

An Observational Study on Benign Breast Lumps in Premenopausal Women

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Abstract

Introduction: Benign breast diseases are the common problems in female of reproductive age which accounts for 90% of the clinical presentation¹. The common problems for which women are referred to surgery OPD are breast pain, palpable breast lump and nipple discharge². These causes much distress among the women who consider that every symptom in the breast is due to cancer which is consistent with the famous dictum of “Boyd”³- “Every lump in the breast should be regarded as possible carcinoma until proved otherwise” however, sir Astley Cooper 1828 has shown the other side of coin. According to him “The disease of this organ have been too much considered as being of malignant nature & women having lump in the bosoms

have often been unnecessarily submitted to an operation under the idea of being cancerous.

Methods: This study was conducted in patients of premenopausal age group admitted in the department of General Surgery MGM, Medical College and Hospital, Navi Mumbai presenting as breast disease in the form of lump, nipple discharge and painful breast.

All patients were subjected to clinical examination and investigations.

Conclusion: 60 patients of premenopausal age group with benign breast lumps were included in this study admitted in MGM Medical College and Hospital, Navi Mumbai. Most of the patients were examined clinically by breast sonography, by FNAC and histopathological examination. The conclusions are as follows:

1. Maximum numbers of cases of benign breast lumps were found in the age group of 15-25 years. Fibroadenoma was found to be common in the age group of 15-25 years. The youngest was one 13 years of age and the oldest was 44 years of age.

2. Fibrocystic diseases were found commonly in the age group of 26- 35 years.

3. Married patients comprised 60% of patients which is slightly higher. Fibrocystic diseases were found to be common in married women, fibroadenomas were found to be common in unmarried women.

4. Lumps were the major complaints in majority of fibroadenomas whereas in fibrocystic diseases lump with pain was the common complaints. 3.33% of patients presented with discharge from nipple.

5. The size of the lump was proportionate to the duration of the symptoms.

6. Benign breast lumps are very slowly growing tumour.

7. Majority 41.7% of patients were either unmarried.

8. In 27.2% of cases of fibroadenoma, pain was found to be exaggerated during menstruation. In fibrocystic diseases the figure was about 55.5%.

9. In this study 42.8% of patients with fibrocystic diseases used oral contraceptive pills. In fibroadenoma oral contraceptive pills users were 2.85%, so the cases of oral contraceptive pills used in fibroadenoma are low.

10. Right breast was affected in majority 58.34% of patients and upper quadrant of the breast was the most common site of the lump 58.3%.

11. Histological examination was the gold standard with 100% accuracy against which other parameters compared.

12. FNAC showed overall accuracy rate in diagnosing fibroadenoma was 97.3% and in diagnosing fibrocystic disease it was 90.9%. accuracy obtained in diagnosing

duct ectasia, phylloides tumour, duct papilloma and breast cysts.

13. Radio mammography was 88.83% accurate in diagnosing fibroadenoma and 66.6% in cases of fibrocystic diseases. In phylloides tumour it was 66.65% accurate.

14. Accuracy of breast sonography in diagnosing fibroadenoma was 90.9% and in diagnosing fibrocystic disease it was 66.6%. 100% accuracy was obtained in breast cyst.

15. 15 patients offered conservative treatment in fibrocystic diseases in the form of assurance, drugs as analgesics and Danazol and surgical excision.

16. Excision done in 100% of cases of fibroadenoma.

17. Apart from persistence of mastalgia in fibrocystic diseases, the outcome of surgery in benign breast diseases is quite promising.

18. Longer period of follow up could have been truly reflective of the date which was not included in this series due to shorter period of follow up.

Keywords: Benign, breast lump, fibroadenoma, phylloides, fibrocystic

Introduction

Benign breast diseases are the common problems in female of reproductive age which accounts for 90% of the clinical presentation¹. The common problems for which women are referred to surgery OPD are breast pain, palpable breast lump and nipple discharge². These causes much distress among the women who consider that every symptom in the breast is due to cancer which is consistent with the famous dictum of “Boyd”³-“Every lump in the breast should be regarded as possible carcinoma until proved otherwise” however, sir Astley cooper 1828 has shown the other side of coin. According to him “The disease of this organ have been too much

considered as being of malignant nature & women having lump in the bosoms have often been unnecessarily submitted to an operation under the idea of being cancerous. Breast tissue on female is under influence of various hormones and subjected to constant physiological variations throughout reproductive life and beyond⁵

A lump on the breast a common premenopausal physical finding in females 65% or more of all breast lumps are discovered by the patient herself. In patients who commonly perform self-breast examination, more than 85% of definable lesions are detected by the patient almost 30% of women suffer from a benign breast disorder requiring treatment sometimes in their lives⁶. Many works had been done on benign breast diseases, but it was Hughes et al⁷ (1989) who produced a comprehensive classification which put all the processes of physiological change, growth development and involution into a single framework known as “Aberration on normal development and involution” (ANDI classification). The basic principles underlying the aberrations of normal development and involutions are: -

1. Benign breast disorder and diseases are related to the normal process of the reproductive life and to involution.
2. There is a spectrum of breast conditions that ranges from normal to disorder to disease.
3. The “ANDI” classification encompasses all aspect of the breast condition including pathogenesis ad the degree of abnormality.

Definitive diagnosis of breast lumps based on clinical examination is unjustified and inaccurate. Benign lesions can mimic the sign of breast cancer. Tumours do not become generally palpable until greater than 1 cm in diameter and it has been estimated by calculations of

tumour doubling time that it takes stage (Wilson, 1975)⁸. The most important development in recent years in the diagnostic field of breast lesions has been the improvement in techniques for obtaining samples from suspicious lumps at the time of patient’s first visit to the clinic (Bauml, 1980). Many such techniques based on tissue cytology, have been practiced, but two methods of tissue cytology have proved promising form diagnostic points of view: -

1. Aspiration cytology
2. Imprint cytology

The aspiration cytology is the examination of smear prepared from tissue aspirates obtained from aspiration. Although the diagnostic accuracy of imprint cytology is very satisfactory it cannot be performed without excision of the whole or part of the lump.

Aspiration cytology was first introduced by Mortin and Ellis in 1926 for the diagnosis of various tumours arising from breast, bone, lungs and many other organs. Beside accuracy, other advantages of this diagnostic method are simplicity, rapidity as well as a routine outdoor procedure for screening breast lumps.

