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Spectrum of benign breast disease in western up: An observational study

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Abstract
Background: Benign breast diseases have become a major health issue in modern times to contend with owing to its alarming pace of increase in global prevalence and the adverse risk that it holds in turning cancerous. They account for approximately 90% of all clinical presentations related to the breast. The aim of the present study was to evaluate the clinicopathological profile of benign breast diseases in women.
Material and Methods: A prospective study was conducted in the Department of Surgery, Muzaffar Nagar Medical College and Hospital, Muzaffar Nagar, U.P., India, for 12 months. Patients experiencing breast-related issues such as lumps in the breast, nipple discharge, fever and mastalgia were admitted to the surgical ward for assessment.
Results: In the present study, 112 cases were included. Fibroadenoma formed the most common benign breast disease accounting for 49 cases, followed by fibroadenosis in 23 cases. Benign breast disease was commonly seen in the age group of 20-30years constituting 43.75% of all patients followed by 29.46% cases in age group of 30-40years. Among all the benign breast diseases, left sided breast involvement was more common constituting 51.78% cases while right breast involvement was less common constituting 36.60% subjects. Bilateral involvement was seen in only 11.60% patients. Patients with breast lump 83.92%, patients with breast pain 33.92% and patients with nipple discharge 3.57%.
Conclusion: The current study's findings on breast lesions provide useful information on the clinicopathological profile of breast lesions.

Keywords: Breast lesion, inflammatory, benign lesion and malignancy

Introduction
The term "benign breast diseases" (BBD) refers to a diverse set of lesions that affect the breast, that can cause a variety of symptoms or as a result of an incidental microscopic finding [1]. BBD have recently become a serious women's health issue because of its ever-increasing global frequency, deterioration in the general wellbeing in affected women, as well as the malignant potential of specific histological subtypes. The majority are caused by fibroadenoma, fibrocystic change, and breast abscesses [2].
BBD refers to all non-cancerous breast diseases, such as benign tumours, trauma, mastalgia, mastitis, and nipple discharge. Benign tumours include pathologic findings that do not increase a patient's risk for developing cancer, lesions that confer a slightly increase risk and lesions that are associated with up to 50% risk of developing breast cancer [3]. BBD can present with a palpable mass, pain and nipple discharge or nipple inversion. The issue of BBD is a relatively neglected aspect of breast diseases and has received step motherly treatment as compared to the malignant lesions of the breast. This is despite the fact that vast majority of the lesions that occur in the breast are benign and it has been reported that benign lesions of the breasts are far more frequent than the malignant ones, by a factor of ten [1,4].
It has also been reported that at least 90% of the patients visiting breast clinics will have nonmalignant disorders [5, 6]. With this back ground scenario, it was considered appropriate to determine the spectrum of BBD in this part of world. The objective of this study was to determine the frequencies of various BBD in female patients and to evaluate the clinicopathological profile of BBD in women visiting hospital of Western U.P.

Material and methods

A prospective observational study was conducted in Department of Surgery, Muzaffar Nagar Medical College and Hospital, Muzaffar Nagar, UP, India, for a period of 12 months, after taking the approval of the protocol review committee and institutional ethics committee.

All female patients visiting the surgical clinic with breast problems were included in the study. Patients with obvious clinical features of malignancy or those who on work up were diagnosed as carcinoma were excluded from the study. Detailed histories of patients were recorded that included age, marital status, parity, age of menarche, age at first pregnancy and age at menopause. Patients aged 50 years or above and having no menses for at least two years at the time of presentation were considered to be postmenopausal.

Family history of breast diseases especially breast cancer, history of contraception used was recorded. Detailed examination of lump and axilla was made with especial attention to any clinical signs of malignancy. Ultrasonography or mammograms were done when required necessary. Fine needle aspiration cytology (FNAC) was performed in patients with lumps to confirm the diagnosis. Core biopsy and/incisional or excision biopsy was done in patients with inconclusive FNAC report. All patients underwent operative treatment either in the form of excision biopsy or enucleation or wide excision or simple mastectomy. The excised specimen was sent for histopathological examination for confirmation of clinical diagnosis. All the patients were followed up for varying periods for evidence of recurrence. Data was entered on pre-designed proforma and frequencies of various BBD in different age groups were calculated.

