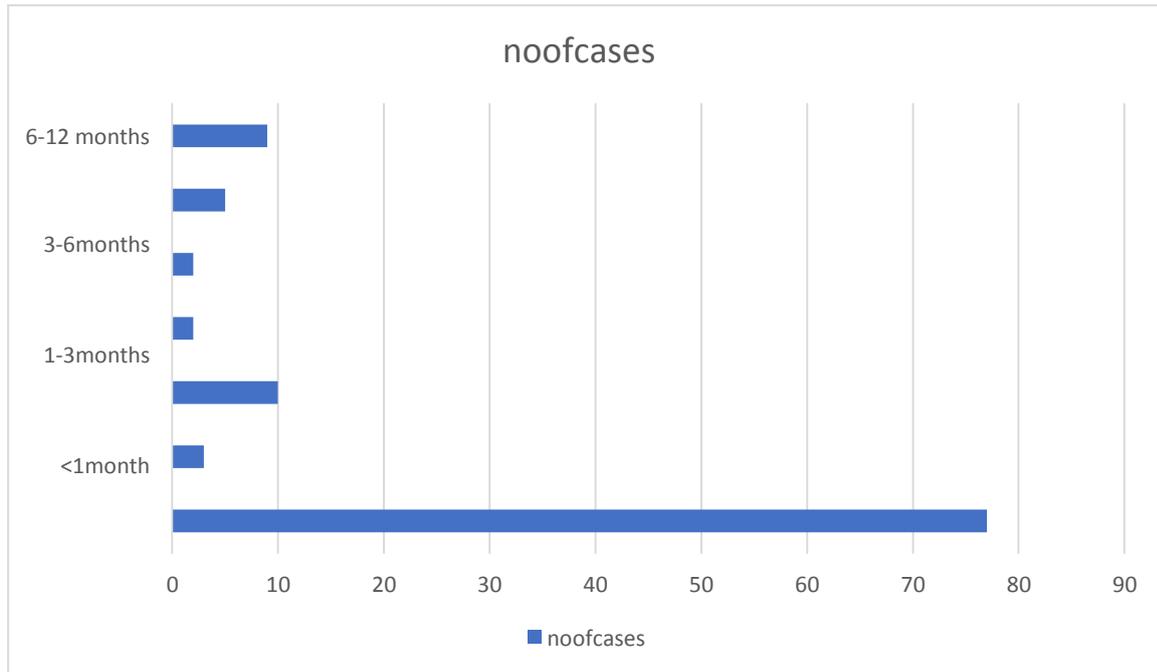


Fig5: Bar chart showing duration of lump

Among 66 cases of fibroadenoma 60 cases (90.9%) presented with painless lump. All cases of breast abscess presented with shorter duration of pain. All cases of phyllodes tumour and most of the cases (75%) of tubular adenoma presented as painless lump.

Table 6: Histological and cytological correlation

Sl No	Histological Diagnosis	Cytological Diagnosis							Total
		INC	FBC	PHY	SUP	FBC/EH	EPH	FBA	
1	FBA	0	0	0	0	0	0	59	59
2	GyM	1	0	0	0	0	0	0	1
3	PHY	0	0	4	0	0	1	1	6
4	FBA/EH	0	0	0	0	0	0	2	2
5	TBM	0	0	0	0	0	0	1	1
6	TUA	0	1	0	0	0	0	3	4
7	FBC	3	8	0	0	0	0	1	12
8	SUP	0	0	0	2	0	0	0	2
9	FAS	0	0	0	0	1	0	2	3
10	FBA/AS	0	0	0	0	0	0	1	1
11	FBC/FBA	1	1	0	0	0	0	2	4

In histologically documented cases of fibroadenomas (66), a consistent cytological report was available in all 66 cases (100%). Among 6 cases of proven phyllodes tumour, four cases (66.6%) were consistent with cytological report and all were benign in nature. One case (16.6%) was found as epithelial hyperplasia, another one (16.6%) found as fibroadenoma on cytology.