In young women confirmation of the diagnosis of fibro adenoma by cytology or histology allows the patient to keep her lump if she so desires, as many of these will stay unchanged or disappear on follow up (Wilkinson 1989). The advantages of definitive diagnosis of breast lump at the first visit of women to the clinic is enormous. Any discrete mass requires mandatory cytological and, or histological diagnosis to exclude malignancy. In present study various risk factors associated with benign breast lumps confirmed by histopathological examination has been evaluated.

Sensitivity and specificity of physical examination is 96% and 66%, for mammography examination it is 94%

& 73% and for FNAC it is 90% & 93% respectively (BUTLER JA VARGHES M.I. WILSON S.E 1999). According to Kollur SM EI Hg (2006) FNAC is a highly sensitive method for the diagnosis of fibro adenoma. Mammography should not be considered a substitute for biopsy rather this technique is an objective, complimentary study that supplement history and physical examination⁹. USG is useful in young women with dense breast in whom mammogram are difficult to interpret and in distinguishing cystic from solid lesion. Chest X-ray for detection will help in exclusion of malignancy from benign disease. Percutaneous large core biopsy is reproducible and reliable alternative to surgical biopsy. Excisional biopsy is considered mandatory for patient with dominant breast lump.

Triple assessment – In any patient who present with lump or other symptom, suspicious of carcinoma, the diagnosis should be made by a combination of clinical assessment, radiological imaging and a tissue sample taken for either cytological of histological analysis The positive predictive value of this combination should exceed 99.9% (Bailey & Love 25th Ed. 2008, pp -829)

Materials and methods

This study was conducted in patients of premenopausal age group admitted in the department of General Surgery MGM, Medical College and Hospital, Navi Mumbai presenting as breast disease in the form of lump, nipple discharge and painful breast.

All patients were subjected to clinical examination and investigations and following protocol was maintained throughout the study.

inclusion criteria

Premenopausal women with breast lump of age group(15-45years).

exclusion criteria

Post-menopausal women diagnosed case of malignant breast lump.

1. Previous lumpectomy.
2. Previous mastectomy.
3. Previous oophorectomy.

clinical examination

1. History- A detailed history was taken and important features recorded.
2. Name, age, sex and relation.
3. Complaints with duration –Lump pain and nipple discharge.
4. History of present illness.
5. History of past illness – Especially removal of previous tumour.
6. Removal of present lump – History of previous prolonged cough to rule out Koch's.
7. Family history – Benign breast disease in mother, sister and daughters.
8. Reproductive and lactational history including marital status onset of oral contraceptive pills and breast feeding.
9. History of trauma.
10. Socio – economic status.

Physical examination

1. General examination- Built, pallor, icterus, cyanosis, oedema, ascites, pulse, respiration, temperature, blood pressure and lymphadenopathy.
2. Local examination- The body above waist was fully exposed and the breasts were examined in the sitting, standing, recumbent position and leaning forward position.
 - Inspection –Carried out in the following way—
 - a. With the arms by the side of the body.
 - b. With the arms raised straight above her head.

c. With the hands on the waist pressing or relaxing on command.

d. With the patients bending forward from the waist looking for all the quadrants of breast.

Examination of the nipple

Position and level compared with that of the other side.

a. Size and shape – Whether prominent, flattened retracted or eroded.

b. Surfaces – Looked for any crack or fissure.

c. Discharge – If any was noted.

Examination of areola-

Examined for any crack, fissure or ulcer tubercle and nodule Examination of skin over the breast looked for any redness, dimpling, retraction, pitting, thickening, puckering, Peaud'orange, ulceration, or fungation.

Examination of breast as whole-

Position size shapes any puckering or dimpling, or ulceration was noted.

Lump

Any lump inspected for any abnormality

Examination of arm and axilla-

Inspected for any oedema

The opposite breast

Inspected similarly

Palpation

First of all the entire breast is palpated by using flat of the hand for any lump. All the four quadrants: upper outer, upper inner, lower outer and lower inner as well as sub areolar region were palpated. If a lump is palpated in the breast the following points were noted-

a. Local temperature and tenderness

b. Size, shape, surface, margin and consistency and ulceration over the lump were noted. Mobility within the breast was noted. Whether the lump is best felt with the

flat of the hand or between thumb and fingers was also noted.

c. Lymph node – Axillary, cervical and supraclavicular lymph nodes examined

E. Systematic Examination

- Chest examination- The chest wall examined and its relation to the lump was noted, skin nodules pleural effusion or consolidation due to metastasis was looked to exclude malignancy.

- Abdominal examination- Liver, spleen and other organs examined to rule our malignancy and evidence of any lump noted.

- Per rectal and per vaginal examination were done to detect metastasis in case of a malignant breast lesion.

Investigations

- Blood examination: - Total and differential counts of white blood cells, Haemo globin, erythrocyte sedimentation rate, bleeding and clotting time

- Routine examination of the urine was done

- FNAC was done in suspected lumps

- FNAC was done in suspected lumps

- Radiological examination: - X-ray chest and bones to detect any secondary

- Ultrasonographic study was done in cystic mass in patients below 35 years

- Histopathological examination done in excised breast mass (excision or incision biopsy material)

Fine needle aspiration cytology (fnac)

Materials used were

1. Hypodermic syringe

2. Glass slides 7.5 cm x 2.5 cm x 13 cm size (blue star)

3. Hypodermic needle 22 - gauge

4. Microscope cover glass – 18 mm x 18mm size

5. Stain and chemicals for staining method

Method of fine needle aspiration cytology

Patients with either solid or cystic lumps were subjected to fine needle aspiration. The method was used for therapeutic and diagnostic purpose. The patient was asked to sit on a tool with affected breast exposed. Proper antiseptic cleaning of the site was done. No anaesthesia was required in the procedure the lump was held in between left index finger and thumb. The syringe fitted with 22-gauge needle was held in the right hand and the needle was inserted into the mass while constant negative pressure is applied to the syringe. The needle was manipulated inside the lump in different direction. Suction was realised and the needle was withdrawn. After withdrawal of needle firm pressure was maintained for 2 minutes at the site of puncture to avoid bleeding and haematoma formation. Pressure dressing was applied for 24 hours. The scanty fluid and cellular material within the needle were mixed immediately on slides in 95% ethyl alcohol.

