A CLINICAL STUDY OF BENIGN BREAST DISEASE IN RURAL POPULATION

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ABSTRACT: BACKGROUND AND OBJECTIVES: Benign breast disease in females is very interesting as it has diverse varieties and presentations and also causes apprehension of malignancy to the patient. With variants in occurrence and presentation in different age groups it poses a great challenge to study the pattern of disease, try and formulate the presentation archetype and histological variants of various types of benign breast diseases, and manage them. While at the same time confidently reassure the patients of that being not malignant. **METHODOLOGY:** 50 patients were studied with respect to clinical pattern, age, behavioural precedent, incidence among the patients in and around the institute which gives an idea of the prevalence of benign breast diseases. Appropriate investigations and management protocols were used. **RESULTS:** Fibroadenoma is the most common benign breast disease followed by fibroadenosis and cystosarcoma phyllodes. Mean age for our population with highest incidence of benign lesions is 27 years. Most common presentations are lump in breast, mastalgia, nipple discharge. FNAC was used as handy tool for planning and execution of the treatment by choosing the appropriate modality. Ultrasonography and mammography helped in differentiating benign from malignant lesions. Excision was treatment of choice for fibroadenoma, cystosarcoma phyllodes and fibroadenosis. Although in many cases reasonable response was obtained to conservative treatment. **CONCLUSION:** Benign breast disease is a challenging and fascinating subject. There is no significant classification of the benign breast diseases and inclusive terms. It is observed that though many of these diseases present themselves clinically differently, times are there when presentations are not fully favouring either of the benign type and sometimes they may clinically simulate malignant disease. This needs to be worked out by good understanding of basic presentations of benign breast disease and also conducting systematic clinical, sonological, mammographical and histological studies which may help in searching for answers to several questions that are being posed.

INTRODUCTION: The breast is man's insignia of membership to the class mammalia. It has always been a symbol of womanhood and ultimate fertility. Benign swellings constitute one of the commonest of diseases affecting the female breast (Mansel, 1992)¹. The rate of benign disease of malignancy is 10:1 according to Barclay et al., (1991). In the female, from puberty to death, the breast is subjected to physiological changes related to the menstrual cycle, pregnancy, lactation and menopause. Clinically defined benign breast symptoms tend to occur in 50% of women at some point at their lifetime.

In the past benign breast disorder was meant to be synonymous of 'fibrocystic disease'² – the term used for clinical syndrome of pre-menstrual pain and nodularity. Since everyone's attention was drawn towards cancer, the main area of investigation was assessment of pre-malignant potential of fibrocystic diseases which yielded largely variable outcomes. However the main age of developing benign breast disease is 15 – 20 years less than that of breast cancers.

The main problem from the patient's point of view in the intense anxiety associated with any symptoms related to the breast is due to the fear of cancer. Anxiety aside, serious cosmetic problems may result from repeated small biopsies or removal of breast quadrants in an attempt to search for small mammographic abnormalities. At present surgeons main concern is to exclude the dreaded carcinoma while treating benign breast lesions and alleviate the fear of carcinoma.

AIMS AND OBJECTIVES

1. To analyze the percentage of incidence, age distribution and other associated factors of benign breast disease
2. To study the different modes of presentation of the benign breast tumours
3. To study the clinico-pathological correlation of the benign breast diseases
4. To study the various types of management with stress upon surgical management

METHODOLOGY: This study was conducted at Adichunchanagiri Hospital & Research Centre (AH&RC) B.G. Nagara, Mandya District, for a duration of 18 months during the period from August 2011 to January 2013.

The cases studied are those who presented with breast symptoms to AH & RC, treated on inpatient basis. About fifty cases of benign breast tumours were selected. Outpatient cases, those which were malignant or operated earlier were excluded from the study.

Detailed history of all the fifty cases was taken according to a detailed proforma. All patients were examined systematically. All were subjected to routine investigations which included blood counts – Haemoglobin percentage, CT, BT, Blood Sugar (RBS) levels, Blood urea, Serum creatinine, Urine routine and ECG. Investigations like USG and Mammography were done to facilitate history and clinical examination.

