

## Clinicopathological evaluation of Benign Breast diseases- A Retrospective study in a medical college teaching hospital in Mandya

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### Abstract

**Background:** Benign breast diseases are a neglected entity in developing countries despite the fact that they constitute the majority of breast complaints. Background knowledge of general features of individual breast diseases like incidence, age distribution, symptoms and examination findings are essential for the correct diagnosis of breast diseases.

**Methods:** A retrospective hospital-based descriptive study was conducted in the Department of Pathology, Mandya Institute of Medical Sciences, Mandya, over a period of five years from January 2011 to December 2015. The clinico-pathological details of the cases were obtained from medical records section and department records.

**Results:** A total of 120 women patients were included in the study during the five years. The age of the patients ranged between 13-50 years with mean of 31.5 years. Majority of the patients were in the age group of 20-30 years (41.7%, 50/120). Breast lump was the most frequent presentation followed by pain in the breast. Fibroadenoma was the most common lesion, seen in 66 of patients (55%), followed by fibrocystic diseases (24.2%), fibroadenoma with fibrocystic changes (7.5%), granulomatous mastitis (3.3%), benign phyllodes tumour (3.3%); 1 case each of fat necrosis, epidermal cyst, seborrhic keratosis, breast abscess, fibroepithelial polyp, tubular adenoma, hematoma and acute-on-chronic mastitis.

**Conclusion:** Benign breast diseases are more common than malignancies of the breast in women and mainly seen in young women of age less than 30 years. Fibroadenoma is the commonest lesion followed by fibrocystic change. Although certain lesions like epidermal cyst, seborrhic keratosis and fibroepithelial polyp are rare, the pathologist needs to consider them as a differential diagnosis in certain cases and thus, histopathology plays a crucial role in the final diagnosis of benign breast diseases.

**Keywords:** Benign breast diseases, Fibroadenoma, Fibrocystic disease, young women.

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### Introduction

Breast cancer is the most common malignancy in Indian women with an incidence of 20 per one lakh population. However, benign breast lesions (BBD) constitute the majority of breast diseases in comparison to malignant lesions, yet, they are a neglected entity.<sup>(1)</sup>

Benign breast diseases constitute a spectrum of lesions ranging from developmental abnormalities, inflammatory lesions and epithelial and stromal proliferations to various neoplasms. Some of the benign lesions mimic malignancy and therefore, require a careful evaluation as the therapeutic modalities and prognosis vary considerably.

It is important for pathologists, radiologists, and oncologists to recognize benign lesions to distinguish them from in-situ and invasive breast cancers and also to assess a patient's risk of developing breast cancer, so that the most appropriate treatment modality for each case can be established.<sup>(1)</sup>

The incidence of these diseases begins to rise during the second decade with a peak incidence in the fourth & fifth decade of life and is thought to be largely hormonally induced. The most common presenting symptoms are breast pain and palpable lumps followed by nipple discharge, nipple deformity such as retraction and occasional skin changes.

Benign epithelial lesions are classified into three

groups, according to the subsequent risk of developing breast cancer:

- 1) Non-proliferative breast changes,
- 2) Proliferative breast disease without atypia
- 3) Proliferative disease with atypia.

Non-proliferative changes do not increase the risk of developing cancer whereas proliferative disease without atypia is associated with 1.5-2 fold increased risk and proliferative disease with atypia confers 4-5 fold increased risk of developing breast cancer.<sup>(2)</sup> Even though proliferative breast disease and atypical hyperplasia are seen in one breast, both breasts are equally at increased risk of developing cancer. Risk reduction can be achieved by bilateral prophylactic simple mastectomy or treatment with estrogen antagonists, such as tamoxifen.<sup>(2)</sup>

The investigation of palpable breast lumps in successful breast programs utilizes a multidisciplinary approach that centres on the 'triple test', analysing clinical and radiologic findings in conjunction with the pathologic features to diagnose the lesion and determine the best treatment plan for the patient.<sup>(3)</sup>

The present study was undertaken to study the spectrum of histopathological changes of benign breast lesions in a medical college teaching hospital.