Staining was done by Papanicolau's method as given below:

- a. Slides are removed from fixative and then dehydrated by passing through descending grades of alcohol –
 - 80% ethyl alcohol – 10 dips
 - 70% ethyl alcohol – 10 dips
 - 50% ethyl alcohol – 10 dips
- b. Stain with Ham's haematoxylin 2 minutes
- c. Rinse in tap water
- d. Differentiate in 0.25% aqueous hydrochloric acid
- e. Wash in running tap water for 5 minutes
- f. Dehydrate the slide passing through ascending grades of alcohol:
 - 50% ethyl alcohol – 6 dips
 - 70% ethyl alcohol – 6 dips
 - 80% ethyl alcohol – 6 dips

- g. Rinse in 95% alcohol in two separate containers – 5 dips
- h. Stain in EA 36 or EA 65 for few minutes
- i. Rinse in changes of 95% alcohol for few seconds
- j. Dehydrated by passing through absolute alcohol
- k. Cleaning is done by rinsing in xylene for 2 minutes
- l. Mounting was then done by mounting media either in DPZ or Canada balsam

Cytological diagnosis

After proper fixation the slides were examined under light microscope for cytological diagnosis. First the smear was examined to determine whether they belong to benign or malignant breast lesions. On the basis of cellular characteristic as given below

Characteristic of cells	Benign	Malignant
Size of cells	Normal	Increased
Adhesiveness	GOOD	Loss of adhesiveness
Uniformity of cells	Present	Pleomorphism
Cellularity	LOW	HIGH
Nuclear chromatin	Coarse but regular	Fine, pale, nuclear
Stepped nuclear	Frequent	Absent
Lymphocytic infiltration	Less	Marked

Depending upon the character of cells mentioned above majority of smears were diagnosed as benign or malignant but in few situations no diagnosis could be due to inadequate aspirates while in other the diagnosis of malignancy was not certain.

Accordingly, the smears were categorized as:

1. Benign
2. Malignant
3. Unsatisfactory

4. Suspicious

Smears diagnosed as benign were further studied in order to determine the pathological nature of the lump.

Pathological diagnosis of the benign smears were determine on the basis of presence of the following cells:

1. Duct Cells: Group of cells with oval nuclei coarse nuclear chromatin and sparse blue, cytoplasm arranged in tight clusters

2. Foam Cells: Large phagocytic cells with dark round often granular nuclei which were usually eccentric cytoplasm showed many fine vacuoles giving foamy appearance.

3. Apocrine cell: Metaplastic duct cells in which nuclei were larger and rounded than duct cells, usually with single nuclei and fine chromatin. They have abundant basophilic cytoplasm and were also arranged in clusters.

4. Stripped nuclei: They exhibit no cytoplasm, were oval with fine homogenous nuclear chromatin. They lie close to duct cells and may be of myoepithelial origin.

5. Fat cells: Occurred in groups and sheets with small, eccentric, dark nuclei and abundant unstained cytoplasm with well-defined cell borders.

6. Other cells – Lymphocytes histiocytes and giant cells were seen. Erythrocytes were present in some smears due to trauma during aspiration.

Various pathological benign lesions were diagnosed on the basis of cellular characteristic of the smear based on the common benign breast lump.

- a. Infective and inflammatory
- b. Benign neoplasm
- c. Benign conditions as aberration of normal development and involution (ANDI)
- d. Miscellaneous lesion
- e. Traumatic

The result of the cytological diagnosis was compared with those of clinical diagnosis and histopathological diagnosis.

Treatment

- a. Medical Treatment – to patients with pain
- b. Surgical treatment – excision of the mass when required

Follow-up

All patients were followed up for 3 months to 1 year and recurrences and malignant conversion if any were noted during the follow up.

Observations and results

The present study is based on observations made on 60 cases of benign breast lumps in premenopausal women, admitted in the department of surgery, MGM, Mumbai. Only those cases proved to be benign after clinical examination and investigations have been included in the study.

The following data was obtained:

incidence related to age has been depicted in table-1

Maximum number of cases of benign breast lumps were found in the age group of 15-25 years (27 out of 60 = 43.3 %) followed by in between 36-45 years (13.3%) and only one case presented below 15 years of 1.7%.

Table 1: incidence of benign breast lumps in relation to age

Type of disease	Age			
	0-15	15-25	26-35	36-45
Fibroadeno ma	1	21	9	3
Fibrocystic disease	X	2	4	3
Phylloides tumour	X	X	2	1
Breast cyst	X	X	2	1
Duct ectasia	X	X	X	1
Galactocele	X	1	2	X

Duct papilloma	X	1	X	X
Fat necrosis	X	1	X	X
Bilateral fibrocystic disease	X	X	2	X
Bilateral fibroadenoma	X	X	2	X
Total	1	27	23	9
%	1.7%	45%	38.3%	10.5%

Incidence of benign breast lump in relation to marital status has been depicted in table -2

Most benign breast lump occurred in married female (61.6%) of which common breast lumps were fibroadenoma fibrocystic diseases, phylloides tumour, breast cyst, duct ectasia and duct papilloma. However, fibroadenoma was found more commonly in unmarried women (66.7%).

Table 2: relation with marital status

Type of disease	Marial status	
	Unmarried	Married
Fibroadeno ma	20	14
Fibrocystic disease	2	7
Phylloides tumour	X	3
Breast cyst	X	3
Duct ectasia	X	1
Galactocele	X	3
Duct papilloma	X	1
Fat necrosis	X	1
Bilateral fibrocystic disease	X	2
Bilateral fibroadenoma	X	2
Total	23	37
%	38.3%	61.6%

Incidence of benign lump in unmarried women was found to be only 38.3% of total which consists of mainly of fibroadenoma and fibrocystic disease.

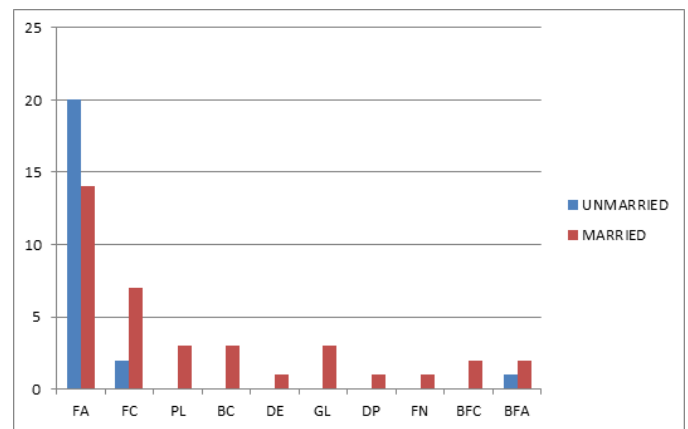


Fig 1: relation of breast lump with marital status (FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