At follow-up of the prospective cases were re-examined at the hospital in OPD. 35 patients returned to the hospital for follow-up most of them being outpatients treated conservatively and some of those who underwent surgery. The period of follow-up ranged from 3 to 18 months (mean of 8 months) depending upon the time of entry into the study. The follow-up included recording of the patient's symptoms and clinical findings related to recurrent breast lumps and breast symptoms. At the end of the study period and follow-up the material was analyzed and results were tabulated.

RESULTS: This study includes a total of 50 cases that were studied prospectively over a period of 18 months, which were treated on inpatient basis in Adichunchanagiri Hospital and Research Centre, B.G. Nagara from August 2011 to January 2013.

1. Age of Incidence:

Table 1: Age and Incidence with respect to pathology

Diagnosis	Age in group (in years)				
	11-20	21-30	31-40	41-50	51-60
Fibroadenoma	2	12	10	1	1
Fibroadenosis	3	5	2	0	0
Phylloides tumour	0	0	1	1	0
Galactocele	0	3	1	0	0
Antibioma	0	1	0	0	0
Non-lactating breast abscess	1	1	0	0	0
Gynaecomastia	1	1	0	0	0
Simple cyst	1	2	0	0	0
Duct ectasia	0	0	0	0	0
Duct papilloma	0	0	0	0	0
Others	0	0	0	0	0
Total	8	25	0	2	1
Percentage	16%	50%	28%	4%	2%

Among the 50 cases studied, two cases of gynaecomastia were examined and were the only male patients, rest all are women. 94% of all cases of benign disorders fall in age group between 11 to 40 years, that is in second, third and fourth decades. Average age of benign breast lesions was 27.9 years.

Graph 1: Age Incidence

2. Distribution of Cases:

Table 2: Distribution of Cases

Lesions	No. of Cases	% of Cases	% of cases in prospective (Varanasi and Lucknow) ³	Madras (Rangabh ashyam) ⁴
Fibroadenoma	26	52%	37.8	56.7
Fibroadenosis	10	20%	-	16.2
Phylloides tumour	2	4%	10.6	2.3
Galactocoele	4	8%	-	6.9
Simple cyst	3	6%	11.3	-
Gynaecomastia	2	4%	-	-
Non-lactating breast abscess	2	4%	14.7	9.6
Antibioma	1	2%		
Duct ectasia	0	0%	2.5	-
Duct papilloma	0	0%	2.9	2.3
Others	0	0%	-	-

Majority of the lesions in this study are fibroadenomas. A total of 26 cases of the 50 studied and formed around 52% of the total benign lesions in this study. Fibrocystic disease often termed as fibroadenosis in our study is the second largest group forming around 20% of the total cases.

Graph 2: Distribution of Cases

3. Modes of Presentation:

Table 3: Modes of Presentation

Symptoms	Hughes L.E. World Journal of Surgery ²		Present Study	
	No. of Patients	Percentage	No. of Patients	Percentage
Lump	50	100	50	100
Mastalgia	17	34	17	34
Nodularity	7	14	7	14
Discharge	5	10	5	10
Others (Scarring, Retraction of Nipple or Peau de orange)	-	-	-	-

Akin to Hughes study 100%, 34%, 14%, 10% of the patients presented with Lump, Mastalgia, Nodularity and Discharge respectively in the present study.

4. Age at Menarche:

Table 4: Age at Menarche

Age Range	Suen Jh. Sister Mary et al.		Present Study	
	Number of Patients	Percentage	Number of Patients	Percentage
9-12 Years	33	66	32	64
13-15 Years	14	28	15	30
> 15 Years	3	6	2	4

Average age at menarche in this group was 11.66 years. 64% fall in the range of 9 to 12 years.

5. Menstrual History:

Table 5: Menstrual History

Menopausal Status	Number of Patients	Percentage
Pre-Menopausal	47/50	94
Post-Menopausal	3/50	6

Most cases were in pre-menopausal age groups. One aged 51 years and other two were 47, 49 years were only three post-menopausal.

6. Marital Status:

- Married : 35 patients
- Unmarried : 15 patients

Two male patients were also not married.