Data was subjected to statistical analysis using SPSS version 24 software.

Results

In the present study, 112 cases were examined and analysed. Fibroadenoma was the most common benign breast disease accounting for 49 cases (43.75%), followed by fibroadenosis in 23 cases (20.53%). Fibroadenoma with fibrocystic changes was present in 14 subjects (12.5%), Breast abscess in 9 subjects (8.04%), there were 4 subjects each of Cystosarcoma phylloides and Duct papilloma. Duct ectasia and Lipoma was present in 3 subjects each. There were 2 subjects of Galactocele. And 1 patient each of Accessory breast, TB Mastitis and Sebaceous cyst (Table 1).

Benign breast disease was most commonly seen in the age group of 20-30years constituting 49(43.75%) of all patients followed by 33(29.46%) cases in age group of 30- 40years, 17(15.17%) subjects below 20 years age group were involved and above 40 years age group only 13(11.60%) subjects were involved (Table 2).

Among all the benign breast diseases, left sided breast involvement was more common involving 58 (51.78%) subjects while right breast involvement was less common i.e., 41 (36.60%) subjects. Bilateral involvement was seen in only 13 (11.60%) subjects. (Table 3) No. of subjects with only breast lump were 70 (62.5%), followed by lump and pain involving 22 (19.64%) subjects. Subjects complaining only pain were 14 (12.5%) in number. patients with nipple discharge only were 4 (3, 57%) and subjects with all symptoms i.e., lump, pain and nipple discharge were only 2 (1.78%) in number (Table 4).

Table 1: Spectrum of benign breast diseases

Type	Number of Cases=112	Percentage (%)
Fibroadenoma	49	43.75
Cystosarcoma phylloides	4	3.57
Fibroadenosis	23	20.53
Breast abscess	9	8.04
Duct ectasia	3	2.67
Lipoma	3	2.67
Fibroadenoma with fibrocystic changes	14	12.5
Duct papilloma	4	3.57
Galactocele	2	1.78
Accessory breast	1	0.89
TB Mastitis	1	0.89
Sebaceous cyst	1	0.89

Table 2: Age (years) distribution of different benign breast diseases

Disease	Below 20 yr.	20-30 yr.	30-40 yr.	Above 40 yr.	Total
Fibroadenoma	8	25	10	6	49
Cystosarcoma phylloides		1	1	2	4
Fibroadenosis	3	12	7	1	23
Breast abscess		3	3	1	7
Duct ectasia		2	1		3
Lipoma		1	2		3
Fibroadenoma with fibrocystic changes	6	3	3	2	14
Duct papilloma		2	1	1	4
Galactocele			2		2
Accessory breast			1		1
TB Mastitis			1		1
Sebaceous cyst			1		1
	17(15.17%)	49(43.75%)	33(29.46%)	13(11.60%)	112

Table 3: Site of involvement

Disease	Right Breast	Left Breast	Both Breast	Total
Fibroadenoma	16	26	7	49
Cystosarcoma phylloides	2	1	1	4
Fibroadenosis	6	12	5	23
Breast abscess	5	2		7
Duct ectasia	1	2		3
Lipoma	2	1		3
Fibroadenoma with fibrocystic changes	6	8		14
Duct papilloma	2	2		4
Galactocele	1	1		2
Accessory breast		1		1
TB Mastitis		1		1
Sebaceous cyst		1		1
	41 (36.60%)	58 (51.78%)	13 (11.60%)	112

Table 4: Different types of presentation and their incidence

Presentation	No of patients	Percentage (%)
Breast lump only	70	62.5%
Breast lump + pain	22	19.64%
Breast lump + pain + nipple discharge	2	1.78%
Breast pain only	14	12.5%
Nipple discharge only	4	3.57%

Discussion

In our study about 92% of the patients with BBD were in the age group between 11-44 years with peak incidence (43.75%) in age group between 20-30 years. These results are consistent with the study of Out AA [7] in which majority of the patients were below the age of 30 years. Ihekwaba in his study from Western Africa showed that about 80.5% of the BBD occur in females between 16-35 years of age. [8] Chaudhary *et al.* found almost equal incidence of BBD in patients between age group of 21 - 30 & 31 - 40 years. [9] However Dunn *et al.*, contradicts the results of all above mentioned studies in which the mean age of the patient with BBD was 50 years [10].

