

Histopathological Spectrum of Benign Lesions of Breast

Mahendra B.*, Ramesh B.H.**

*Assistant Professor **Professor & Head, Department of Pathology, Raichur Institute of Medical Sciences, Raichur, Karnataka. 584101, India.

Abstract

Background: Benign lesions of breast are most common cause of breast problems. Up to 30% of females suffer from benign diseases of breast, requiring treatment at some time in their lives. Benign lesions of breast are 5 to 10 times more common than breast cancer. Many of these lesions are clinically suspected as malignancy but diagnosed as benign after histopathological examination. *Aim:* To study the spectrum of benign lesions of breast & their age and sex distribution. *Inclusion Criteria:* All benign lesions of breast diagnosed on histopathology are included. *Exclusion Criteria:* Malignant lesions of breast. *Materials and Methods:* A retrospective study of 5 years is conducted from 31st December 2015 to 1st January 2011 to determine the spectrum of histopathological patterns in breast lesions received at Department of Pathology, Raichur institute of medical sciences, Raichur, Karnataka. Data for retrospective study is obtained from departmental records, tissue blocks, slides and requisition forms submitted along with specimens. *Results:* A total of 128 breast specimens were received during study period in our department. Benign to malignant ratio was 5.54:1, male to female ratio was 1:20.33. Highest incidence of benign lesions in females was seen between 21-30 years of age. Most common benign lesion was Fibroadenoma (64%), followed by Fibrocystic disease (12.5%). All breast lesions in males were diagnosed as Gynaecomastia with the peak incidence in the age group between 21-30 years. *Conclusion:* The benign breast lesions constituted 85.3%. Benign to malignant ratio was 5.54:1 in females. Fibroadenoma was the most common lesion in the benign group followed by Fibrocystic disease. This histopathological subclassification of benign breast lesions was useful in the management of patients and also carried prognostic value. Identification of benign breast lesions is important as some of them mimic malignancy clinically. Histopathological diagnosis plays an important role in the diagnosis of benign breast diseases.

Keywords: Benign Lesions of Breast; Fibroadenoma; Inflammatory Lesion.

Introduction

The term "benign lesions of breast" comprises a heterogeneous group of lesions that may present a wide range of clinical features or sometimes may be detected as an incidental finding on microscopy. The incidence of benign breast lesions begins to rise during the second decade and peaks in fourth and fifth decades of life [1]. Benign lesions of breast are neglected entity despite the fact that it constitutes the major problems related to breast. Breast malignancy has taken precedence over benign breast disease since it is

more fearsome, although the number of females with benign lesions of breast is substantial [2].

The mammary gland is a unique organ, which is not fully developed at birth, it undergoes cyclical changes in women during her reproductive life. Some of the breast lesions occur during reproductive life where as some occur during menopausal period suggesting relation of these diseases to hormonal stimulation as a causative factor [3].

Breast masses particularly in younger age group are a source of anxiety for the patients and surgeons because of risk of the cancer and the potential cosmetic disfigurement following surgery. Hence their early recognition is important from the viewpoints of treatment and prognosis [4].

Varied types of inflammatory lesions can be seen in breast. Some of them are as a result of infectious agents

Corresponding Author: Mahendra B., Assistant Professor, Department of Pathology, Raichur institute of medical sciences, Raichur, Karnataka 584101, India.
E-mail: drmahendra.bs@gmail.com

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while others do not have well understood etiology. Tuberculosis of the breast is relatively a rare lesion seen in breast with reported incidence varying from 3-4.5% in developing countries like India [5].

Fibroadenoma of the breast is a most common cause of a benign breast lump in premenopausal women. Fibrocystic disease is a histological term that refers clinically to a large group of syndrome presented as lump or lumpiness [6].

For correct diagnosis of breast diseases, knowledge regarding their incidence, age distribution, and other clinical details are very important. Benign lesions of breast are significantly more common than the malignant lesions in developing countries [7].

Materials and Methods

A retrospective study of 5 years is conducted from 31st December 2015 to 1st January 2011 to determine the spectrum of histopathological patterns in breast lesions received at Department of Pathology, Raichur institute of medical sciences, Raichur, Karnataka.

Data for retrospective study is obtained from slides, tissue blocks in department, departmental records, and also requisition forms received along with specimens.

Histopathological examination was done on formalin fixed and paraffin processed tissues from surgically resected specimens and stained by hematoxylin and eosin. Special stains are employed wherever necessary.