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7. Breast feeding history: Most of the married females had breast fed the babies for upto 1 year. Two were in feeding phase, 4 of the married did not give history of breast feeding (8%).

8. Use of Oral Contraceptives:

Table 6: Use of Oral Contraceptives

Lesion	Number of Patient	Percentage
Fibroadenosis	3/10	30
Other Lesions	4/14	28.57
Fibroadenoma	6/26	23.07
Total	13/50	26

History of use of oral contraceptive pills could be obtained only with 13 cases accounting for 26% cases having oral contraceptive pills.

9. Side of the Disease and Distribution:

Table 7: Side of the Disease and Distribution

Diagnosis	Side		
	Right	Left	Both
Fibroadenoma	8 (30%)	12 (46%)	6 (23%)
Fibroadenosis	2 (20%)	2 (20%)	6 (60%)
Cystosarcoma Phylloides	0	2 (100%)	-
Galactocoele	2 (50%)	2 (50%)	-
Inflammatory Lesions	2	1	-
Others	3	2	-
Total (%)	17 (34%)	21 (42%)	12 (24%)

Overall in this study, there is no significant side being involved with only slight preponderance to left side. There are a significant number of cases presenting with bilateral diseases.

10. Size of the Lumps:

Table 8: Size of the Lumps

Lesions	Number of Cases in sizes in cms			
	< 2 cm	2-5 cm	6-10 cm	> 10 cm
Fibroadenoma	3	15	6	2
Fibroadenosis	3	5	2	-
Phylloides	-	1	-	1
Galactocoele	-	2	2	-
Antibiomas and Abscess	-	3	-	-
Others	-	3	-	-
Total	6 (12%)	29 (58%)	10 (20%)	3 (6%)

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Majority of the (58%) has the size of 2 cm to 5 cm 20% cases had lumps of 6 to 10 cm size. Largest size was noted in a phylloides tumour (10 X 8 cm)

11. Fine needle aspiration cytology: FNAC

Table 9: FNAC

Diagnosis	No. of Cases	FNAC			
		Consistent		Non-Consistent	
		No. of Cases	%	No. of Cases	%
Fibroadenoma	25	24	96%	1	4%
Phylloides	2	1	50%	1	50%
Inflammatory	3	2	66%	1	33%
Fibroadenosis	10	9	90%	1	10%
Others	10	6	60%	4	40%

Availability of this investigation was used judiciously. However, when in doubt FNAC was always done. Almost all patients underwent FNAC. No false positive results of malignancy given in the reports of any representative cases.

12. Management:

A. Conservative Management:

Table 10: Conservative Management

Lesions	No. of Cases
Fibroadenosis	10
Fibroadenoma	01
Antibioma	01
Others	00

Majority of the cases were managed with surgery. Medical management was done in some selected cases. All fibroadenosis cases studied were managed conservatively. Regime of management followed was:

1. Reassurance – with regular follow-up.
2. In case patients on oral contraceptive pills, they were asked to stop OCPs and switch over to other methods of contraception.
3. Analgesics - NSAIDs
4. Cap. Evening primrose oil 500 mg bid was prescribed. (Primrose oil – GLA (Gamma Lineolic Acid)).

In 4 cases, it gave good results with above regime. Two cases, who presented again within 6 months, underwent surgical excision.

5. Danazol 100 mg tid
6. Tamoxifen

One case of antibioma was also treated conservatively with antibiotics and analgesics.

B. Surgical Management:

Table 11: Surgical Management

Lesion	Total No. of Cases	Excision	Wide Excision	Simple mastectomy	Incision & Drainage	Sub acute Mastectomy	Aspiration
Fibroadenoma	25	24	-	-	-	-	-
Fibroadenosis	10	-	-	-	-	-	-
Phylloides	02	-	01	01	-	-	-
Galactocoele	04	04	-	-	-	-	-
Antibioma	01	-	-	-	-	-	-
Suppurative Lesion	02	01	-	-	01	-	-
Gynecomastia	02	-	-	-	-	02	-
Simple cyst	04	03	-	-	-	-	01
Total	50	32	01	01	01	02	01
Percentage		64	2	2	2	4	2

Of the 50 cases studies in this study, simple excision of the lump was done in 32 cases (64% of cases). All the incision scars healed by primary intention except in a case of simple mastectomy, lateral wound gaped, secondary suturing was done at a later stage.

