

## PATTERN OF BENIGN BREAST DISEASES: A NEGLECTED ENTITY

Rameshkumar Pandey<sup>1\*</sup>, Ravinder Narang<sup>2</sup>, Bhupendra Mehra<sup>3</sup> and Dilip Gupta<sup>4</sup><sup>1</sup>Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra.<sup>2</sup>Emeritus Professor, Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra.<sup>3</sup>Professor, Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra.<sup>4</sup>Professor and Head, Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra.

\*Correspondence for Author: Rameshkumar Pandey

Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra.

Article Received on 13/12/2015

Article Revised on 03/01/2016

Article Accepted on 25/01/2016

## ABSTRACT

**Background:** To study the clinical profile and pattern of benign breast disease and its pathological correlation in patients undergoing FNAC/Biopsy. **Methods:** This is a cross-sectional study of females with breast disease presenting to surgery department over a period of one year. Patients with obvious malignancy and males were excluded from the study. Clinico-pathological evaluation was done as per standard proforma. **Results:** A total of 715 females were included in the study. Fibroadenoma (42.8%) and fibroadenosis (26.5%) were the commonest both presenting mostly at 21-40years of age. Right side involvement was most common. The sensitivity of clinical diagnosis was found to be 99.4% for fibroadenoma, 97% for fibroadenosis, 85.8% for galactocele, and 100% for phylloides tumor and breast abscess. **Conclusion:** Benign breast diseases are common problems of 3<sup>rd</sup> and 4<sup>th</sup> decade in females and raises considerable fear of malignancy. The accuracy of clinical examination for detection of benign breast diseases was 99% as compared to histopathology and 96% as compared to cytology.

**KEYWORDS:** Benign, Breast diseases, Fibroadenoma, fibroadenosis.

## INTRODUCTION

Breast cancer is most common in females affecting one out of nine women sometimes in their lifetime. Benign lesions of the breast are much more frequent than malignancies. However benign pathological states have always been neglected in comparison to malignancy though they account for almost 90% of the diseases of the breast.<sup>[1]</sup> Cultural inhibition prevents many Indian females from approaching a health care facility. The term "Benign breast diseases" includes a heterogeneous group of lesions and may present with wide range of symptoms. The popular classification of ANDI is not of much help in clinical diagnosis because it does not distinguish between the normal physiological changes from the pathological ones.<sup>[2]</sup> Nashville classification given by Love S et al is more satisfying. BBD is classified by two system. Pathologically it is divided into: Non-proliferative lesions, Proliferative lesions without atypia, and Proliferative lesions with atypia. Clinically BBD is classified into: Physiological swelling, Nodularity, Mastalgia, Dominant lumps, Nipple discharge and Inflammation. Proper evaluation and histological correlation will help alleviate unnecessary anxiety of patient as also early detection of pre-malignant conditions.

## MATERIAL AND METHODS

A cross sectional study was carried out in a rural medical college in central India. Due clearance was taken from ethical committee. Written informed consent was taken from patients prior to enrollment in the study. A clinical data form was made for thorough evaluation. Detailed history was taken including risk factors. Clinical examination was recorded as to size and no. of lumps, location, tenderness, nipple discharge, axillary lymphadenopathy. An appropriate clinical diagnosis was made. Patients were then investigated by baseline blood tests, FNAC of lump, nipple discharge cytology wherever applicable. Indicated cases were then operated and histopathology report was recorded. Observations were made in master chart and result analyzed.

## RESULT

The present cross-sectional study was carried out in a rural medical college and hospital located in Vidarbha region of central India. A total of 21659 new patients attended the surgery OPD. Among them, 13618 (62.8%) patients were males and 8041 (37.2%) patients were females. A total of 781 patients had breast disease, out of which 770(98.5%) were females and 11(1.5%) were males. Among the 770 females, 715(92.8%) patients had benign breast diseases and were included in the study.

**Table 1: Age versus Benign breast diseases**

| Age group (years) | No of patients (N = 715) | Percentage ( % ) |
|-------------------|--------------------------|------------------|
| <10               | 1                        | 0.13             |
| 11-20             | 135                      | 18.88            |
| 21-30             | 328                      | 45.87            |
| 31-40             | 185                      | 25.87            |
| 41-50             | 61                       | 8.53             |
| 51-60             | 4                        | 0.55             |
| 61-70             | 0                        | 0                |
| >70               | 1                        | 0.13             |

Benign breast disease was commonly seen in age group of 21-30years constituting 45.87% of all patients followed by 185(25.87%) cases in age group of 31-40years. Thereafter it was observed in 2<sup>nd</sup> decade, then 5<sup>th</sup> decade in decreasing order. It is extremely uncommon in <10yrs and above 60years.