incidence of benign breast lump in relation to parity is depicted in table 3

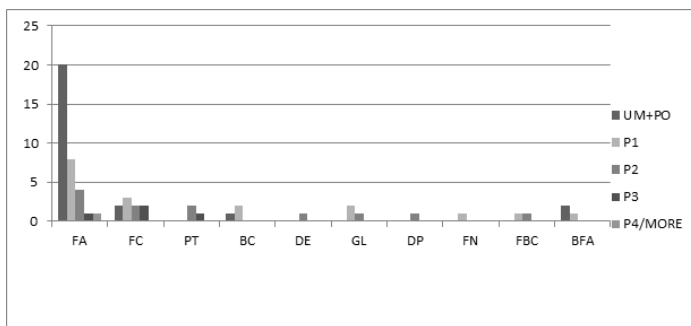
It was found that benign breast lumps were more common among parous women. Nulliparous including unmarried women constituted 41.7% of total benign breast lumps. Parous constituted 58.4% of benign breast lumps among married women. Among parous women, those having one child (P1) constituted 30% of benign breast lumps.

Table 3: relation of parity

type of disease	Parity				
	Unmarried women no issue (Po)	1 child (P1)	2 childr en (P2)	3 Childr en (P3)	>3 Childr en
Fibroadenoma	20	8	4	1	1
fibrocystic	2	3	2	2	X

disease					
phylloides tumour	X	X	2	1	X
breast cyst	1	2	X	X	X
duct ectasia	X	X	1	X	X
galactocel e	X	2	1	X	X
duct papilloma	X	X	1	X	X
fat necrosis	X	1	X	X	X
bilateral fibrocystic disease	X	1	1	X	X
bilateral fibroadeno ma	2	1	X	X	X
total	25	18	12	4	1
%	41.7%	30 %	20%	6.7%	1.7%

Fig 2: relation with parity



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Incidence of benign breast lump in relation to socio-economic status

All the patients with benign breast lumps were divided into three income groups in Maharashtra:

A) Below average income group- <40,000 Rupees/month

B) Average income group- 40,000 to 1,00,000 Rupees/month

C) Above average income group- >1,00,000 Rupees/month

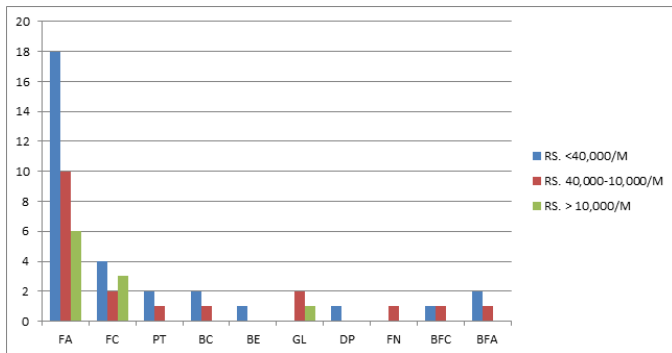
Majority of the patients were belonging to below average income group (i.e.,51.6%). Patients with average income group were 31.7% and patients with high income group were only 16.6%.

Table 4: relation of socio-economic status

Type of disease	Below average income (rs<40000/m)	Average income (rs 40000-1,00,000/m)	Above average income (rs>1,00,000/m)
Fibroadeno ma	18	10	6
Fibrocystic disease	4	2	3
Phylloides tumour	2	1	X
Breast cyst	2	1	X
Duct ectasia	1	1	X
Galactocele	X	X	1
Duct papilloma	1	2	X
Fat necrosis	X	1	X
Bilateral fibrocystic	1	1	X

disease			
Bilateral fibroadenoma	2	1	X
Total	31	19	10
%	51.6%	31.7%	16.6%

Fig 3: relation with socio-economic status



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Variation in the types of presentation in relation with different benign lumps depicted in table -5

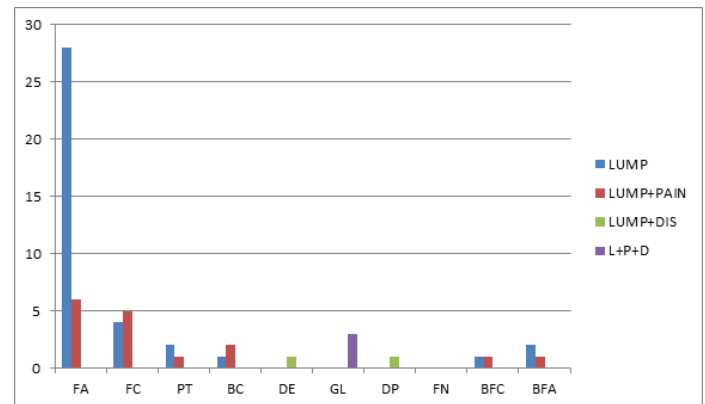
82.3% of fibroadenoma presented with lump only and 19.7% presented with lump and pain both. Majority of benign breast lumps 65% presented with lump only, 26.7% presented with lump and pains both and only 5% presented with lump, pain & discharge all.

Table 5: different types of presentation

Type of disease	Lump only	Lump with pain	Lump with discharge	Lump, pain & discharge
Fibroadenoma	28	6	0	0
Fibrocystic Disease	4	5	0	0
Phylloides	2	1	0	0

Tumour				
Breast cyst	1	2	0	0
Duct ectasia	0	0	1	0
Galactocele	0	0	0	3
Duct papilloma	0	0	1	0
Fat necrosis	1	0	0	0
Bilateral Fibrocystic Disease	1	1	0	0
Bilateral Fibroadenoma	2	1	0	0
Total	39	16	2	3
%	65%	26.7%	3.3%	5%

Fig 4: different types of presentations



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

(L – LUMP, P – PAIN, D- DISCHARGE)

Relation of benign breast lumps with use of ocp is depicted in table -6

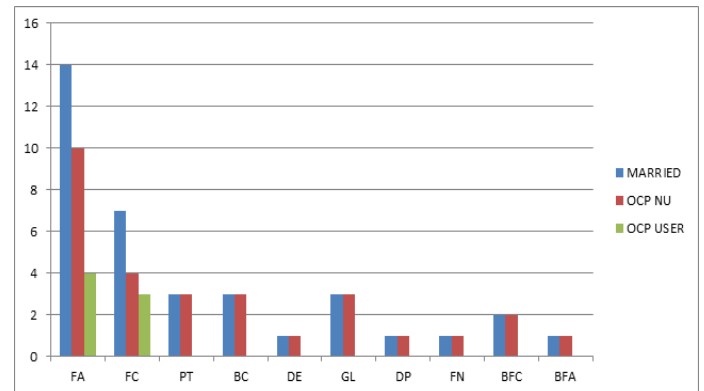
Out of 36 of total married women 80.5% were suffering from benign breast lumps that were not using oral contraceptives and only 19.25% had benign breast lump with the use of oral contraceptives. In our study among

36 married women, 29 were not using OCP (80.5%) and 19.2% were using OCP. Thus benign breast lumps were more common among the women who were not using OCP.