13. Recurrence: Breast pain was the main complaint of patients who came for follow-up. Six out of 17 mastalgia cases had recurrent breast pain. There were mostly those treated conservatively. Lumpiness was seen in 3 of total 7 cases during the follow up. Reassurance and Cap Evion along with analgesics could only be given to them. Till the date of completion no cases of phylloides tumour came back with recurrence of phylloides. Follow-up was available for 36 cases; most of them being cases of fibroadenosis and fibroadenoma. No recurrence of simple cyst as seen in the follow-up. Galactocoele treated by simple excision were followed up only for short duration, due to patient's non-compliance for follow up.

Table 12: Main Complaints at Recurrence

Symptoms	No. of Cases	Percentage
Breast Pain	6/17	35.29
Lumpiness	3/7	17.65

DISCUSSION: The breast has always been a symbol of womanhood and fertility. As a result both surgery and disease of the breast evoke a fear of mutilation and loss of femininity. In our study, fifty cases of benign breast tumours the results are compared with those of well known authors. The spectrum of the disease remained more or less uniform throughout the study period.

1. Age of Incidence: In this study majority of the cases fall within the age group of 21-30 years (50%) while according to Shukla S. Hari³ peak incidence of benign breast disease were similar to our study, i.e., 21-30 years (43% in his study). Oluwole F. Soji⁵ study showed peak incidence between

20-35 years. De Chelnocky⁶, and Gupta J.C.,⁷ et al., gave the same opinion of age incidence (about 85% cases occur within 40 years of age), 22% and 16% cases occurred in second and fourth decade respectively in our study.

Fibroadenomas occur at younger age group than fibroadenosis according to Haagensen.⁸ In the present study majority of fibroadenomas occurred between 21 to 30 years. Similar to the opinion of De Chelnocky⁶, and peak incidence occurred at 24.5 years of age.

8 cases (22%) of the patient are in age group 11-20 years, out of which 2 cases were fibroadenoma (25%) and 3 cases of fibroadenosis (37.5%) were seen. Narayan Singh V. et al.,⁹ observe 24.9% and Gupta et al.¹⁰, observed (33%) of cases in same age group. 7 cases (78%) of fibroadenosis were within age group of 20-40 years. Similar age incidence was noted by Oluwole et al.⁵, in Blacks.

Cystosarcoma phylloides in the present study accounted for 4% of all cases. Consistent with Shukla et al.³, who showed only 2.3% incidence of phylloides tumour. Gupta et al.¹⁰, reported its incidence as 5.5% of all cases in his study. In India reports show a wide variation in the incidence of cystosarcoma phylloides; from 0.63% to 13.8% of the benign lesions.³

Abscess, antibioma accounted for 6% of all the cases studied in the present study consistent with the Rangabhashyam's view. Shukla et al.³, opined that in India they account for 8.8% of all breast benign lesions. Duct papilloma accounted for 0% in present study consistent with 2.9% incidence in Shukla's prospective study, Oluwole tabulated it to represent 5% of all benign breast lesions in Blacks.⁵ Duct ectasia contributed 0% to the study. Shukla³ showed 2.5% incidence in a prospective study.

2. Incidence of distribution of variety of benign disorders: Fibroadenomas accounted for 50% of the total cases studied. Rangabhashyam et. al.⁴, reported 56.7% while Shukla et. al.³, reported 37.8% and Gupta et. al.¹⁰, found the incidence to be 64% for fibroadenoma and 22% for fibroadenosis. Present study incidence of fibroadenosis is 20% consistent with that of Rangabhashyam et. al.⁴

Over 40% of women are said to have evidence of fibroadenosis at sometimes during their life time.¹¹ Oluwole et. al.⁵, reported fibroadenosis to be the second most common condition in this group and observed 24% incidence. According to all the above mentioned studies, fibroadenomas are the most common. In the West, cystic lesions of breast have higher incidence. In the present study three cases is accounted. Most of them (30%) in Shukla's³ study were multiple cysts.

