Section: General Surgery

Original Research Article

A CLINICAL STUDY OF BENIGN BREAST LUMPS IN A TERTIARY CARE CENTER

Mhashevisu Sothu[1], Medo M. Kuotsu[2], Menguzenuo Margaret Yhome[3], P. P. Das[4], Lucy Laino[5]

[1]*Senior Resident, Department of General Surgery, Nagaland Institute of Medical Sciences and Research, Kohima, Nagaland, India*
[2]*Assistant Professor, Department of General Medicine, Nagaland Institute of Medical Sciences and Research, Kohima, Nagaland, India, *Corresponding Author*
[3]*Assistant Professor, Department of Microbiology, Nagaland Institute of Medical Sciences and Research, Kohima, Nagaland, India*
[4]*Professor, Department of General Surgery, Gauhati Medical College and Hospital, Guwahati, Assam, India*
[5]*Consultant Specialist, Department of Health and Family Welfare, Imphal, Manipur, India*

Received *: 28/01/2025*
Received in revised form *: 08/04/2025*
Accepted *: 23/04/2025*

Corresponding Author:
Dr. Medo M. Kuotsu,
Assistant Professor, Department of General Medicine, Nagaland Institute of Medical Sciences and Research, Kohima, Nagaland, India.
Email: medogeorge@rocketmail.com

DOI: 10.70034/ijmedph.2025.2.117

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (2); 651-655

ABSTRACT

Background: Benign breast disease accounts for majority of the clinical presentations related to the breast. Its occurrence is much more common than breast cancer in the developed world. The incidence of benign breast lesions rises in the second decade of life, while the malignant breast diseases increase after menopause. Fibroadenoma is the most common lesion of the breast. The study was done to evaluate the trend of benign breast lumps in patients in a tertiary care center.

Materials and Methods: An observational study was conducted among 50 female patients with benign breast lumps attending the outpatient department and wards of the department of General Surgery of a tertiary care center in Guwahati, Assam. The study was conducted over a period of one year from July 2012 to June 2013 after obtaining ethical approval from the Institutional Ethics Committee. The diagnosis was made through clinical examination, biopsy for cytology and histopathological studies.

Results: The age distribution had majority in 21–30 years age group. Painless lump in 74% cases was the most common presentation. The quadrant most involved in the study population was the upper outer quadrant. Fibroadenoma in 88% cases was the most common clinical diagnosis among the benign breast tumors. The cases were treated by surgical methods in view of the anxiety regarding symptoms and poor socioeconomic status leading to difficulty in follow up.

Conclusion: The benign lump of the breast is most common in the second to fourth decade of life. The occurrence of benign breast tumors is more common than breast cancer. Fibroadenoma remains the most common benign breast tumor. Clinical examination, fine needle aspiration biopsy for cytology and histopathology enhances the diagnostic accuracy.

Keywords: Breast lump, Age, Benign, Fibroadenoma, Histopathology

INTRODUCTION

The breast is a modified sweat gland composed of a complex structure and is a distinguishing feature of the class ‘Mammalia’ Benign proliferations of the breast are considered as aberrations of normal development and involution. Benign breast disease accounts for majority of the clinical presentations related to the breast.[1,2] Its occurrence is much more common than breast cancer in the developed world.[3] The incidence of benign breast lesions rises during the second decade of life and peaks in the fourth and fifth decades, while the malignant breast diseases incidence increase after menopause.[4] Fibroadenoma is the most common lesion of the breast.[5] In evaluation of breast lumps a formidable tool is a triple assessment done by clinical examination, use of imaging such as ultrasonography, mammography and pathological examination by fine needle aspiration cytology (FNAC) or core needle biopsy. The study was done to evaluate the trend of benign breast lumps in

patients in a tertiary care center in North East region of India.

MATERIALS AND METHODS

Study design: An observational study was done in the outpatient department and wards of department of General Surgery, Gauhati Medical College and Hospital, Guwahati over a period of 1 (one) year from July 2012 to June 2013. The study was done to evaluate the trend of benign breast lumps in patients in a tertiary care center.

Ethical Clearance: The study was carried out after obtaining ethical approval from the Institutional Ethics Committee, Gauhati Medical College and Hospital, Guwahati. All participants were informed about the nature of the study which was fully explained in participant information sheet and only those who agreed to undergo the study signed in the informed consent form. Their participation was completely voluntary and right to deny to participate in the study was reserved. Privacy and confidentiality was maintained at all cost for each participant.

