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A clinical study of benign breast diseases

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Abstract
Benign breast diseases constitute a heterogeneous group of lesions which include developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations, and neoplasms. The importance of benign breast disease lies in the fact that some of them are indistinguishable from breast carcinoma and some of these disease themselves increase the chances of the women developing breast cancer in future. Though benign breast diseases are very common with nearly 1/3rd of women suffering during their life time, not many studies have focused on this entity. The study of benign breast disease was undertaken in AH&RC which has patient clientele mostly of rural background.50 patients admitted with benign breast disease were followed up for a period of 3-8 months with the mean of 8 months. They were checked for recurrence of symptoms and any signs of early breast cancer. The main investigations consisted of USG, FNAC and Mammography apart from thorough clinical breast examination. Among all the cases, fibroadenoma (50%) was the most common benign breast disease found mainly in patients who were in second and third decade of life. The next commonest was fibrocystic disease (18%) found in less than 40 years of age. All of our patients presented with lump in the breast, 54% on right side, 30% on left side and 16% bilateral. Lump breast was the main presentation in all (100%) of our patients along with mastalgia in 74% of them.

Keywords: Benign breast disease, fibroadenoma, FNAC, mastalgia, phyllodes tumour

Introduction
In the class Mammalia, the Breast is a distinguishing feature in the female. Throughout life period of female, breast is subjected to constant physical and physiological alterations that are related to menstrual cycle, pregnancy, lactation and menopause.
ANDI (aberrations of normal development and involution) includes variety of benign breast disorders occurring at different stages of reproductive periods in females. The pathogenesis of ANDI involves disturbances in the breast physiology extending from a perturbation of normality to well defined disease processes, very often with little correlation between the histological appearances of the breast tissue and the symptoms. It is based on change in normal three phases of physiology of breast- lobular, cyclical and involution. These changes commonly occur in pre-menopausal woman, presenting with an area of lumpiness and mastalgia, which may be more often cyclical than non-cyclical [1].
With increased risk of developing carcinoma in the involved or other breast, the changes may be most trivial and self-limiting varying from mild inflammatory to cellular changes with atypia. Almost one third of women in child bearing age develop some of these changes sometime or the other during their lifetime. The importance of early recognition of benign breast disease from those of carcinoma cannot be overemphasized. Public awareness about breast carcinoma has increased the use of screening modalities. With increasing use of imaging studies such as USG and mammography, there is a rapid increasing trend in their diagnosis worldwide. And also with addition of tissue studies it has become easier to diagnose benign breast disease and to differentiate them from breast carcinoma. Benign lesions of the breast are ten times most common than malignant ones [2, 3].
Benign breast diseases constitute a heterogeneous group of lesions which include developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations, and neoplasms. They may present with a wide range of symptoms or may be detected incidentally. The incidence of benign breast lesions begins to rise during the second decade of life and peaks in the fourth and fifth decades, as opposed to malignant diseases, the incidence of which continues to increase after menopause, although at a less rapid pace [4].

Along with thorough clinical examination, the use of imaging modalities such as mammography, ultrasound, and magnetic resonance imaging of the breast and the extensive use of needle biopsies (triple assessment), the positive predictive value in the diagnosis of a benign breast disease is upto 99.9% [5].

Though histopathological tissue diagnosis is a universally accepted as confirmatory mode of diagnosis, a less invasive fine needle aspiration cytology of breast lumps is equally important part of triple assessment of breast lumps.

Because the majority of benign lesions are not associated with an increased risk for subsequent breast cancer, unnecessary surgical procedures can be avoided by utilizing the imaging and tissue biopsy modalities. It is important for pathologists, radiologists, and oncologists to recognize benign lesions, both to distinguish them from in situ and invasive breast cancer and to assess a patient‟s risk of developing breast cancer, so that the most appropriate treatment modality for each case can be planned and followed-up accordingly [6].

Cytogenetic studies have reported chromosomal aberrations in both epithelial and stromal cells, suggesting that the two components may involve neoplastic changes. Approximately 50% of fibroadenomas contain other proliferative changes of breast, such as sclerosing adenosis, adenosis, and duct epithelial hyperplasia. Fibroadenomas that contain these elements are called complex fibroadenomas. Simple fibroadenomas are not associated with any increased risk for subsequent breast cancer.

Methodology

About 50 cases of benign breast diseases were selected, only inpatient cases are considered for the study. Outpatient cases, males, malignant cases and cases which were operated early were excluded from the study.

Detailed history of all the fifty cases were taken according to the proforma approved by the guide. Information regarding age, religion, socio- economic status, nature of symptoms, duration, menstrual status, marital status, breast feeding were taken. History regarding to the usage of oral contraceptive pills, built and nourishment, habits were also noted. Family history regarding any breast conditions were obtained.