In our study fibroadenoma was the most common BBD seen in 49 of patients. Fibroadenoma was most commonly seen (n=25, 51.02%) in patients with 3rd decade (20 - 30 years) of life and followed by (N=10, 20.40%) patients in 4th decade (30 - 40 years) of life. This observation is also noted in two local studies where they found fibroadenoma as common BBD with incidence of 42% and 45% respectively [11, 12]. Murilllo *et al.* also found 38% incidence of fibroadenoma in a study of about 698 patients with BBD [13]. No significant difference was noted in the recent literature regarding the age groups having fibroadenoma [9]. This is because of its presentation as freely mobile discrete lump in the breast of young females and more awareness among females due to electronic media and education.

Second most common lesion in our study was fibroadenosis accounting for (n= 23) 20.53% of benign breast lesions. Echejoh *et al.* [14] observed maximum number of cases in 30-40 years. Amr *et al.* [15] reported maximum incidence of fibrocystic disease in 31-35 years. In the present study the maximum age incidence observed in the age group of 20-30 years.

Naveen *et al.* (2013) and Rashid *et al.* (2005) noted fibrocystic disease as the second common BBD after fibroadenoma accounting for 36% and 17% respectively. [2, 11] Stern (1992) found fibrocystic disease as the most common in females of all ages especially in the middle age group [2, 11]. In present study, 83.92% subjects complained of lump in breast. Kulkarni *et al.* [16] observed lump as main presenting symptom in most of the benign proliferative breast lesion, which is in accordance with this study. Malik *et al.* [17] reported breast abscess (12.4%) as second most common benign breast lesion. In present series we found maximum age incidence in the age group ranged from 20-30 years and majority of them were lactating mothers comparable with findings of Malik *et al.* [17]

In present study, incidence of tuberculosis was found to be 0.89%. Ikard and Perkins [18] and Haagensen, [19] Shinde *et al.* [20] observed 0.025% and 0.062%, 1-4.5% incidence of tuberculosis of breast, respectively. We observed maximum number of patients of breast tuberculosis in 30-40 years of age group, which is comparable with incidence reported by Tewari *et al.* [21] (20- 50 years of age group) while Goldmann *et al.* [22] observed maximum number in 20- 50years of age.

Patients were split into three groups based on their symptoms or presentations, which included breast lumps, breast pain, and nipple discharge. Breast lump was the most prevalent symptom, accounting for 83.92 percent of cases, followed by breast pain at 33.92 percent and nipple discharge at 3.57 percent. The majority of the patients just had a breast lump (62.5 percent). Only 14 (12.5%) of the 38 (33.92%) patients with breast pain complained of breast pain (mastalgia), and were treated with a cautious approach or reassurance. The rest exhibited symptoms such as breast lumps and nipple discharge. Among the 6 cases with nipple discharge, 4 cases presented with nipple discharge only, without any associated lump or pain. The cause for 4 cases was intraductal papilloma and for the rest, it was mammary duct ectasia.

Breast USG was performed on all of the cases in this research. We discovered that USG of the breast had good sensitivity and specificity in the diagnosis of fibroadenoma after validating with histological diagnosis. It proved useful in distinguishing between solid and cystic tumours in the breast. With a sensitivity of 96 percent and specificity of 88 percent in identifying fibroadenoma, FNAC is the most commonly used investigative technique. Surgical excision is the most successful treatment for most benign breast illness, accounting for about 90% of cases. Rarely, a wide excision and a straightforward mastectomy are required. The therapy provided to women who returned for follow-up following a surgical procedure was satisfactory.

Conclusion

BBD is a prevalent condition among reproductive-age women. Women visit a hospital for a variety of reasons, including a palpable tumour, breast soreness, and nipple discharge. Fibroadenoma is the most prevalent benign breast illness in our study, with most cases occurring in the second and third decades of life. Fibroadenosis is the next most common BBD in present study. The current study's findings on breast lesions provide useful information on the clinicopathological profile of breast lesions.

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