Inclusion Criteria

Age more than 18 years who were clinically diagnosed with palpable benign breast lump. Those who gave consent to undergo the study.

Exclusion Criteria

Those cases of breast lump which clinically appeared as malignant or on histopathological examination were excluded from the study. Those not willing to participate in the study were excluded.

Procedure: The study subjects were 50 patients presenting with palpable breast lumps. They were assessed by detailed history taking using a preformed comprehensive proforma, clinical breast examination, ultrasonography, fine needle aspiration cytology (FNAC) and histopathological examination. Clinical Breast Examination: The breasts are assessed for nodularity and presence of any dominant mass or thickening. Examining the breasts for symmetry is an important method to evaluate subtle thickenings or ridges. To determine symmetry, both breasts are examined at the same time in the mirror image locations. When the subject has identified a palpable abnormality on self-examination, they were asked to point with a finger to exactly where the mass was felt. The breast examination begins with a visual inspection with the patient sitting. The breasts are observed for size, shape, symmetry, skin colour, skin texture, the appearance of the nipple-areolar complex and the presence of any skin or nipple retraction. The breasts are observed with the subject in each of the following sitting positions: arms relaxed at the side, arms raised over the head and hands placed on the hips and pushing inward (contraction of the pectoralis major muscle) and semi recumbent position. The breasts are inspected from the front and from each side. For the palpation of the breasts, the subject is placed in the supine position with the ipsilateral arm over the head. To palpate the breast tissue, the pads of the first 3 fingers are used, using overlapping dime-sized circles. The breast tissue is palpated using 3 different levels of pressure - light, medium and deep to examine the different depths of the breast tissue. It is important to examine the entire breast and not just the breast mound. There are 3 typical patterns used to palpate the breast: the circular technique, the wedge technique, and the vertical strip technique. The next step was to palpate the regional lymph nodes. These include the supraclavicular, infraclavicular and axillary nodes. These are best examined with the subject in the sitting position. The clinical diagnosis was confirmed by ultrasonography of breast, fine needle aspiration cytology from the lump and histopathological examination of the excised specimen.

Statistical analyses: The collected data was analysed using SPSS (Statistical Package for Social Sciences software) version 21.0. Microsoft word and Excel were used to generate graphs, tables etc. Descriptive statistics like frequency, percentage, mean, standard deviation and proportions were used. A probability value < 0.05 was considered as statistically significant. Throughout the study total confidentiality was maintained by coding of patient's data. The data collected were documented and analysed statistically to draw a useful conclusion.

RESULTS

Table 1: Baseline characteristics of the study population.

Characteristics	Percentage % (n)
Age in years	
≤20	16% (08)
21 – 30	46% (23)
31 – 40	26% (13)
41 – 50	10% (05)
≥51	2% (01)
Clinical features	
Painless Lump	74% (37)
Painful Lump	20% (10)
Recurrent Lump	2% (01)
Lump & Nipple Discharge	4% (02)
Duration of symptoms	
0 – 4 months	16% (08)

5 – 9 months	48% (24)
10 – 14 months	18% (09)
15 – 19 months	8% (04)
20 – 24 months	8% (04)
>24 months	2% (01)
Site of lesion	
Right	38% (19)
Left	54% (27)
Bilateral	8% (04)
Size of lump	
< 5 cm	90% (45)
> 5 cm	10% (05)

Table 2: Characteristics in relation to the nature of tumor in the study population.

Characteristics	Percentage % (n)
Mobility of lump	
Freely Mobile	86% (43)
Restricted Mobility	14% (07)
Consistency of lump	
Firm	94% (47)
Hard	2% (01)
Variable	4% (02)
Clinical diagnosis	
Fibroadenoma	88% (44)
Ductal Papilloma	4% (02)
Phyllodes Tumor	4% (02)
Fibroadenosis(Fibrocystic disease)	2% (01)
Periductal mastitis	2% (01)

Table 3: Co-relation of clinical diagnosis with diagnostic methods in the study population

Characteristics	Fibroadenoma	Ductal Papilloma	Phyllodes Tumor	Fibroadenosis	Periductal mastitis
Clinical diagnosis	44	02	02	01	01
Ultrasonography	48	01	0	0	01
FNAC	46	02	01	0	01
HPE	45	02	02	0	01
Treatment					
Excision	44	0	0	01	0
Wide local excision	0	0	01	0	01
Simple Mastectomy	0	0	01	0	0
Microdochectomy	0	02	0	0	0

