

Clinico-Pathological Study of Benign Breast Diseases in a Tertiary Care Hospital**Manish Khandelwal¹, Komal Meena², Anil Meena³, Manoj Kumar Gupta⁴, Rakesh Kumar Sharma⁵**¹Assistant Professor, Department of Surgery, Government Medical College Kota²Assistant Professor, Department of Surgery, Government Medical College Kota³Assistant Professor, Department of Surgery, Government Medical College Kota⁴Assistant Professor, Department of Surgery, Government Medical College Kota⁵Sr. Professor, Department of Surgery, Government Medical College Kota

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Corresponding Author: Dr. Manoj Kumar Gupta

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Abstract:**Background:** Benign breast diseases (BBD) are a heterogeneous group of disorders significantly more prevalent than breast cancer. They represent a critical area of concern due to their high incidence and the anxiety they cause among patients. Understanding the clinico-pathological features of BBD is essential for accurate diagnosis and management.**Methods:** A prospective study was conducted on 60 female patients presenting with breast complaints at Govt. Medical College & Hospital, Kota, from February 2020 to December 2021. Detailed history, clinical examination, and relevant investigations including Fine Needle Aspiration Cytology (FNAC) and mammography were performed. Surgical interventions were carried out when indicated, and excised specimens were subjected to histopathological examination.**Results:** The most common BBD was fibroadenoma (48%), followed by fibroadenosis (30%). The majority of patients were between 21-30 years of age. The right breast was more frequently involved (61.66%), with the upper outer quadrant being the most common site (38.33%). Lump in the breast was the predominant symptom, with 50% presenting with painless lumps. Surgical excision was the mainstay of treatment in 83.33% of cases. Histopathological examination confirmed the clinical diagnoses. No recurrences were noted during the follow-up period.**Conclusion:** Fibroadenoma and fibroadenosis are the most common benign breast diseases among women in the reproductive age group. Clinical examination, supported by imaging and histopathology, is crucial for accurate diagnosis. Surgical excision remains the primary treatment modality, with excellent outcomes.**Keywords:** Benign breast diseases, Fibroadenoma, Fibroadenosis, and Breast lump, Histopathology, Surgical excision.

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Introduction

The breast is a dynamic organ undergoing continuous physiological changes throughout a woman's reproductive life, including cyclical variations during the menstrual cycle. Benign breast diseases (BBD) encompass a heterogeneous group of conditions that range from developmental anomalies and inflammatory lesions to benign neoplasms. These conditions are at least ten times more common than breast cancer and represent the most frequent cause of breast problems [1].

BBD significantly impact women's health due to their high incidence and the anxiety they provoke owing to the fear of malignancy [2]. Studies indicate that up to 30% of women may require treatment for BBD at some point in their lives [3].

The increasing public awareness and improved diagnostic facilities have led to a higher rate of referrals to specialized breast clinics, with a malignant to benign ratio of approximately 1:10 [4]. Understanding the clinico-pathological spectrum of BBD is essential for clinicians to differentiate benign conditions from malignancies, thereby preventing unnecessary anxiety and interventions [5].

Accurate diagnosis relies on a combination of clinical evaluation, imaging techniques, cytology, and histopathological examination [6]. Moreover, certain benign lesions have been associated with an increased risk of subsequent breast cancer, necessitating vigilant surveillance [7]. This study

aims to analyze the age distribution, clinical presentation, and histopathological correlation of various BBDs in patients presenting to a tertiary care hospital. By evaluating the modes of management and outcomes, the study seeks to enhance understanding of these conditions and contribute to better patient care.

Materials and Methods

Study Design and Setting: This was a prospective observational study conducted at the Government Medical College & Hospital, Kota, over a period of 22 months from February 2020 to December 2021.

Study Population: A total of 60 female patients presenting with breast complaints were included in the study. Inclusion criteria comprised women with complaints of breast pain, presence of a breast lump, or nipple discharge. Exclusion criteria were patients diagnosed with carcinoma of the breast, inflammatory breast diseases, and gynecomastia.

Data Collection: Patients were evaluated through detailed history taking and thorough clinical examination. Relevant investigations were performed, including Fine Needle Aspiration Cytology (FNAC) for palpable lesions and mammography for patients with nodular breasts, nipple discharge, non-cyclical mastalgia, and those over 35 years of age.