**Table 2: Side of involvement in BBD**

| Side of involvement | No of patients (N = 715) | Percentage ( % ) |
|---------------------|--------------------------|------------------|
| Right               | 342                      | 47.8             |
| Left                | 290                      | 40.6             |
| Both                | 83                       | 11.6             |

Among all the benign breast diseases, right sided breast involvement was more common constituting 342 (47.8%) cases while left breast involvement was less common constituting 290 (40.6 %) patients. Bilateral involvement was seen in only 83(11.6%) patients. Considering the pattern of benign breast diseases, fibroadenoma was the most common lesion constituting 306 (42.8%) cases followed by fibroadenosis (fibrocystic disease) constituting 189 (26.5%) cases, mastalgia constituting 93 (13.0%) cases, breast abscess constituting 65 (9.1%) cases and mastitis constituting 30(4.2%) cases. Other benign breast diseases included papilloma 8(1.1%) cases, galactocele 7(1.0%) cases, duct ectasia 6 (0.8%) cases, cystosarcoma phyllodes tumour and tuberculosis each 4(0.6%) cases and lipomas 3 (0.4%) cases.

**Table 3: Pattern of benign breast diseases**

| Diagnosis         | Total       |
|-------------------|-------------|
| Fibroadenoma      | 306 (42.8%) |
| Fibroadenosis     | 189 (26.5%) |
| Mastalgia         | 93 (13.0%)  |
| Breast abscess    | 65 (9.1%)   |
| Phylloides tumour | 4 (0.5%)    |
| Others            | 58 (8.1%)   |
| Total             | 715(100%)   |

Majority of the solitary fibroadenoma 157 (55.5%) cases had size < 2 cm Upper outer quadrant was involved more commonly followed by upper inner quadrant and then lower outer quadrant. Right side was more commonly involved in cases with fibroadenosis. Most cases with fibroadenosis involved more than one quadrant to the extent of 85 (45.0%) cases followed by upper outer quadrant constituting 39 (20.6%) cases and lower outer quadrant constituting 28 (14.8%) cases. Breast abscess was more commonly seen in age group of 21-30 years constituting 40 (61.5%) cases. Left side was more commonly involved in cases with breast abscess constituting 37(56.9%) cases as compared to right side constituting 25(38.5%) cases. Upper outer quadrant was involved more commonly in patients with breast abscess constituting 25 (38.5%) cases followed by lower outer quadrant constituting 17 (26.2%) cases. Mastalgia was more commonly seen in age group of 21-30 years. Among cases with mastalgia, all quadrant involvement was seen more commonly. In all, pain was seen in 462 (64.6%) patients of benign breast diseases, breast lump was seen in 413 (57.7%) cases while breast nodularity was seen in all cases of fibroadenosis i.e. 189 (26.4%) cases. Nipple discharge was seen in 54 (7.5%) cases and fever was seen in 68 (9.5%) cases.

**Table 4**

| Diagnosis               | Operated | Histopath confirmation (1) | Not operated  |                                    |                   | Total (1+2+3+4) |
|-------------------------|----------|----------------------------|---------------|------------------------------------|-------------------|-----------------|
|                         |          |                            | Only FNAC (2) | Only nipple discharge cytology (3) | Only clinical (4) |                 |
| Fibroadenoma (N=306)    | 176      | 176                        | 111           | 0                                  | 19                | 306             |
| Fibroadenosis (N=189)   | 0        | 0                          | 87            | 13                                 | 89                | 189             |
| Mastalgia (N=93)        | 0        | 0                          | 0             | 0                                  | 93                | 93              |
| Breast abscess (N=65)   | 65       | 0                          | 13            | 0                                  | 52                | 65              |
| Mastitis (N=30)         | 0        | 0                          | 5             | 16                                 | 9                 | 30              |
| Papilloma (N=8)         | 2        | 2                          | 0             | 6                                  | 0                 | 8               |
| Galactocele (N=7)       | 0        | 0                          | 3             | 4                                  | 0                 | 7               |
| Duct ectasia (N=6)      | 0        | 0                          | 0             | 6                                  | 0                 | 6               |
| Phylloides tumour (N=4) | 4        | 4                          | 0             | 0                                  | 0                 | 4               |
| Tuberculosis (N=4)      | 1        | 1                          | 3             | 0                                  | 0                 | 4               |
| Lipoma (N=3)            | 1        | 1                          | 2             | 0                                  | 0                 | 3               |
| Total                   | 249      | 184                        | 224           | 45                                 | 262               | 715             |