## Materials and Methodology

This retrospective hospital-based descriptive study was conducted in the Department of Pathology, Mandya Institute of Medical Sciences, Mandya, over a period of five years from Jan 2011 to Dec 2015 following due consent from the institutional ethical committee. Clinical details of the cases were obtained from medical records section. The samples were processed by standard procedures using 10% neutral buffered formalin. The representative tissue bits were routinely processed. The paraffin embedded blocks were used to cut 4 micron sections. The sections were stained by Hematoxylin and Eosin and reviewed.

## Results

A total of 120 female patients were included in the study during the five years from January 2011 to December 2015. In the present study, age of the patients ranged between 13-50 years with the mean of 31.5 years. Majority of the patients were in the age group of 20-30 years (41.7%, 50/120). Breast lump was the most frequent presentation, which was followed by pain in the breast. Fibroadenoma was the most common BBD which was seen in 66 of patients (55%), which is followed by fibrocystic diseases (24.2%), fibroadenoma with fibrocystic changes (7.5%), granulomatous mastitis (3.3%), benign phyllodes tumour (3.33%) and 1 case each of fat necrosis, epidermal cyst, seborrheic

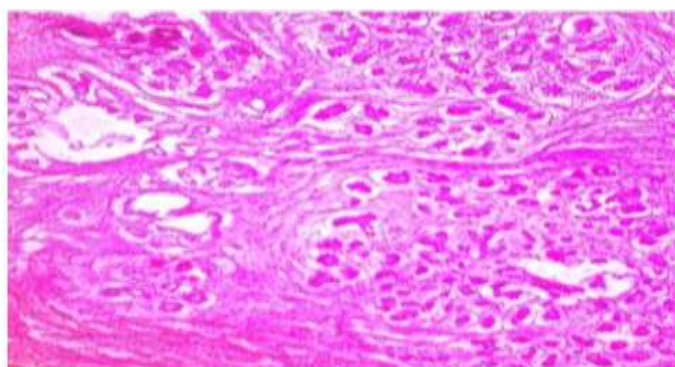
keratosis, breast abscess, fibroepithelial polyp, tubular adenoma, hematoma and acute-on-chronic mastitis. (Table 1 & 2)

**Table 1: Table showing incidence of various benign breast lesions**

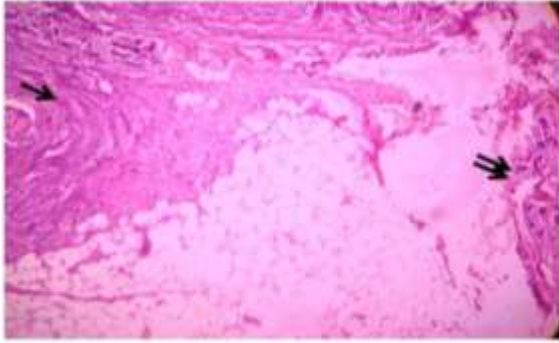
Diagnosis	Number of cases	% of cases
Fibroadenoma	66	55%
Fibrocystic disease	29	24.2%
Fibroadenoma with fibrocystic diseases	9	7.5%
Granulomatous mastitis	4	3.3%
Benign phyllodes	4	3.3%
Fat necrosis	1	0.8%
Tubular adenoma	1	0.8%
Hematoma	1	0.8%
Acute on chronic non-specific mastitis	1	0.8%
Breast abscess	1	0.8%
Seborrheic keratosis	1	0.8%
Fibroepithelial polyp	1	0.8%
Epidermal cyst	1	0.8%
Total	120	