All the patients were examined systematically including breast examination and systematic examination and assessment of nutritional status. All underwent routine investigations which included blood counts-Hb%, BT, CT, Blood sugar levels (RBS), Blood urea, Serum creatinine, Urine routine and ECG. Investigations like USG and Mammography were done in some number of required cases.

The follow-up of the prospective cases were done at the hospital in OPDs. About 28 cases returned to the hospital for follow-up most of them being outpatients treated conservatively and some who were operated. The period of follow-up ranged from 3-18 months with mean of 8 months depending upon the time of entry into the study. The follow up included recording of the patients symptoms. At the end of the study period and follow- up the material was analysed and results were tabulated.

Results

Table 1: Age distribution

Age in years	No. of patients	%
<20	11	22.0
20-30	18	36.0
31-40	16	32.0
41-50	3	6.0
>50	2	4.0
Total	50	100.0

Mean ±SD: 30.20±9.98

Age incidence in the table 90% of all cases of benign disorders fall in age group between 12 to 40 years, that is second, third and fourth decades. Of these 58% are represented as early and mid-reproductive age groups.

Age group between 20-30 years i.e. 36% forms the major chunk. Mean age of benign breast disease is 30.20 years.

Only 5 cases are seen within the age group of 40-60 years which accounts to 10% of total number of patients.

Since AH&RC is a rural hospital most of the cases i.e., 30 cases belong to middle social class, 10 cases are of upper and 10 cases belongs to lower class.

Table 2: Socio economic status

Social Status	No. of patients	%
Lower socio economic	10	20.0
Middle socio economic	30	60.0
Upper socio economic	10	20.0
Total	50	100.0

Out of 50 cases who presented with lump (100%), majority i.e. 36% of these had lump of 1-6 months duration and 28% had lump of 1month duration.

Mastalgia was the second major compliant among 37 out of 50 patients (74%). Most of the patients presented to the hospital only when the lump became painful.

38% of the patients had symptoms of mastalgia for about 1-6months. Only 7 patients had symptoms of mastalgia for more than 1year constituting 14% of all the cases. Whereas 24 cases i.e. 48% of patients with lump presented with duration of more than 1 year. Unlike patients with lump, patients with mastalgia presented to us earlier.

Out of 50 cases only 5 cases had discharge per nipple constituting 10%. All this patients had nipple discharge of less than 2 weeks duration. 4 patients presented with other complaints like redness, fever and retraction of nipple constituting 8% with 3 of the patients presenting within 1month of the onset of symptoms.

Quadrant wise distribution of the lumps showed the following results.

Right breast

The preponderance was shown to the upper outer quadrant constituting about 48% of total lumps. Lower outer quadrant was the next most commonly affected quadrant in this study with 8% of the total cases. In about 10% of the cases affecting the right breast had more than one quadrant involvement.

Left breast

Similar to the results of the right breast, in the left breast also upper outer quadrant was the most commonly involved with 22% of the total number cases. 10% involved more than one quadrant involvement.

Table 3: Site of disease

Site of disease	No. of patients (n=50)	%
Right side		
UOQ	24	48.0
UIQ	1	2.0
LOQ	4	8.0
LIQ	1	2.0
Subareolar	0	0.0
>1 quadrant	5	10.0
Left side		
UOQ	11	22.0
UIQ	1	2.0
LOQ	2	4.0
LIQ	1	2.0
Subareolar	0	0.0
>1 quadrant	5	10.0

Majority (64%) had lump varying in size from 2cm to 5cm. 36% of our patients had lump varying in size between 5-10cm.
54% of the patients with fibroadenoma had lump size varying between 2-5cm and 8% of fibroadenoma patients had lump >5cm (Giant fibroadenoma).

Table 4: Modes of presentation

Complaints	No. of patients (n=50)	%
Lump	50	100.0
Mastalgia	37	74.0
Discharge	5	10.0
Nodularity	1	2.0
Others(redness retraction)	4	8.0

Akin and Hughes study 100% lump, 34% of mastalgia, 10% of discharge, 14% of nodularity and 0% with other associated complaints.
As comparing to the present study, additional 8% of patients had other complaints like redness, retraction of nipple.

Table 5: Characteristics of Lump

LUMP	No. of patients (n=50)	%
Size(cm)		
<5	32	64.0
5-10	18	36.0
>10	0	0.0
Shape		
Irregular	32	64.0
Regular	18	36.0
Surface		
Smooth	44	88.0
BOS	3	6.0
Nod	3	6.0
Consistency		
Firm	41	82.0
Soft	5	10.0
Cystic	2	4.0
Hard	2	4.0
Mobility		
mobile	46	92.0
fixed	3	6.0
NM	1	2.0

The shape of the swelling was irregular in 32 out of 50 cases (64%). In 44(88%) out of 50 patients the surface of the lump was smooth. Out of the remaining 6 patients, 3(6%) patients had lumps with bosselated surface and another 3(6%) had nodular surface.