Out of 306 cases of clinically diagnosed fibroadenoma, only 176 went histopathological confirmation. Out of 306 cases, 111 patients had only FNAC and were not operated but had fibroadenoma. Of 189 cases of clinically diagnosed fibroadenoma, in 100 patients either FNAC or follow up was done. None of these patients underwent surgery. These patients were not operated because either the patient was not willing for surgery or the patient did not follow up or the lesion was so small that patient was managed conservatively with regular follow up. Only clinical diagnosis was done in 19 cases. These 19 patients diagnosed clinically were not willing for any further investigation and were excluded in calculating clinical accuracy. Therefore the accuracy of diagnosis in fibroadenoma was nearly 100%. 65 cases of

breast abscess were operated and the diagnosis was confirmed. Fine needle aspiration cytology was done in 269 patients and correlated with clinical examination. No cases of breast abscess, lipoma were missed clinically. Two cases of fibroadenoma, three cases of fibroadenosis, two cases of mastitis, one case of galactocele, one case of duct ectasia and two cases of tuberculosis were misdiagnosed clinically. In all, 11 (4.0%) patients of benign breast lesions were misdiagnosed clinically. The overall accuracy of clinical examination is 96.0% when compared with aspiration cytology. The efficacy of clinical examination for diagnosing fibroadenomas is 98.2% while for fibroadenosis is 97.0%.

**Table 5 Efficacy of clinical examination in diagnosing different breast lesions compared to histopathology**

| Type of lesions  | No of pathologically confirmed cases (Histopathology) | No of cases correctly diagnosed by clinical examination | Error in clinical diagnosis (%) |
|------------------|---|---|---------------------------------|
| Fibroadenoma     | 176   | 175   | 1(0.6%)                         |
| Papilloma        | 2   | 2   | 0(0%)                           |
| Lipoma           | 1   | 1   | 0(0%)                           |
| Phylloides tumor | 4   | 4   | 0(0%)                           |
| Tuberculosis     | 1   | 0   | 1(100%)                         |
| Total            | 184   | 182   | 2(1.0%)                         |

Histopathological confirmation of diagnosis was done in 184 patients and correlated with clinical examination. No cases of lipoma and phylloides tumor were missed clinically. One case of fibroadenoma and one case of tuberculosis were misdiagnosed clinically. In all, 2 (1.0%) patients of benign breast lesions were misdiagnosed clinically. The overall accuracy of clinical examination is 99.0% when compared with histopathology. The efficacy of clinical examination for diagnosing fibroadenomas is 99.4% as compared to histopathology.

## DISCUSSION

The breasts are accessible organ and their examination is relatively easy. Hence most of the breast lesions are palpable. Benign breast pathologies account for 80-90% breast conditions<sup>[1]</sup> and is at least 10 times more common than carcinoma of the breast.<sup>[2]</sup> Triple assessment i.e. clinical examination, breast imaging and cytopathology have been shown to be accurate for pre-operative diagnosis of breast lesions. The present cross-sectional study was carried out in a hospital attached to a medical college in central India over a period of one year. A total of 781 patients with breast pathologies were treated in the hospital. Out of which 722 (females and males) had benign breast disease accounting for 92.4%. Benign breast diseases was more common in 21-30years age followed by 31-40yrs and 11-20years. Similar results were shown by Siddiqui et al (2003)<sup>[3]</sup>, Akhator A et al (2007)<sup>[4]</sup> and Irabor DO et al (2008).<sup>[5]</sup> Thus the present study is in concordance with the studies available in the literature. This study was done to determine the pattern of benign breast diseases in females presenting to

surgical opd. In the present study, fibroadenoma was the most frequent diagnosis (42.8%) with the highest among third decade of life. No significant difference was observed in the incidence of fibroadenoma compared with as those reported in the literature.<sup>[2,6,7]</sup> Fibroadenosis was the next common condition constituting 26.5% cases. The diagnosis was based on nodularity and premenopausal pain. There is no histological proof in majority of cases. The highest incidence was in 3<sup>rd</sup> and 4<sup>th</sup> decade. Similar findings was observed by Mima Maychet B et al 2013.<sup>[2]</sup> Irabor et al (2008)<sup>[5]</sup> and Akhator A et al (2007)<sup>[4]</sup> also observed fibroadenoma to be the commonest followed by fibroadenosis. In the present study, right side was most commonly involved that too in upper outer quadrant. This is similar to that observed by Mima Maychet B et al (2013).<sup>[2]</sup> However the difference in right and left was only marginal (4%). Akhator A et al (2007)<sup>[4]</sup> reported left side as common but there also the difference was only marginal (6%). Bilateral involvement (11.6%) was least common. Patients with benign breast disease generally presented with complaint of breast lump, pain, nipple discharge. The ratio of benign to malignant disease is 12:1 which is much higher that reported by Akhator A et al (2007).<sup>[4]</sup> They reported benign to malignant ratio as 2.6:1. The present study cannot be totally compared with other study because they reported only histopathologically proven cases of benign breast disease. Mastalgia was seen in 13% similar to 11% cases observed by Khanzada et al 2009<sup>[6]</sup>. It commonly occurred in 3<sup>rd</sup> and 4<sup>th</sup> decade of life. It was seen that accuracy of clinical examination for detection of benign breast diseases was 99% as compared to histopathology and 96% as compared to