Results

A total of 150 breast biopsies were received during study period from Jan 2011 to Dec 2015 in department of pathology. Out of which 128 had benign breast lesions and 22 were malignant lesions (Table 1).

Out of 128 benign lesions 122 were seen in females and 6 cases were seen in males, comprising 95.3% and 04.7% respectively.

All malignant lesions were seen only in females. The benign to malignant ratio in females was 5.54: 1 only.

In the present study we included only benign breast lesions which comprised 128 cases, constituting 85.3%. Out of 128 benign lesions, 122 were seen in females and 06 were seen in males. All 06 lesions in males were diagnosed as Gynaecomastia. Benign lesions of breast were seen in the age group between 15 to 55 years (Table 2).

In the present study Fibroadenoma was the most common benign lesion of breast with 82 cases comprising 67.2% of benign breast lesions in females (Table 3). It was seen in age group ranging from of 15-40 years. Major portion of these lesions were seen between 15-30 years of age group, which constituted 86.4%.

Fibrocystic disease was the second most common benign breast lesion in the present study with 16 cases, comprising 13.1%. It was seen in the age group between 15-40 years. Majority of cases were seen between 21-30 years of age group.

Table 1: Showing distribution of benign and malignant breast lesions

Type of Lesion	Number of Cases	Percentage (%)
Benign	128	85.3
Malignant	022	14.7
Total	150	100

Table 2: Showing Age distribution of different benign breast lesions

Sr. No.	Type of benign breast lesion	11-20yrs	21-30yrs	31-40yrs	41-50yrs	51-60yrs	Total
1	Fibroadenoma	38	30	11	02	01	82
2	Fibrocystic disease	03	08	05	--	--	16
3	Fibroadenosis	--	01	03	01	--	05
4	Benign Phyllodes tumor	02	01	02	02	01	08
5	Sclerosing adenosis	01	01	--	--	--	02
6	Acute mastitis	--	01	03	--	--	04
7	Chronic mastitis	--	02	01	--	--	03
8	Tubular adenoma	--	01	--	--	--	01
9	Lactating adenoma	--	01	--	--	--	01
10	Gynaecomastia	02	04	--	--	--	06
	Total	46	50	25	5	2	128
	Percentage	35.9%	39.0%	19.6%	3.9%	1.6%	100%

Benign phyllodes tumor was the third most common benign lesion of breast with 08 cases, constituting 6.6%. It was seen between 18-55 years of age group with major portion of cases between 40-50 years of age group.

Fibroadenosis was seen in age group of 20-41 years with 5 cases constituting 4.0%.

Acute mastitis was seen in age group of 22-35 years with 4 cases constituting 3.2%.

Chronic mastitis was seen in age group of 30-40 years with 3 cases. 2 of which had chronic non specific

inflammation comprising 1.6% and one case showed caseating granulomatous inflammation compatible with tuberculosis in a 30 year old woman constituting 0.8%.

One case of tubular adenoma and one case of lactating adenoma was seen in 23 year old women comprising 0.8% each (Table 3).

Gynaecomastia was seen in all 06 men with benign breast disease and comprised 4.6% of all benign breast lesions.

Table 3: Showing percentage distribution of various benign lesions

Sr. No.	Type of benign breast lesion	Number of Cases	Percentage of total benign breast lesions(128cases)	Percentage of benign breast lesions among females(122cases)
1	Fibroadenoma	82	64.0	67.2
2	Fibrocystic disease	16	12.5	13.1
3	Fibroadenosis	05	4.0	4.0
4	Benign phyllodes tumor	08	6.3	6.6
5	Sclerosing adenosis	02	1.5	1.7
6	Acute mastitis	04	3.1	3.2
7	Chronic mastitis	03	2.3	2.4
8	Tubular adenoma	01	0.8	0.9
9	Lactating adenoma	01	0.8	0.9
10	Gynaecomastia	06	4.7	--
	Total	128	100%	100%

Discussion

Benign lesions of breast are significantly more common than the malignant lesions in developing countries [7].

Various reasons like illiteracy, social taboo and also unawareness results in delay in diagnosis and treatment of breast diseases in developing countries, especially in malignant lesions as well as in benign lumps in breast [8].

In the present study, 128 breast biopsies were studied over a period of 5 years retrospectively. The spectrum of breast lesions in female patients in our study showed 122 benign lesions and 22 malignant lesions. Priya Bagale et al [9] in their study reported benign lesions in 78.52% and malignant lesions in 21.48%. Similar results were observed by Amr et al [10], Kulkarni et al [11] and Malik et al [12] (Table 4) in their studies.