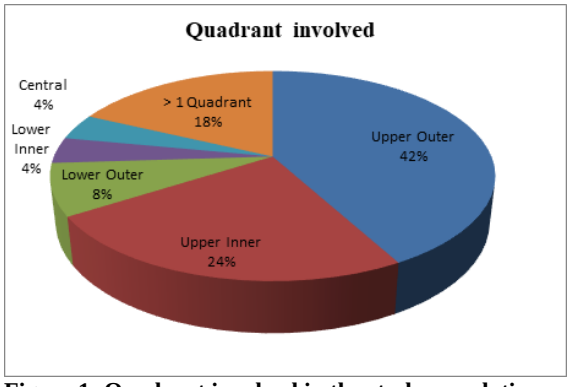

Figure 1: Quadrant involved in the study population

An observational study of 50 cases of benign breast lumps was done based on those cases of breast lumps which on examination appeared benign and confirmed by ultrasonography and fine needle aspiration cytology (FNAC) results with the post-operative histopathological findings.

The baseline characteristic of the study population is listed in [Table 1]. The age distribution had majority in 21-30 years age group. The gender included in our study population were only female. The most common presentation was painless lump in 37(74%) cases, followed by painful lump in 10(20%) patients. 24 (48%) cases presented in 5-9 months of symptoms which was in majority. The most common site of lesion in the study population was the left breast in 27 (54%) cases. The size of the lump at presentation in 45(90%) cases was less than 5 cm in their greatest dimension. In our study, the quadrant most involved in the study population was the upper outer quadrant as shown in [Figure 1].

Characteristics in relation to the nature of tumor in the study population is listed in Table 2. In our study, 43(86%) lumps were freely mobile within the breast tissue and 47(94%) cases had firm lump in consistency on examination. Those findings were suggestive of a clinical diagnosis. Fibroadenoma in 44(88%) cases was the most common clinical diagnosis among the benign breast tumors in the study population. The incidence of fibroadenoma was most common in the 21 to 30 years age group.

Co-relation of clinical diagnosis with Ultrasonography

In our study, on ultrasonography 48 cases were diagnosed as fibroadenomas. 44 cases clinically diagnosed as fibroadenoma and 1 case as periductal mastitis were consistent on ultrasonography. Clinically diagnosed intraductal papilloma in 2 cases, on ultrasonography had 1 case as

fibroadenoma. 2 cases of phyllodes tumours and 1 case of fibroadenosis diagnosed clinically also turned as fibroadenoma on ultrasonography [Table 3].

Co-relation of clinical diagnosis with Fine Needle Aspiration Cytology (FNAC)

In our study, on cytological examination 46 cases were diagnosed as fibroadenomas. 42 cases were consistent with the diagnosis of fibroadenoma, 3 cases as fibrocystic disease, 2 case as ductal papilloma. Out of 2 cases clinically diagnosed as phyllodes tumor, 1 case turned out as fibroadenoma on cytology. 1 cases of clinically diagnosed periductal mastitis were consistent on cytology [Table 3].

Co-relation of Fine Needle Aspiration Cytology (FNAC) with Histopathological Examination (HPE)

In our study, on histopathological examination, 42 cases out of 43 cases of fibroadenoma on cytology were consistent with the diagnosis but 1 turned out as phyllodes tumor of low grade on histopathological examination. Out of 3 cases of fibrocystic disease on cytology, 2 cases reported as fibroadenoma on histology. 2 cases of ductal papilloma, 1 case of phyllodes tumors and 1 case of periductal mastitis were consistent with the histopathological examination [Table 3].

DISCUSSION

In our study of 50 cases of benign breast lumps in females, the age distribution of the study population had majority in the age group of 21-30 years, consistent to the findings of studies done by Khanzada TW et al,[6] and Khanna S et al.[7] The most common presentation was painless lump in majority of the study population. Chaudhuri M et al,[8] reported similar finding in their study.

The majority of the patients presented within 5-9 months of duration of symptoms. The length of the time elapsing between the first symptoms of breast lesion and its diagnosis is an important prognostic factor.[9] The most common site of lesion was the left breast and the quadrant most involved in the study population was the upper outer quadrant.[10] Fibroadenoma are most commonly found in upper and outer quadrant of the breast due to the concentrated presence of glandular tissue.

In our study, 90% patients had lesion size less than 5 cm. The differences in the size of the tumors can be attributed to the time of presentation of the disease to the hospital.[11] Fibroadenoma is the commonest type of benign breast tumors in the study population.[12] Rangabashyam N et al,[13] in their study of spectrum of benign breast lesions reported fibroadenomas as the most common benign tumour of the breast.