Table 6: relation with OCP

Type of disease	No. Of married women	No. Of dcp no user	No. Of ocp user	Total % of ocp user
Fibroadenoma	14	10	4	20.85%
Fibrocystic Disease	7	4	3	42.8%
Phylloides Tumour	3	3	0	
Breast cyst	3	3	0	
Duct ectasia	1	1	0	
Galactocele	3	3	0	
Duct papilloma	1	1	0	
Fat necrosis	1	1	0	
Bilateral Fibrocystic Disease	2	2	0	
Bilateral Fibroadenoma	1	1	0	
Total	36	29	7	
%	60	80.5	19.25	

Fig 5: relation with OCP use



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

(OCP NU – OCP NON-USER)

Relation of benign breast lumps with menstruation is depicted in table-7

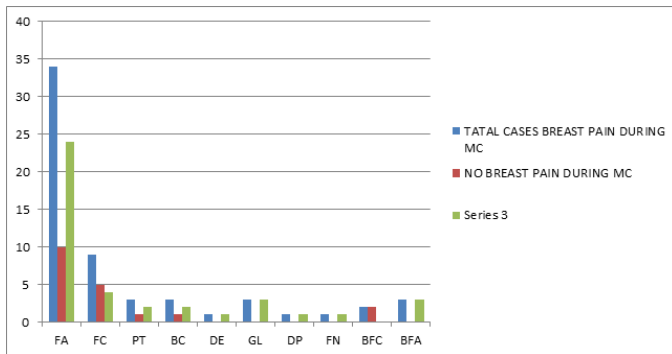
It was found that 31.6% patients with benign breast lump having exacerbation of pain during menstruation and the remainder showed no pain during menstruation.

Table 7: relation with menstruation

Type of disease	Total no of cases	Increased pain during menstruation	No change during menstruation
Fibroadenoma	34	10	24
Fibrocystic Disease	9	5	4
Phylloides Tumour	3	1	2
Breast cyst	3	1	2
Duct ectasia	1	0	1
Galactocele	3	0	3
Duct papilloma	1	0	1
Fat necrosis	1	0	1

Bilateral Fibrocystic Disease	2	2	0
Bilateral Fibroadenoma	3	0	3
Total	60	19	41
%		31.6%	68.3%

Fig 6: relation with menstruation



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Relation between breast affected and site of distribution of lesion with nature of lesion is depicted in table -8

In our study of benign breast lump, right side of the breast were more affected (58.34%) than left side (33.3%) Bilateral breast affection in (8.33%). Among four quadrants of breast upper outer quadrant were more commonly affected (58.3%).

Table 8: relation between site affected & site of distribution of lesion with nature of lesion

Type of disease	Breast affected			Site of lesion					
	Rt. Only	Lt only	Bilateral	Uoq	Uiq	Loq	Liq	Sa	Mm
Fibroadenoma	24	10	3	28	3	3	2	X	1
Fibrocystic disease	4	5	2	6	1	2	1	X	1
Phylloides tumour	2	1	X	1	X	X	X	X	2
Breast cyst	1	2	X	X	1	X	X	2	X
Duct ectasia	1	X	X	X	X	X	X	1	X
Galactocele	2	1	X	X	X	X	X	X	3
Duct papilloma	X	1	X	X	X	X	X	1	X
Fat necrosis	1	X	X	1	X	X	X	X	X
Total	35	20	5	35	5	5	3	4	7
%	58.34	33.3	8.88	58.34	8.33	8.33	5	6.7	11.6
%	58.34	33.3	8.88	58.34	8.33	8.33	5	6.7	11.6

(UOQ = Upper outer quadrant, UIQ = Upper inner quadrant, LOQ =Lower outer quadrant, LIQ = Lower inner quadrant, SA = Sub areolar, MM = Multiple lump or involving more than one quadrants.)

Fig 7: A relation with side (a) & SITE (b) of breast affected

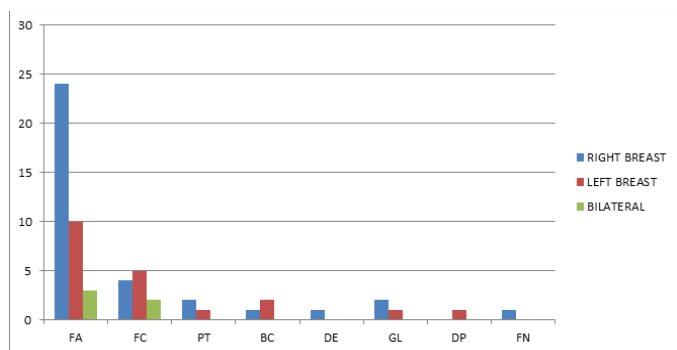
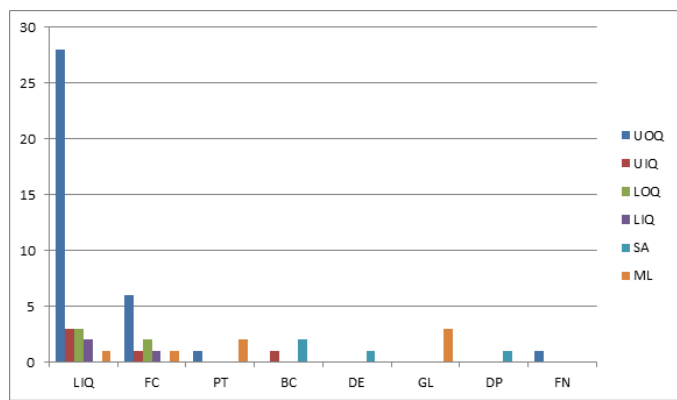


Fig 7: B Relation with quadrants



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

(UOQ = Upper outer quadrant, UIQ = Upper inner quadrant, LOQ =Lower outer quadrant, LIQ = Lower inner quadrant, SA = Sub areolar, MM = Multiple lumps or involving more than one quadrant.)