**Table 2: Table showing age wise distribution of benign breast lesion**

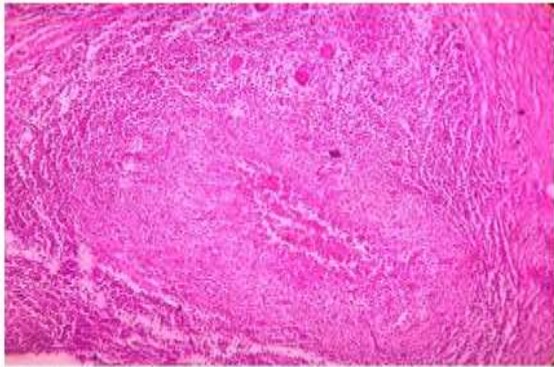
Diagnosis	<20	21-30	31-40	41-50	Total
Fibroadenoma	10	28	22	6	66
Fibrocystic disease	1	12	9	7	29
Fibroadenoma with fibrocystic diseases	1	2	6	0	9
Granulomatous mastitis	1	2	1	0	4
Benign phyllodes	0	1	0	3	4
Fat necrosis	0	1	0	0	1
Tubular adenoma	0	0	0	1	1
Hematoma	1	0	0	0	1
Acute on chronic non-specific mastitis	0	0	1	0	1
Breast abscess	0	0	0	1	1
Seborrheic keratosis	0	1	0	0	1
Fibroepithelial polyp	0	0	1	0	1
Epidermal cyst	0	0	1	0	1
Total	14	47	41	18	120



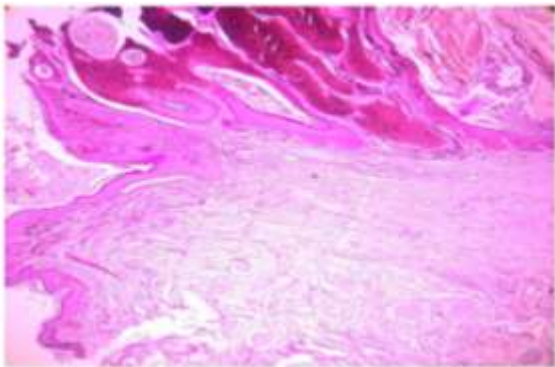
**Fig. 1: Microphotograph of Tubular adenoma (H&E, X10)**



**Fig. 2: Microphotograph of Granulomatous mastitis showing the lesion in the breast tissue (H&E, X4)**



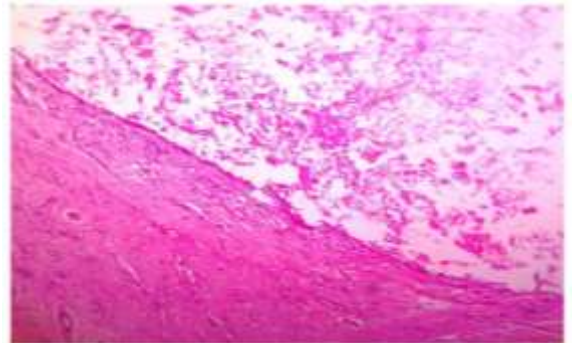
**Fig. 3: Microphotograph of Granulomatous mastitis showing the lesion (H&E, X10)**



**Fig. 4: Microphotograph of Seborrheic Keratosis (H&E, X4)**



**Fig. 5: Cut section of the epidermal inclusion cyst containing pultaceous material**



**Fig. 6: Microphotograph showing epidermal inclusion cyst and breast parenchyma in the wall (H&E, X10)**

### Discussion

The breast appears structurally and functionally to be relatively uncomplicated, but it is a site of a surprisingly broad array of pathologic alterations. In the recent times, breast lesions have assumed increased importance because of the public awareness of breast cancer and also due to recognition of new entities in breast pathology. Among these, breast cancers take precedence over BBD due to their sinister nature and prognosis. The correct distinction of benign from malignant lesions is crucial for the correct management of these lesions. Thus, background knowledge of general features of individual breast diseases like incidence, age distribution, symptoms and examination findings are important for the correct diagnosis of breast diseases.