Surgical Intervention: Patients with palpable lesions underwent surgical excision. The type of surgery performed included excision, wide excision, or simple mastectomy, depending on the clinical diagnosis and intraoperative findings.

Histopathological Examination: Excised specimens were sent for histopathological examination to confirm the diagnosis. Histopathological types were classified according to standard criteria.

Statistical Analysis: Data were analyzed using statistical proportion tests. Variables such as age distribution, type of benign breast disease, clinical presentation, and histopathological findings were tabulated and analyzed.

Ethical Considerations: Informed consent was obtained from all patients participating in the study. The study protocol was approved by the institutional ethics committee, and patient confidentiality was maintained throughout the study.

Results

A total of 60 female patients with benign breast diseases were studied. The age of patients ranged from less than 20 years to over 50 years, with the majority (51.66%) falling within the 21-30 years age group. The most common benign breast disease encountered was fibroadenoma, constituting 48% (29 cases) of the total, followed by fibroadenosis at 30% (18 cases). Other lesions included galactocele (7%), traumatic fat necrosis (5%), cystosarcoma phyllodes (5%), benign breast cyst (3%), and duct ectasia (2%).

Clinical Presentation: Clinically, the predominant symptom was the presence of a breast lump, reported by all patients. Painless lumps were noted in 50% of cases, while the remaining presented with painful lumps. Nipple discharge was observed in 6.66% of cases. The right breast was more commonly affected (61.66%) compared to the left (36.66%), and bilateral involvement was noted in 1.66% of cases. The upper outer quadrant was the most frequently involved site (38.33%).

Duration of Symptoms: The duration of symptoms among patients varied widely. In cases of fibroadenoma, 31% presented between 7 months to 1 year, 28% between 4-6 months, 24% between 1-3 months, and the remaining presented after more than one year.

Fibroadenosis cases predominantly presented within the first six months of symptom onset, with 33% presenting between 1-3 months. The earlier presentation in fibroadenosis may be attributed to the associated pain and discomfort prompting patients to seek medical attention sooner.

Age-wise Distribution

Table 1: Age-Wise Distribution of Benign Breast Diseases

Type	<20 years	21-30 years	31-40 years	41-50 years	>50 years	Total
Fibroadenoma	9	14	5	1	0	29
Fibroadenosis	3	11	3	1	0	18
Galactocele	0	3	1	0	0	4
Traumatic Fat Necrosis	0	1	2	0	0	3
Benign Breast Cyst	0	1	1	0	0	2
Cystosarcoma Phyllodes	0	0	1	2	0	3
Duct Ectasia	0	1	0	0	0	1
Total	12	31	13	4	0	60

Side and Quadrant Involvement: In terms of lateralization, the right breast was more commonly involved (61.66%), with 37% of cases involving the left breast and 1.66% showing bilateral involvement. Fibroadenoma

cases showed a slight predominance on the right side (51.72%), while fibroadenosis also favoured the right breast (61.11%). Galactocele predominantly affected the left breast (75%).

Table 2: Quadrant Involvement in Benign Breast Diseases

Quadrant	Number of Cases	Percentage (%)
Upper Outer Quadrant	23	38.33
Upper Inner Quadrant	12	20
Lower Outer Quadrant	10	16.66
Lower Inner Quadrant	5	8.33
Central	2	3.33
More than One Quadrant	5	8.33
Bilateral	1	1.66
Total	60	100

Size of Lesions: The sizes of the breast lumps ranged from 1 cm to 8 cm in diameter. Most lesions (73.33%) measured between 2 cm and 5 cm. Lesions larger than 5 cm were less common and included cases of cystosarcoma phyllodes and giant fibroadenomas.

Clinical Symptoms

Table 3: Clinical Presentation of Benign Breast Diseases

Diagnosis	Number	Painless Lump	Painful Lump	Nipple Discharge
Fibroadenoma	29	21	8	0
Fibroadenosis	18	10	8	1
Galactocele	4	4	0	2
Traumatic Fat Necrosis	3	2	1	0
Benign Breast Cyst	2	1	1	0
Cystosarcoma Phyllodes	3	0	3	0
Duct Ectasia	1	0	1	1

Mammography Findings

Mammography was performed in 15% of patients, primarily those over 35 years of age or with suspicious findings. The mammograms were categorized according to the BI-RADS classification. Four cases were categorized as BI-RADS 2, indicating benign findings, while five cases were categorized as BI-RADS 3, suggesting probably benign findings. These included cases of fibroadenoma, fibroadenosis, duct ectasia, cystosarcoma phyllodes, and benign breast cysts.