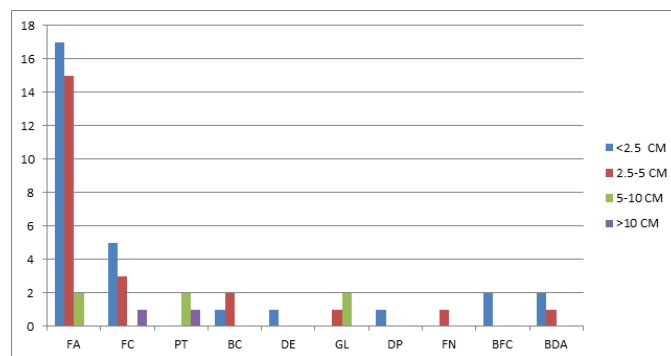
Incidence in relation to size of lump is depicted in table - 9

Out of 60 cases of benign breast lumps 29 (48.38%) were < 2.5 cm in size and 23 cases (38.3%) were between 2/5-5 cm in size.

Table 9: relation to size

Type of disease	Size of breast lump			
	<2.5 CM	2.5-5 CM	5-10 CM	>10 CM
Fibroadenoma	17	15	02	01
Fibrocystic Disease	5	03	X	01
Phylloides Tumour	X	X	02	X
Breast cyst	01	02	X	X
Duct ectasia	01	X	X	X
Galactocele	X	01	02	X
Duct papilloma	01	X	X	X
Fat necrosis	X	01	X	X
Bilateral Fibrocystic Disease	02	X	X	X
Bilateral Fibroadenoma	02	01	X	X
Total	29	23	6	02
%	48.33	38.3	10	3.3

Fig 8: relation with size of lump



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat

necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Size of lump in relation to duration of symptoms depicted in table -10

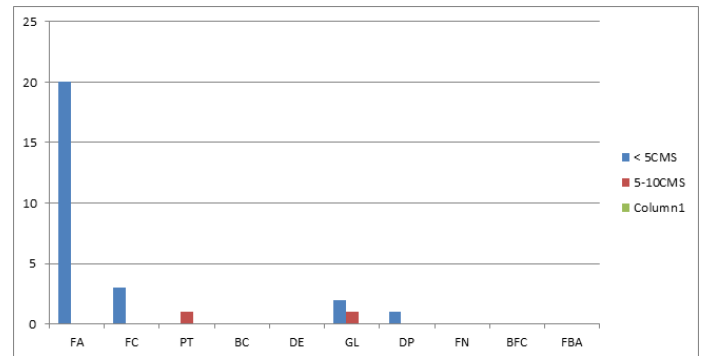
In our study of benign breast lump, the size of the lump is proportionate to duration of symptoms which is clear from the table. Table shows that 20 cases of fibroadenoma which presented within 6 months duration had had less than 5 cm size whereas 14 cases of fibro adenma which presented later between 6 – 12 months had more than 5 – 10 CMS size. The rate of growth was very low as per patient’s statements. However, we could not compare the rate of the growth because after the presentation of the lump, patients were subjected to surgery. In this study, it also has been concluded that benign breast lumps are very slowly growing tumour.

Table 10: relation to duration

Duration ---	<6 Months		6 – 12 Months		>12 Months	
	<5	5 - 10	<5	5 - 10	<5	5 - 10
Fibroadenoma	20	X	X	14	X	X
Fibrocystic Disease	03	X	X	05	01	X
Phylloides Tumour	X	01	X	01	X	01
Breast cyst	X	X	01	X	02	X
Duct ectasia	X	X	01	X	02	X
Galactocele	02	01	X	X	X	X
Duct papilloma	01	X	X	X	X	X
Fat necrosis	X	X	01	X	X	X
Bilateral Fibrocystic Disease	X	X	02	X	01	X

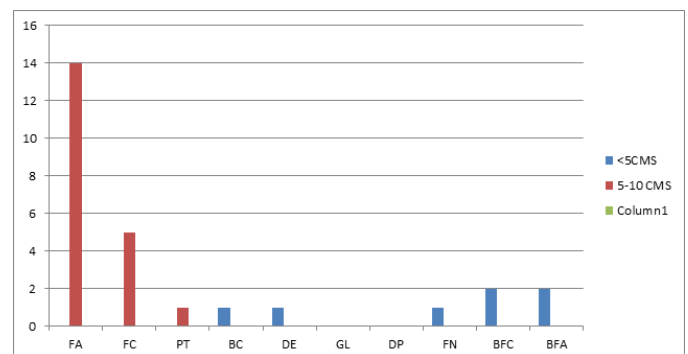
Bilateral Fibroadenoma	X	X	02	X	01	X
Total	26	02	07	20	05	01

Fig 9: A size of lump in <6 months duration



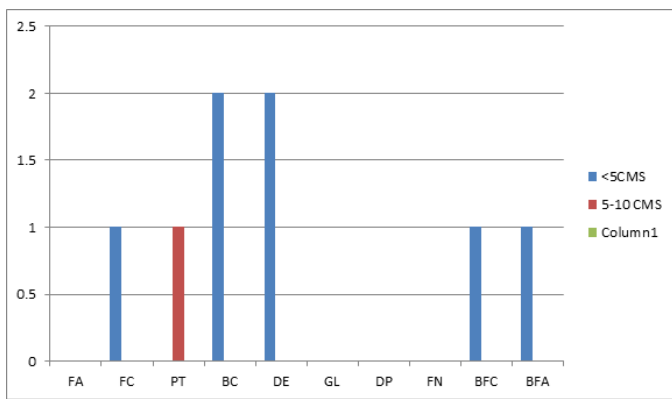
(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Fig 9: B size of lump n 6-12 months duration



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Fig 9: C size of lump in > 12 months duration

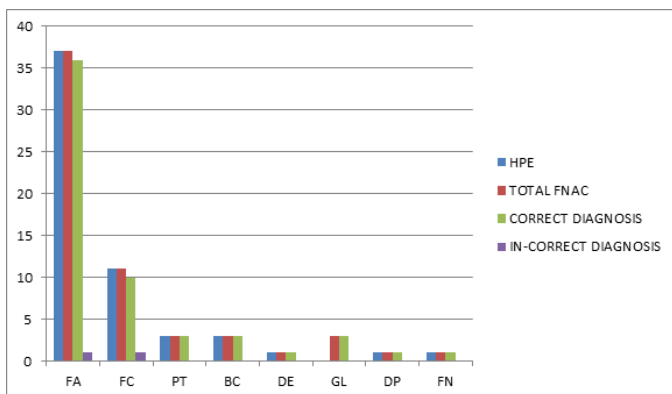


(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia, GL – Galactocele, DP- Duct papilloma, FN- Fat