Among 12 cases of histologically proven fibrocystic disease, 8 cases (66.6%) were consistent with cytological report. 3 cases (25%) reported as inconclusive and one case (8.3%) reported as fibroadenoma.

Among 3 cases of fibroadenoma one case reported as fibrocystic disease with epithelial hyperplasia, another 2 cases reported as fibroadenoma.

Among 4 cases of tubular adenoma, 3 cases were found as fibroadenoma, one case was reported as fibrocystic disease. Histologically proven 2 cases (100%) of suppurative inflammation were consistent

ntwithcytologicalreport.

V. DISCUSSION

In this present study predominant benign breast tumour was fibroadenoma occurring in 61.1% of cases. Fibroadenoma was the predominant tumour in benign breast diseases studied by Rangabashyam et al.,⁴ (57%) in 1983, Khanna et al.,⁵ (40.8%) in 1988. The next common benign tumours in this study were fibrocystic disease 11.1%, breast abscess 8.33%, phyllodes tumour 5.5%. The pathological types of benign breast lesions encountered in the present study are similar to other reports but their relative incidences show some ethnic variations.

In Indian women as reported by Ranga Bashyam et al.,⁴ Khanna et al.,⁵ as well as in the present studies and in Black Populations, fibroadenoma accounted for maximum cases of benign breast disease whereas white females, the fibrocystic disease was the commonest benign lesion.

Age incidence encountered in the present study was almost similar to the study conducted by Khanna et al.,⁵ Krishnaswamy et al.⁶ with respect to fibroadenoma and fibrocystic diseases. Fibroadenoma was common in age group of 21-30 years and fibrocystic disease was common in the age group of 31-40 years. Fibroadenoma was common during the age group of 21-30 years which is similar to study conducted by Kumar et al.,⁷ In present study among six cases of phyllodes tumours three cases (50%) were found between 31-40 years age group and another three cases (50%) were found between 41 – 45 years age group.

The presentation of patients was comparable to study conducted by Shirley et al.⁸ at Jamaica which was also a clinicopathological study. In the study conducted by Sandhya P. Iyer⁹ all patients presented with lump as their chief complaint and 50% also had pain at the time of presentation. The most common symptom of benign breast tumours in this present study was presence of painless lump. In fibroadenoma group, out of 66 patients 60 patients [90.9%] presented with painless lump, whereas 6 patients [9.09%] presented with painful breast lump. Pain was dull aching, non-

radiating, continuous and not in relation to menstruation. All three cases of fibroadenoma presented as painful lump which was related to menstruation. Among 12 cases of fibrocystic disease nine cases (75%) presented with painful lump and three cases presented with painless lump which was related to menstruation. All six cases of phyllodes were presented with painless lump. All cases of breast abscess were presented with painful diffuse lump with fever. All cases of breast abscess, acute mastitis were presented with enlarged mobile, firm, tender axillary nodes.

Most of the fibroadenoma (42.4%) presented as lump breast with the duration of 3-6 months, 16 (24.2%) cases with duration of 0-3 months and 14 (21.2%) cases with the duration of 6-9 months. Among 12 cases of fibrocystic disease 5 cases (41.6%) presented with duration of 6-9 months, 3 cases (25%) with 9-12 months duration, 4 cases (33.3%) 0-6 months duration. All cases (100%) of phyllodes tumour presented with duration of 6-12 months. Among 3 cases of fibroadenoma each case presented with 3 months, 5 months, 6 months duration respectively.

Findings noted in the study conducted between Hand U et al.¹⁰ and findings of the present study were almost similar with respect to fibroadenoma. In the present study cytological diagnosis as fibroadenoma was 72, among which 66 (91.6%) were proved to be fibroadenoma on biopsy, which is similar to the study conducted by Hand U et al.,¹⁰ where cytological diagnosis as fibroadenoma was 29 among which 26 (89.6%) were to be fibroadenoma on biopsy.