Treatment Modalities

Out of 60 patients, 50 (83.33%) underwent surgical intervention. The most common surgical procedure was simple excision or enucleation (88%), performed in cases of fibroadenoma, fibroadenosis, galactocele, and traumatic fat necrosis. Wide excision was performed in 6% of cases, including traumatic fat necrosis and larger lesions. Simple mastectomy was performed in 6% of cases, all of which were cystosarcoma phyllodes due to their size and potential for recurrence.

Table 4: Treatment Modalities

Diagnosis	Number of Cases	Surgical	Conservative
Fibroadenoma	29	26	3
Fibroadenosis	18	11	7
Galactocele	4	4	0
Traumatic Fat Necrosis	3	3	0
Benign Breast Cyst	2	2	0
Cystosarcoma Phyllodes	3	3	0
Duct Ectasia	1	1	0
Total	60	50	10

Conservative management was employed in 16.66% of patients, mainly those with fibroadenosis and small fibroadenomas.

These patients were treated with medications and regular follow-up to monitor any progression.

Menopausal Status

The vast majority of patients (96.66%) were premenopausal, reflecting the higher incidence of BBD in younger women. Only 3.33% of patients were postmenopausal, indicating that benign breast

diseases are less common after menopause due to decreased hormonal stimulation.

Follow-Up: Follow-up was conducted in 38.33% of patients over a period ranging from one week to one year. No recurrences or significant complications were observed during this period. Patients were advised on breast self-examination and the importance of regular follow-up.

Discussion

Benign breast diseases represent a significant proportion of breast pathologies encountered in clinical practice. In this study, fibroadenoma was the most common benign breast lesion, accounting for 48% of cases. This finding is consistent with other studies where fibroadenoma is reported as the predominant benign breast disease [8][9]. The higher incidence of fibroadenoma among younger women, particularly in the 21-30 years age group, reflects the hormonal influences during the reproductive period [10].

Fibroadenosis, also known as fibrocystic disease, was the second most common lesion (30%). This condition is characterized by lumpy, painful breasts, often associated with cyclical mastalgia. The prevalence of fibroadenosis in this study aligns with previous reports indicating its common occurrence in women of reproductive age [11]. The clinical differentiation between fibroadenoma and fibroadenosis can be challenging due to overlapping features, underscoring the importance of imaging and histopathological confirmation [12]. Galactoceles, traumatic fat necrosis, benign breast cysts, cystosarcoma phyllodes, and duct ectasia were less commonly encountered. The incidence of cystosarcoma phyllodes (5%) is notable, as these tumors can exhibit borderline or malignant behavior [13]. Early recognition and appropriate surgical management are essential to prevent recurrence and potential malignant transformation [14].

The right breast was more commonly affected in this study, with the upper outer quadrant being the most frequent site of lesions. This distribution pattern is consistent with the literature, where the upper outer quadrant is reported as the most common site for both benign and malignant breast lesions [15]. The higher glandular tissue density in this quadrant may account for the increased incidence [16].

The correlation between clinical and histopathological diagnoses was high, emphasizing the reliability of clinical examination supported by FNAC and imaging studies. Mammography was particularly useful in patients over 35 years of age and those with nodular breasts or nipple discharge. The role of FNAC in the initial assessment of breast lumps cannot be overstated, as it provides a

minimally invasive method for obtaining a cytological diagnosis [17]. Surgical excision was the primary treatment modality, performed in 83.33% of cases. This approach is justified in symptomatic patients and those with suspicious or enlarging lesions [18]. Conservative management was reserved for selected cases with small, asymptomatic fibroadenomas and fibroadenosis responsive to medical therapy. The absence of recurrences during the follow-up period suggests that appropriate surgical intervention yields favorable outcomes.

Conclusion

Benign breast diseases, particularly fibroadenoma and fibroadenosis, are prevalent among women in their reproductive years. Accurate diagnosis through clinical evaluation, imaging, and histopathological examination is essential for effective management. Surgical excision remains the cornerstone of treatment for most benign lesions, with excellent prognostic outcomes. Increased awareness and early intervention can alleviate patient anxiety and improve quality of life.

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