3. Mode of presentation and duration: Most common presentation of benign breast disease is a lump in the breast. In the present study 100% of cases presented with the lump. De Chelnovky⁶ observed the similar feature in his study. 78% of these lumps presented with a duration of less than one year in our study which is consistent with De Chelnovky⁶ study. 30% of the cases presented with the history of duration of two weeks to two months in the present study. 22% of cases had the lump for more than a year, and De Chelnovky had similar 34% cases incidence.

In the present study, Mastalgia was present in 34% as patients' complaint. DeChelnovky et.al.⁶, also report on his study as (34%) patient complaint. Nodularity (lumpiness) was the presenting symptom in 14% of cases. Nodularity most of the time accompanied cyclic mastalgia.

Discharge per nipple was the presenting complaint only in 14% cases in our study of which 42% cases were galactoceles; none of the fibroadenosis cases in our study had nipple discharge. 2

cases of fibroadenoma, 1 case of simple cyst and 1 case of suppurative lesion presented with nipple discharge. But Oluwole et.al.⁵, had 5% cases presenting with nipple discharge of which 60% were duct papilloma cases.

4. Age at Menarche: In our study average age at menarche was 11.66 years. 67% were at 9 – 12 years range. De Chelnovsky⁶ had average at menarche to be 13 to 14 years.

5. Menstrual History: In the present study details of menstrual history and pregnancy were available to almost all cases. 94% of our patients were in premenopausal period. Maximum in second decade seen to be influenced by most intense endocrine activity.⁶

6. Parity and breast feeding history: Oluwole et.al.⁵, had 47% nulliparous with fibroadenoma. DeChelnoky et.al.⁶, had 27.5% patients who experienced pregnancy and 63% were nulliparous. Early age at menarche, multiparity seems to influence the higher incidence in our population.⁴⁸

7. Use of oral contraceptive pills: Thirteen patients accounting to 26% of patients in our study used oral contraceptive pills. Oluwole et.al.⁵, demonstrated 13.7% of their cases used oral contraceptive pills. Vassey et.al.¹¹, ascertained that oral contraceptive pills were not the cause of benign disease but can be protective to it if taken more than 2 years.

8. Side of the disease: In our study 42% of benign breast lesion is seen on left side, 34% seen on right side and 24% were bilateral. Oluwole et.al.⁵, showed 45% benign lesions in right breast and 41% in left, breast and 14% bilateral.

9. Size of the lumps: Majority of the fibroadenomas were 2-5 cm in size (58%), 12% were less than 2 cm size while 7% were giant fibroadenomas in our study. Maximum number of fibroadenosis was around 2 - 5 cm in size. Rangabhashyma et.al.⁴, showed that 6% fibroadenomas were giant ones in his study.

De Chelnoky⁶ described various sizes (fibroadenosis) and maximum of them being 2 cm in diameter (57%). In this study, 15% of the phylloides tumours were more than 10 cm in size, maximum being 15 X 13 cm. Harris R.J. et.al.¹², showed the sizes from 3 to 5 cm upto 40 cm.

10. Fine needle aspiration cytology: FNAC was done for all the patients to confirm the clinical diagnosis. 92% of the fibroadenomas and 90% of the fibroadenosis were diagnosed with cytology. In our study it was accurate for 66% of inflammatory lesions. 50% of cystosarcoma phylloides were confused with giant fibroadenoma in our study.

Somers G. Robert et.al.¹³, showed that fine needle aspiration cytology in 92% accurate for solid neoplasia. 100% specificity and 78% sensitivity was shown in our study. Gupta et.al.¹⁰, feels that cyto-diagnosis is highly dependable for benign tumours. Shukla³ confirms that phylloides is confused with fibroadenoma clinically and cytologically.

11. Conservative treatment: 3 of the cases of fibroadenosis which were managed conservatively failed as the patient could not purchase the drugs due to financial problems in the long run.

Fibroadenoma were usually managed by operative technique. One antibioma was successfully treated conservatively.

Cant. P.J. et. al.¹⁴, gave criteria for conservative management which were applied in our selected cases. Our results were not consistent with Wilkenson et. al.¹⁵, as none of fibroadenomas regressed in the follow-up period.