Fibroadenoma is a benign biphasic tumour occurring most frequently in women of childbearing age especially those under 30. It most commonly presents as a painless, solitary, firm slowly growing mobile and well defined nodule. Less commonly, it can arise as multiple nodules involving synchronously or asynchronously same or both breasts and may grow very large mainly in adolescents.<sup>(4)</sup> In our study, Fibroadenoma was the most commonly (55%) encountered entity and it presents as freely mobile discrete lump in the breasts of young females. Our findings were similar to studies done by Abdul Rashid et al,<sup>(5)</sup> Hatim KS et al,<sup>(6)</sup> Bagale et al<sup>(7)</sup> and Prajapati et al.<sup>(8)</sup> We had a single case of an adolescent female presenting with multiple fibroadenomas involving both breasts.

Fibrocystic disease was the second most common (24.2%) finding in the present study. The majority of the patients with fibrocystic disease were in 3<sup>rd</sup> decade (41.3%), in contrast to the study by Chaudhary et al<sup>(9)</sup> in which majority of patients were in the 4<sup>th</sup> decade. The difference between the age group in patients with fibrocystic disease may be due to studies conducted in different geographical areas. The other possible reasons being social customs, age at menarche, parity, breast feeding, use of contraceptive pills and self-awareness.

Phyllodes tumour shares many features with fibroadenoma, but they are more likely to recur; some are locally aggressive and can even metastasize and generally occur in an older age group than fibroadenoma. In our study we found 4 cases, out of which three presented in the women who were above 40 years and 1 case presented in a 27 year old woman. This is in concordance with study done by Ohene-Yeboah et al.<sup>(10)</sup> However our study was in contrast to study done by Philipo et al,<sup>(11)</sup> where in the patients presented in age less than 20 years as compared to our study.

Epidermal inclusion cyst (EIC) arising from the breast is an uncommon benign condition unlike on other regions like face, trunk, neck, extremities and scalp where it is a common. We found a single case of EIC in the present study period in a 35 year female who presented as breast lump. Clinically it was free from the overlying skin. EIC in breast can be mistaken for any benign and malignant breast lesion both clinically as well as radiologically. The pathogenic mechanisms of EIC in the breast are considered to be congenital, surgical or traumatic. Although it is a rare entity in the breast, it is important to keep this as one of the differential diagnosis in breast lump.

Fibroepithelial stromal polyps (FESP) are benign lesions that typically occur in the genital area and are rarely seen in breast. They are known to represent a diagnostic challenge for pathologists and have a spectrum of morphological changes that range from bland morphology to rather atypical appearances, but they also share morphological features with a number of benign and malignant lesions. In our study we found a single case of FESP in a 40 year women which presented as nipple mass. Similar case was reported by Shaaban et al<sup>(12)</sup> in the year 2013 in a patient of 45 year of age.

Fat necrosis can present as a painless palpable mass, skin thickening or retraction, or mammographic densities or calcifications and it closely mimics cancer. About half of affected women have a history of breast trauma or prior surgery.<sup>(13)</sup> We found a case of fat necrosis in 30 year female which presented as hard lump in the breast with skin retraction.

In our study, four cases of granulomatous mastitis were also noted. Granulomatous reactions can occur in response to infectious etiology, foreign material, or systemic autoimmune diseases such as Sarcoidosis and Wegener's granulomatosis. Identification of the etiology requires microbiologic and immunologic testing in addition to histopathological evaluation. Etiology was not found in our study.

## Conclusion

Benign breast disease is a common spectrum of conditions which affect women of reproductive age group. Majority of them present with breast lump, pain or both. Although other lesions like epidermal cyst, fat

necrosis and fibroepithelial polyp are uncommon, they should be kept as one of the differential diagnosis as they can lead to diagnostic challenges.

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