cytology. The sensitivity of clinical diagnosis was found to be 100% for phylloides tumor and breast abscess. The sensitivity was 99.4% for fibroadenoma, 97% for fibroadenosis, 90.5% for mastitis and 85.8% for galactocele. The present study is in agreement with Iyer SP (2000)<sup>[8]</sup> for most of benign breast lesions.

### CONCLUSIONS

Benign breast diseases are twelve times more common as compared to malignant breast diseases. The common benign breast diseases seen in a rural setup include fibroadenoma followed by fibroadenosis, mastalgia, breast abscess, mastitis, papilloma, galactocele, duct ectasia, phylloides tumor, tuberculosis and lipoma in that order. Most of the benign breast diseases are commonly seen in younger age group and usually present with either breast lumps or nodularity, breast pain and nipple discharge of long duration. The efficacy of clinical diagnosis was equivalent to fine needle aspiration cytology or histopathology confirming that most of the benign breast diseases can be diagnosed clinically with precision.

### ACKNOWLEDGEMENT

There is no conflict of interest. No finance has been taken from anyone.

### REFERENCES

- Murillo Ortiz B, Botello Hernández D, Ramírez Mateos C, Reynaga García FJ. Benign breast diseases: clinical, radiological and pathological correlation. *Ginecol Obstet Mex.*, Dec 2002; 70: 613-8.
- Mima B, Maychet Sangma, Kishori Panda, Simon Dasiah. A clinico-pathological study on benign breast diseases. *Journal of Clinical and Diagnostic Research.*, 2013 Mar; 7(3): 503 – 506.
- Siddiqui MS. Breast diseases - a histopathological analysis of 3279 cases at a tertiary care centre in pakistan. *Jr Pak Med Asso.*, 2003; 53(3): 5.
- Akhator A. Benign Breast Masses in Nigeria. *Nieg Jr of Surg Sciences.*, 2007; 17: 105 - 8.
- Irabor DO. An audit of 149 consecutive breast biopsies in Ibadan, Nigeria. *Pak J Med Sci.*, 2008; 24(2): 257 - 62.
- Khanzada TW, Samad A, Sushel C. Spectrum of benign breast diseases *Pak J Med Sci.*, 2009; 25(2): 265-268.
- Bewtra C. Fibroadenoma in women in Ghana. *The Pan African Medical Journal.*, 2009; 2: 11.
- Iyer SP. Epidemiology of Benign Breast Diseases in Females of Childbearing Age Group. *Bombay Hosp Jr.*, 2000; 42: 10.
- C. Courtillot, F. Kuttenn, P. Touraine. Benign Breast Diseases. *J Mammary Gland Biol Neoplasia.*, 2005; 10: 325–335.
- Ishtiaq Ahmed Chaudhary et al. Pattern of benign Breast diseases. *J Surg Pak.*, Sep 2003; 8(3): 5-7.
- Richard J. Santen, Robert Mansel. Benign Breast Disorders. *N Engl J Med.*, 2005; 353: 275-285.
- Love SM, Gelman RS, Silen W. Fibrocystic "disease" of the breast--a nondisease? *N Engl J Med.*, 1982; 307: 1010-4.
- Haque A. Breast lesions- a clinicohistopathological study of 200 cases of breast lump. *Indian Journal of Surgery.*, 1980; August: 419 - 25.
- Ali K. Ageep. "Benign breast tumors in Red Sea State, Sudan." *Journal of Cancer Research and Experimental Oncology.*, 2011; 3.7: 84 - 87.
- Lynn C. Hartmann et al. Benign Breast Disease and the Risk of Breast Cancer. *N Engl J Med.*, July 2005; 353: 229-237.
- Aisha Memon et al. Changing Pattern of Benign Breast Lumps in Young Females. *World Journal of Medical Sciences.*, 2007; 2(1): 21-24.