12. Surgical management: In our study 64% of the lumps were excised. 96% of fibroadenomas were excised by simple excision method. Wide excision was done to a case of phylloides with 1 cm margin as per Haagensen's⁸ guidelines. Simple mastectomy was carried out as to get wider margin of 2-3 cm for the other phylloides tumour. Gynaecomastia underwent subcutaneous mastectomy.

13. Histopathologic correlation: All the cases of fibroadenoma which was positive on FNAC were proved on histopathology. A case of chronic abscess which was suspicious of tuberculosis in histopathology was advice chemotherapy later on. Other suspicious benign breast masses on FNAC were later confirmed on histopathology.

Wilkenson et.al.¹⁵, described 76% correlation to clinical study and histopathology. Except for FNAC results in our study, Co-relation is present for 88% of the cases.

SUMMARY AND CONCLUSION: The study consists of only 50 cases with various causes of benign lesions. Therefore there may be some variations in the statistics as number of cases is small for full statistical evaluation.

Nevertheless following conclusions can be drawn from our study.

- Fibroadenomas are the commonest benign breast lesions constituting 50% of the total.
- Fibroadenosis forms the second most common benign lesion consisting 20%.
- Inflammatory breast disease is much common in our people accounting for 6% of the study.
- Cystosarcoma phylloides forms the third most common benign solid breast tumour accounting for 4% of the total study cases.
- 50% of the benign breast lesions occur in the age group 20-30 years.
- Mean age for our population with highest incidences of benign lesions is 27 to 28 years.
- 75% of benign fibroadenomas occur in age group of second to third decade.
- Mean age for highest incidence of fibroadenoma in our study is 24 to 25 years.
- Most of our patients belong to poor socio-economic class.
- All our cases presented with complaint of 'lump in the breast'. 17 cases (34%) had mastalgia which includes cyclical and non-cyclical mastalgia. Nodularity only in 14% cases while discharge per nipple 10%.
- Highest number of cases with nipple discharge was galactoceles.
- Around 62% of our patients had complaints for less than eight months.
- 94% of our study population was women in reproductive age group.
- Only 26% of our study population had present or recent past history of oral contraceptive pills ingestion.
- No definite conclusion drawn about the etiologic factor of oral contraceptive pills.
- Most of our patients were moderately nourished Indian women.

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- On our study significant difference noted in distribution of lumps either to left or right breast.
- 24% of our patients had bilateral lumps.
- Study of distribution of fibroadenomas to right or left breast correlate with international studies.
- Lateral quadrants of both the breasts had major share of lumps with high predilection to upper outer quadrant in both breasts.
- Majority of lumps also occupied more than one quadrant.
- 71% of fibroadenomas were solitary, 28% were multiple, 28% were bilateral, and 7% were giant fibroadenomas.
- Overall 60% of lumps were solitary in our study.
- Majority of fibroadenomas (57.69%) were 2-5 cm in size.
- Approach to the management in our cases was surgical.
- Costly investigations could not be described due to financial constraints faced by patients studied.
- Ultrasonography was used in differentiating cystic lesions from solid masses. One ultrasound guided aspiration of galactocele done.
- Mammography was used in selected patients.
- Fine needle aspiration cytology was used as a handy tool for planning and execution of the treatment by choosing the appropriate modality.
- Fine needle aspiration cytology was highly accurate (24 out of 26 cases i.e., 92%) in our study and was highly reliable for fibroadenoma than other types of benign lesions.
- FNAC and HPE studies conclusively ruled out in about 96% of the cases apprehension of malignancy.
- Fibroadenomas (84.61%) were treated successfully by surgery.
- Conservative treatment was successful in nearly all cases of fibroadenosis in our study.
- Majority of the lumps in our study (68%) were excised.
- Phylloides cases underwent simple mastectomy for better clearance.
- All the young patients (11-20 years) are better managed in the study by simple excision than follow up which loses the compliance of the patients.
- Recurrences in our study were only for mastalgia and lumpiness, which were seen more in fibroadenosis cases than lump.
- Good health education to our poor patients can help reduce the apprehensions of breast lump.
- Haggensen's method of breast self-examination should be a part and parcel of female adult education.

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