Discussion

Youngest patient in this series was a 14 years old girl with fibrocystadenosis. Eldest one was 63 year old lady with keratinous cyst.
In our study, majority of patients fall within the age group of 20-30 years (36%). While according to Shukla S.Hari[7] in their study of 112 cases conducted at Hong Kong, India, and Northern Nigeria found peak incidence of benign breast diseases in 21-30 years (43%) and Oluwole F. Soji study showed peak incidence between 20-35 years [8]. were similar to our study.
De Chelnocky [9] and Gupta J.C [10] *et al.* found similar age incidence in their studies gave same opinion of age incidence (about 85%), 22% and 16% cases occurred in second and fourth decade of life respectively in our study.
In the present study majority of fibroadenomas occurred between 21 to 30 years. Similar to the opinion of De Chelnocky[9], and peak incidence occurred at 24.5 years of age.
11 cases(22%) of the patient are in age group 11- 20 years, out of which 6 cases were fibroadenoma(54.5%%) and 3 cases of fibroadenosis(27.3%) were seen. Narayan Singh V *et al.* [11] observe 24.9% and Gupta *et al*., observed (33%) of cases in same age group.
6 cases (25%) of fibroadenosis were within age group of 20- 40 years. Similar age incidence were noted by Oluwole *et al.* [8] in Blacks.
15 cases (62.5%) of fibroadenomas occurred between the age group 11-30 years. The corresponding literature of Haagensen reported 70% and benign breast disease, occurring in young age. Endocrine basis is a possible explanation to this etiology.
Cystosarcoma phyllodes in the present study accounted for 6% of all cases. Consistent with Shukla *et al.* [7] who showed only 2.3% incidence of phyllodes tumour. Gupta *et al* [10] concluded that it accounted for 5.5% of all cases in his study. In India reports show a wide variation in the incidence of cystosarcoma phyllodes; from 0.63% to 13.8% of the benign lesions.
Abscess, antibioma accounted for16% of all the cases studied in the present study consistent with the Ranabhashyam‟s view. Shukla *et al.* opined that in India they account for 8.8% of all benign breast lesions.
Duct papilloma accounted for 0% in the present study consistent with 2.9% in cadence in Shukla‟s prospective study. Oluwole tabulated it to represent 5% of all benign breast conditions in Blacks.
Duct ectasia contributed to 2% to the study. Shukla showed 2.5% incidence in a prospective study.
Three cases of phyllodes tumour one at the age of 29 years 35 years and the other at 40 years was seen. Haagenson found 60% of phyllodes tumour occur in patients between 3rd to 5th decades [12].
Galactocele, antibioma, chronic abscess too occurred between 15 years to 40 years of age, which being the most active period of reproduction.
Fibroadenomas accounted for 50% of the total cases studied. Rangabhashyam *et al.* [13] reported 56.7% while Shukla *et al* reported 37.8% and Gupta *et al*[10] found the incidence to be 64% for fibroadenoma and 18% for fibrocystadenosis in the present study incidence of fibroadenosis is 22% consistent that of Gupta *et al.*
Over 40% of women are said to have evidence of fibroadenosis at sometimes during their life time. Oluwole *et al*[8] reported fibroadenosis to be the second most common condition in this group and observed 24% incidence.
Lonzetta Neal *et al.* [14] reported that fibroadenomas are the most common benign breast lesions in the early and mid-reproductive

age group. And most of the phyllodes tumour occurs in the age group of more than 35 years.

According to all the above mentioned studies fibroadenoma is the most common. In the west cystic lesions of breast have higher incidence.

In the present study two cases are accounted. Most of them (30%) were multiple cysts in Shukla‟s study.

Most common presentation of benign breast condition is a lump in the breast. In the present study 100% of cases presented with the lump. DeChelnovky observed the similar feature in his study. 52% of these lumps presented with a duration of less than one year in our study which is consistent with that of DeChelnovky study.

36% of the cases presented with the history of duration of one month to six months in the present study. 48% of cases had the lump for more than a year, and DeChelnovky had similar 34% cases incidence.

In the present study Mastalgia was present in 74% as patients compliant. DeChelnovky *et al*. also report on his study as (34%) of patient compliant.

Discharge was the presenting compliant only in 10% of cases in our study. None of the fibroadenosis cases had nipple discharge. But Oluwole *et al* had 5% cases presenting with nipple discharge of which 60% were duct papilloma cases.

Memon *et al*. [15] showed in thier study of 500 cases, all patients presented with lump and 210(71.42%)patients with history of Mastalgia which is comparable to our study i.e. all 50 cases (100%) with lump and 37(74%) with associated mastalgia.

Conclusion

- Fibroadenomas are the commonest benign breast lesions constituting 50% of the total.
- Fibrocystadenosis forms the second most common benign lesion constituting 18%.
- Inflammatory breast disease is much common in our people accounting 12% of the study.
- Antibioma (6%) and phyllodes (6%) are next most common.
- Mean age of our population studied was 30.20years.
- 90% of all cases of benign disorders fall in age group between 12 to 40 years.

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