One case was inconclusive on cytological study, which was diagnosed as chronic mastitis on histology. In the present study, one case of fibrocystic disease, 2 cases of fibroadenoma and one case of phyllodes tumour, 3 cases of fibroadenoma were diagnosed by biopsy which were diagnosed as fibroadenoma on cytological study.

In the present study cytologically diagnosed ten cases of fibrocystic disease 8 cases (80%) were proved as fibrocystic and one was tubular adenoma and another one was fibroadenoma with fibrocystic disease on biopsy. Among six cases of phyllodes tumour four cases identified as phyllodes tumour (66.6%), one as fibroadenoma and another one as epithelial hyperplasia on cytology.

VI. SUMMARY

In this present study we studied 108 cases of breast diseases, which includes both benign breast tumours and inflammatory lesions.

They have been studied with respect to their incidence, clinical presentation, pathology and cytological correlation.

Fibroadenoma was the predominant breast tumour occurring in (61.1%) cases. The next common tumours were fibrocystic disease occur in (11.1%), Breast abscess

8.3%, phyllodes tumour (5.6%), tubular adenoma (3.7%), and fibroadenosis (2.8%). We found two cases of breast cyst, two cases of anti-bioma and single case of gynaecomastia (0.9%), Acute mastitis (0.9%), Galactocele (0.9%), Tuberculous Mastitis (0.9%).

Majority of the fibroadenoma (66.6%) cases were found in the age group of 16-30 years. Fibrocystic disease was maximum (50%) in 31-45 years of age. All 6 cases of phyllodes tumour were found in 3rd and 5th decades.

Youngest patient in our study was 15 years oldest was 45 years and the standard deviation was 10.

Acute mastitis was seen in a 38-year-old female patient who was not lactating.

For majority of fibroadenoma cases (42.4%) duration of lump was between 3-6 months.

Majority of fibrocystic diseases (41.6%) presented with lump between 6-9 months of duration.

Commonest mode of presentation of most of our benign breast tumours was painless lump in the breast. 90.9% of fibroadenoma, 25% of fibrocystic disease and all cases of phyllodes tumour presented as painless tumour.

All cases of fibroadenosis presented with painful breast lump.

Our study indicates that FNAC is a diagnostically accurate procedure, which is indicated by following statistics. Along with sensitivity and specificity, the performance of a screening test is measured by its "Predictive value" which reflects the diagnostic power of the test.

Sensitivity and specificity and predictive value for positive and negative test for common benign breast tumour areas follows.

Table 20: Sensitivity and Specificity of FNAC

Diagnosis	Sensitivity	Specificity	PPVPT	PPVNT	FN	FP
Fibroadenoma	96.9	72.4	88.8	91.3	3	27.5
Fibrocystic disease	66.6	98	80	95.4	33.3	2.4
Phyllodes tumor	66.6	100	100	97.8	33.3	0

Above findings suggest FNAC of the benign breast tumours is diagnostically accurate.

In the present study predictive value of positive test for fibroadenoma and fibrocystic disease almost similar to the study conducted by Hand U.¹⁰ and others.

However, when FNAC was inconclusive, biopsy is the ultimate choice for breast tumours. An excision is an adequate and effective treatment for most of the benign breast tumours.

VII. CONCLUSION

In this present study totally 108 cases of benign breast diseases.

Among this, the most common benign breast tumour found was fibroadenoma (61.1%) and majority of the fibroadenomas found in the 2nd decade of life.

Next common tumour found was fibrocystic disease (11.1%) and most of the cases found in 31-45 years age group.

Majority of benign breast lesions presented with painless lump in the breast except fibroadenosis, breast abscess, acute mastitis, breast cyst and tuberculous mastitis.

Sensitivity of cytology for fibroadenoma was 96.9% and specificity was 72.4%. False negativity was 3%.

For fibrocystic disease, sensitivity of cytology was 66.6% and specificity was 98%. False negativity was 33.3%.

Statistical study regarding FNAC suggests that FNAC is an accurate procedure with respect to benign breast diseases, especially for fibroadenoma.

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