In our study, 43 cases had cytological diagnosis as fibroadenoma, of which 42 (97.7 %) were proved to be fibroadenoma on biopsy. Sensitivity on cytology for fibroadenoma was 95.5% and specificity of 80%.[14,15] Bansal RL et al,[16] and Papilla K et al,[17] in their study reported accuracy rate of 97.8% and 97.2% respectively on FNAC for the diagnosis of benign breast tumors.

The diagnostic accuracy and predictive value of clinical examination of palpable breast lump is limited but it is greatly enhanced when combined with ultrasonography and FNAC.

In our study, the patients opted for surgical treatment in view of the anxiety regarding symptoms and poor socioeconomic conditions leading to difficulty in follow up. Though benign breast lumps are managed conservatively or surgically. Simple excision, wide local excision, microdochectomy and simple mastectomy were the surgical treatment done depending upon the type of the benign breast lesion.

CONCLUSION

The benign lumps of the breast constitute a group of tumors occurring most common in the second to fourth decade of life. Lump in the breast is the most common presentation of benign breast tumors. The occurrence of benign breast tumors is more common than breast cancer. Fibroadenoma remains the most common benign breast tumor. Clinical examination, fine needle aspiration biopsy for cytology and histopathology enhances the diagnostic accuracy. The limitation of this study can be attributed to it being a single center study with limited sample size which may not be enough to generalize the findings in the entire region. Further studies in larger groups is required for more validation.

REFERENCES

1. Hutchinson WB, Thomas DB, Hamlin WB et al. Risk of breast cancer in women with benign breast lesion. J Natl Cancer Inst. 1980; 65:13-20.
2. Hughes LE, Mansel RE, Webster DJT. Aberrations of normal development and involution (ANDI): a new perspective on pathogenesis and nomenclature of benign breast disorders. Lancet 1987;2:1316–19.
3. Mansel RE. Benign breast disease: Practitioner. 1982; 232:830-7.
4. Shaaban AM, Sloane JP, West CS et al. Histopathologic types of benign breast lesions and risk of breast cancer. Am J Surg Pathol 2002;26: 421-30.
5. El-Wakeel H, Umpleby HC. Systematic review of fibroadenoma as a risk factor for breast cancer. Breast 2003;12: 302–7.
6. Khanzada TW, Samad A, Sushel C. Spectrum of benign breast diseases. Pak J Med Sci 2009;25(2):265-8.
7. Khanna S, Arya NC, Khanna NN. Spectrum of benign breast disease. Indian J Surg. 1988;50:169-75.
8. Chaudhuri M, Sen S, Sengupta J. Breast lumps: a study of 10 years. J Indian Med Assoc. 1995 Dec;93(12):455-7.
9. Dener C, Inan A. Breast abscesses in lactating women. World J Surg 2003;27:130-133.
10. Masciadri N, Ferranti C. Benign breast lesions: Ultrasound. J Ultrasound. 2011 Jun; 14(2):55-65.
11. Hague R, Tyagi SP, Khan MH, Gahlaut YVS. Breast lesions. A clinicopathological study of 200 cases of breast lumps. Ind J Surg.1980;42:419-25.

12. Shukla HS, Kumar S. Benign breast disorders in nonwestern populations: Part II--Benign breast disorders in India. World J Surg. 1989 Nov-Dec;13(6):746-9.
13. Rangabashyam N, Gnanaprakasam D, Krishnaraj B, Manohar V, Vijayalakshmi SR. Spectrum of benign breast lesions in Madras. J R Coll Surg Edinb. 1983 Nov;28(6):369-73.
14. Hand U, Mohan H, Bharadwaj S, Punia RPS. Fine needle aspiration as a diagnostic tool in breast lesions.I J S 2000;. 62: 125-7.
15. Stavrić GD, Tevcev DT, Kaftandjiev DR, Novak JJ. Aspiration biopsy cytologic method in diagnosis of breast lesions: a critical review of 250 cases. Acta Cytol. 1973 May-Jun;17(3):188-90.
16. Bansal RL, Sankaran V, Veliath J. Role of FNAC in the diagnosis of breast lumps and its histopathological correlation. J of Cytology 1985; 2:62-6.
17. Papilla K, Verma K. Fine needle aspiration cytology in the diagnosis of benign mammary lesion. Ind J Surg 1992; 54 25-9.