In the present study Fibroadenoma was the commonest benign lesion of breast with 82 cases comprising 67.2% of benign breast lesions in females.

Priya Bagale et al [9] reported 71.4% and Malik et al [12] reported 55% respectively (Table 5). It was seen in age group ranging from of 15-40 years. Major portion

of these cases in our study were seen between 15-30 years of age group, which is similar to the studies reported by Khanna et al [4] and Iyer SP et al [13], who also reported between 11-30 years of age group. In most of the studies mentioned above, fibroadenoma had the most common age of presentation between 11-30 years [4,5]. Thus, the present study is in comparable with the studies available in the literature [4,5,9,12]. Fibrocystic disease was the second most common benign lesion of breast in the present study comprising 16 cases and accounted for 13.1%. It was seen in the age group 15-40 years. Results were similar to Priya Bagale et al [9] and Rashid et al [14] who reported 14.32% and 17% of cases of Fibrocystic disease respectively. Similarly Amr et al [9] and Malik et al [12] reported maximum incidence of fibrocystic disease between 31-35 years and 18-40 years of age group respectively. Naveen et al [15] reported higher incidence of fibrocystic diseases in their study in females comprising of 36% of cases (Table 6).

In the present study Benign phyllodes tumor was the third most common benign lesion of breast with 08 cases comprising 6.6%. It was seen in age group ranged between 18-55 years. Similarly, Shashikala et al [16] reported an incidence of 4% of benign Phyllodes tumor in their study in the age group between 21-50 years.

Table 4: Showing percentage of benign breast lesions in various similar studies

Serial No.	Study	% of benign breast lesion
1	Amr et al	82.9%
2	Kulkarni et al	80.7%
3	Malik et al	71.6%
4	Present study	85.3%

Table 5: Showing percentage of Fibroadenoma in females in various studies

Serial No.	Study	% of Fibroadenoma in females
1	Priya Bagale et al	71.4%
2	Malik et al	55%
3	Present study	67.2%

Table 6: Showing percentage distribution of Fibrocystic disease in females in various studies

Serial No.	Study	% of Fibrocystic disease
1	Naveen et al	36%
2	Rashid et al	17%
3	Priya Bagale et al	14.32%
4	Present study	13.1%

Fibroadenosis was seen in age group of 20-41 years with 5 cases constituting 4%. Kulkarni et al [11] and Ajao et al [17] reported 4.93% and 4.5% cases of Fibroadenosis respectively.

In the present study, 5.7% of total breast biopsies belonged to inflammatory lesions, which is lower when compared with Amr et al [10] (15.20%) and Malik et al [12] (17.05%). Kulkarni et al [11] observed 8.70% incidence of inflammatory lesions. Incidence of inflammatory lesions varies from place to place as biopsy is not always done in all patients with inflammatory lesions as most of them are treated by incision and drainage, and medical treatment. Breast abscess was the most common inflammatory lesion in our study constituting 3.2%. Priya Bagale et al [9] in their study reported incidence of breast abscess as 6.5% of all benign breast lesions. In present study we found inflammatory lesions between age group 22-40 years, which is similar to study by Priya Bagale et al [9] and Malik et al [12].

In present study, incidence of tuberculosis was found to be 0.8%. Several Indian studies have reported the incidence of breast tuberculosis to vary between 0.04 to 3% amongst the total number of breast lesions [18,19,20]. Similarly Ikard and Perkins [18] and Haagensen [19] observed lower incidence of 0.025% and 0.062% respectively. Shinde et al [20] reported a range of 1- 4.5% of cases. We observed single case of tuberculosis of breast with necrotizing caseating granuloma in a 30 year old woman, which is comparable with incidence reported by Tewari et al [21] (20-40 years of age group) while Goldmann et al [22] reported maximum number of cases in the age group of 20-50 years.

Conclusion

The benign lesions of breast in our study constituted 85.3%. Benign to malignant ratio was 5.4:1 in females. 97.3% of cases were seen in females and 4.7% in males. All male breast lesions were diagnosed as Gynaecomastia and the peak incidence was observed in the age group between 21-30 years. Fibroadenoma was the most common benign lesion of breast in females, which is followed by Fibrocystic disease. Histopathological subclassification of various benign lesions of breast was useful in the management of patients and carried prognostic value. Identification of benign lesions is important as some of them mimic malignancy clinically. The treatment as well as prognosis in benign lesions is different from malignant lesions in breast. Histopathological diagnosis plays an important role in management of benign lesions of breast.

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