Table 11: correlation between fnac & histopathological diagnosis

Type of disease	hpe	fnac			
		No. of cases of FNAC	Correct Diagnosis	In-Correct Diagnosis	% Of Accuracy
Fibroadenoma	37	37	36	1	97.3
Fibrocystic disease	11	11	10	1	90.9
Phylloides tumour	3	3	3	X	100
Breast cyst	3	3	3	X	100
Duct ectasia	1	1	1	X	100
Galactocele	X	3	3	X	100
Duct papilloma	1	1	1	X	100
Fat necrosis	1	1	1	X	100
Total	57	60	58	2	

Fig 10: relation with fnac & histopathological diagnosis



(FA – Fibroadenoma, FC- Fibrocystic disease, PT – Phylloides tumour, BC- Breast cyst, DE- Duct ectasia,

necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Correlation between fnac diagnosis and histo pathological diagnosis is depicted in table-11

In diagnosing fibroadenoma, the accuracy of FNAC as compared with final histopathological diagnosis was found to be (97.3%) and in diagnosing fibrocystic disease, the accuracy was (90.9%) 100% accuracy was obtained in diagnosing phylloides tumour, duct ectasia and duct papilloma.

GL – Galactocele, DP- Duct papilloma, FN- Fat necrosis, BFA – Bilateral fibroadenoma, BFC – Bilateral fibrocystic disease.)

Out of 60 cases skin changes are noticed in 05 cases (06.49%) and all the cases were phylloides tumour. Nipple retraction seen in 05 cases (06.49%). Phylloides tumour was the cause in 04 cases (0.19%) and duct ectasia in 01 case (1.29%).

Breast enlargement is seen in 05 cases and all were the case of phylloides tumour.

Investigations

Interpretation of fnac

In diagnosing fibroadenoma the accuracy of FNAC as compared with final histopathological diagnosis was found to be 97.3% and in diagnosing fibrocystic disease the accuracy was found to be 90.9%. 100% accuracy was found in diagnosing phylloides tumour, breast cyst, duct ectasia, duct papilloma, gynecomastia and galactocele.

Interpretation of ultrasonography

Breast sonography was found accurate in 92.89% in diagnosing breast mass as fibroadenoma. It is 63.63% accurate in relation to histopathological (final) diagnosis, obtained in diagnosing fibrocystic disease. 100% accuracy was obtained in diagnosing breast cyst.

Interpretation of radio-mammography

This investigation done in 12 cases out of 60 cases, 3 cases were of phylloides tumour, 3 cases were of fibroadenoma and 5 cases were of fibrocystic disease, however the results for this case were found to be accurate in 66.6% of cases in diagnosing the phylloides tumour. But the accuracy in diagnosing fibroadenoma was 88.3% and in diagnosing fibrocystic disease was 66.66%. Overall accuracy was 75%.

Management protocol utilized

Patients were treated in majority of cases by surgical excision of the lesion (Lumpectomy) followed by biopsy.

In fibroadenoma, excision followed by biopsy used as the sole form of treatment in 100% of cases.

In Fibrocystic disease treatment with analgesic primrose oil and reassurance utilized. 40% of cases required Danazol in addition. 6 cases were treated with lump excision and sending the tissue for biopsy. In all cases of fibrocystic disease whether treated conservatively or

surgically, biopsy is taken and histopathological examination done.

In Phylloides tumour, simple mastectomy was done in all case except in one cases where lumpectomy done. 6 month after lumpectomy the patient again came with recurrence and then simple mastectomy was done.

In Duct ectasia micro dochecto my done and in duct papilloma excision of major duct done. In fat necrosis excision of the lump is done.

In Breast cyst aspiration of contents was done. In one case of breast cyst, the cyst does not resolve after aspiration and the aspirate was blood stained, so the patient was subjected to excision biopsy.

In Galactocele aspiration of the contents was done.

follow up within period

There were good results after surgery of fibroadenoma, duct ectasia and duct papilloma. No recurrence during the period of follow up in these cases.

Discussion

60 Patients of premenopausal age group, suffering from benign breast lumps were included in our study and the results were analysed.

Relation with age

Maximum numbers of benign breast lumps were found in the age group of 15-25 years. Most common benign breast lump was fibroadenoma which was found in the age group of 15-25 years. These findings were similar with the previous study of Sandison (1955). Stewards stated that fibroadenoma is the most frequent benign breast lump in the women in the age group of 20-35 years. Sandison (1958) states that maximum incidence of fibroadenoma occur in the age group of 21-25 years. Thus above observation by Stewards, Sandison and Evans is consistent with our observation for the incidence in relation to age. In the present study,

fibrocystic disease was found most commonly in the age group of 26-35 years/ according to Haagen Sen (1956) peak age for fibrocystic disease is 35 years, which support our observation.

In our study duct ectasia in patient was aged 45 years (nearing menopause) as per Frantz Melcher and Auchinlaus (1951) duct ectasia occur in postmenopausal women which is near to our observation. In the present study one patient of phylloides tumour was found in the age 26 and the other 33 years. As Stephenson et al 1952 tumour have highest incidence in 3rd decade. Thus our observation is in accordance with this reference. In our study bilateral fibroadenoma is 2.7% which is nearly equal to the studies by Aisha Memon Shahida Parveen¹⁰ and AK Sangrasai (2007 world J of Med. Sci.) where bilateral cases were 3.7%.

Relation with marital status

In our study majority 60% of patients were married. This figure is slightly high which may be explained from the fact that early marriage is common in our country. Fibroadenoma was found commonly in unmarried women (59.45%) and fibrocystic disease was found commonly in married women. The former observation coincides with most references but latter observations did not coincide. However it is explained by early marriage in our country. Moreover shyness of unmarried women prevents them from early presentation. Homesh et al¹¹ (2008) in his study showed 69.3% of 296 patients with benign breast lumps were married and he had given the similar reason for reluctance of young unmarried women to present to the OPD in the developing countries.

Relation with parity

In our study benign breast lumps were most common. Nulliparous including unmarried constituted 41.7% of total benign breast lump. Among the parous women having one child constituted 30% of total benign breast lump. Bright et al (1989) found parity as protective for benign breast diseases which was consistent in our study.

Relation with OCP

In our study 42.8% of patients with fibrocystic disease used oral contraceptive pills and the remainder 57.14% of patient were not used OCP. This is consistent with Bright RA et al 1989 who observed the use of OCP and exogenous oestrogen is strongly protective for benign breast lumps. Vessey & Yates et al (2007) confirmed that OCP use significantly decreases the incidence of fibroadenoma and fibrocystic disease with increased duration of use with the new formulation.

Relation with side and site of lesion

Majority of lesion included in our study affected the right breast 58.34% and 8.33% affected the both breast the upper and outer quadrant was found to contain maximum number of lesion (58.3%) because maximum number of glandular tissue is in upper outer quadrant of the breast. It is consistent with the findings Hussain et al¹³ (2005), in his series had (58%) with a lump in the upper & outer outer quadrant and 29% in the upper & inner quadrant while 8% patients had palpable lump in the lower & outer quadrant. Our study is also consistent with the recent study done in Somaiya Medical college & Research centre (2009).

Investigations

Histopathological examination

It was taken as a gold standard against which accuracy of the investigation compared. It was presumed to be

final and 100% diagnostic. Among all breast lump examined 61.6% were due to fibroadenoma 18.33% were due to fibrocystic disease and 5% were due to breast cyst. Diagnosis of phylloides tumour was made in 5% cases. Duct papilloma 1.66%. As per Mc Donald & Harrington (1950) phylloides tumour is benign in 90% and malignant in 10%. In the present study all cases of phylloides tumour were benign. Tiwari et al¹⁴ (2007) also reported fibroadenoma as the commonest pathology (39.6%) other condition such as breast abscess, fibrocystic disease duct ectasia and galactocele ranged from 5.5% to 7.7%.

Fine needle aspiration cytology

In the present study the accuracy of FNAC in the diagnosis of benign breast lump were 98.5% in diagnosing fibroadenoma the accuracy was 97.3% and in fibrocystic disease accuracy was 90.9%. 100% accuracy was obtained in cases of phylloides tumour breast cyst, duct ectasia galactocele duct papilloma and fat necrosis. Thus our study is in consistent with Ackerman (1958) who observed average sensitivity about 87% and specificity close to 100% A similar study was done at Lique Medical College Hyderabad shown a diagnostic accuracy of 96%, sensitivity 96.5% and specificity 96.4%.

Radio-mammography

In our present study the method was found very helpful. The accuracy in diagnosing fibroadenoma was 85.33%, in fibrocystic disease 66.6% and in phylloides tumour it was 66.6%. Overall accuracy was 25% Hassler Gerson Chohan observed accuracy of Radio-mammography as 90% which is almost consistent with our study with limited number of patients.

Ultrasonography

In our study Ultrasonography was found accurate in diagnosing fibroadenoma in 90.9% and in fibrocystic disease it was accurate in 66.6%. 100% accuracy was found in diagnosing breast cyst.

Management

Patients were offered conservative treatment with assurance drug therapy with analgesics and Danazol and surgical treatment with excisional biopsy. 65% of total cases included in the study were treated by surgical excision followed by biopsy. In case of fibroadenoma excision followed by biopsy was done in 100% of cases in our series. However, some authors advocate conservative treatment in women <30 years of age. In fibrocystic disease apart from biopsy no surgical interventions were done as these patients were included the spectrum of ANDI by Highveld. Mansel. RE, only medical treatment with assurance and analgesics used. In 50% cases of fibrocystic diseases Danazol was used in addition.

In duct ectasia microdochectomy was done and in duct papilloma excision of the major duct done. In fat necrosis excision biopsy was done. In phylloides tumour simple mastectomy was done.

Follow-up studies

As the period of study was one year, it is difficult to draw a conclusive opinion as the progress of benign lesion is very slow. To show any recurrence long term follow up required. There was good result after surgery of fibroadenoma, abscess, duct ectasia, duct papilloma and no recurrence found during the follow up period. Fibrocystic disease recurred in spite of treatment with drugs and assurance. Recurrence after 6th month was found to be 16%. To conclude apart from recurrence of

mastalgia in fibrocystic disease the result of surgery in most benign lesions of breast is quite satisfactory.

Conclusion

60 patients of premenopausal age group with benign breast lumps were included in this study admitted in MGM Medical College and Hospital, Navi Mumbai. Most of the patients were examined clinically by breast sonography, by FNAC and histopathological examination. The conclusions are as follows:

- Maximum numbers of cases of benign breast lumps were found in the age group of 15-25 years. Fibroadenoma was found to be common in the age group of 15-25 years. The youngest was one 13 years of age and the oldest was 44 years of age.
- Fibrocystic diseases were found commonly in the age group of 26- 35 years.
- Married patients comprised 60% of patients which is slightly higher. Fibrocystic diseases were found to be common in married women, fibroadenomas were found to be common in unmarried women.
- Lumps were the major complaints in majority of fibroadenomas whereas in fibrocystic diseases lump with pain was the common complaints. 3.33% of patients presented with discharge from nipple.
- The size of the lump was proportionate to the duration of the symptoms.
- Benign breast lumps are very slowly growing tumour.
- Majority 41.7% of patients were either unmarried.
- In 27.2% of cases of fibroadenoma, pain was found to be exaggerated during menstruation. In fibrocystic diseases the figure was about 55.5%.
- In this study 42.8% of patients with fibrocystic diseases used oral contraceptive pills. In fibroadenoma oral contraceptive pills users were 2.85%, so the cases of oral contraceptive pills used in fibroadenoma are low.

- Right breast was affected in majority 58.34% of patients and upper quadrant of the breast was the most common site of the lump 58.3%.
- Histological examination was the gold standard with 100% accuracy against which other parameters compared.
- FNAC showed overall accuracy rate in diagnosing fibroadenoma was 97.3% and in diagnosing fibrocystic disease it was 90.9%. accuracy obtained in diagnosing duct ectasia, phylloides tumour, duct papilloma and breast cysts.
- Radio mammography was 88.83% accurate in diagnosing fibroadenoma and 66.6% in cases of fibrocystic diseases. In phylloides tumour it was 66.65% accurate.
- Accuracy of breast sonography in diagnosing fibroadenoma was 90.9% and in diagnosing fibrocystic disease it was 66.6%. 100% accuracy was obtained in breast cyst.
- 15 patients offered conservative treatment in fibrocystic diseases in the form of assurance, drugs as analgesics and Danazol and surgical excision.
- Excision done in 100% of cases of fibroadenoma.
- Apart from persistence of mastalgia in fibrocystic diseases, the outcome of surgery in benign breast diseases is quite promising.
- Longer period of follow up could have been truly reflective of the date which was not included in this series due to shorter period of follow up.

Ethical approval

The study was approved by the Institutional Ethics Committee

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