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**Original Research Article**

# Scrutinizing the patients with breast lump on fine needle aspiration cytology

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## ABSTRACT

**Background:** One of the most common medical problems, women face today, is a lump in the breast. These lumps may range from simple inflammatory to malignant. In case of carcinoma, early and accurate diagnosis can save the patient from metastases thus reducing mortality and morbidity. The aim of the present study is to see the spectrum of lesion in breast lump specimens in Ibn e Sina Hospital, Multan Medical and Dental College, Multan over a period of ten years.
**Methods:** This retrospective study was carried out in the Department of Pathology, Multan Medical and Dental College Multan, Pakistan. Data were gathered from the archives of Pathology laboratory, comprising of years 2007 t0 2017, after approval from Institutional Ethical Review Committee. All the patients presented with complaint of any kind of swelling of breast were included in this study. All the demographic and clinical details of the patients were collected on proforma. Fine needle aspiration technique was used to take sample from the suspected lesional area. Descriptive statistics was used to analyze the data.
**Results:** A total of 2039 patients were presented with complaint of lump/swelling in their breast unilaterally or bilaterally. There were 628 (30.8%) benign lesions, 872 (42.8) malignant lesions, 229 cases with atypical cells. Mastitis/inflammatory lesions were seen in 167 (8.2%) cases and tuberculous granulomas were observed in 83 (4.07%) cases. Twenty cases were of miscellaneous types including lipoma, phylloda, simple cysts etc.
**Conclusions:** Findings of present study show that majority of breast lumps were malignant, benign, inflammatory and tuberculous respectively.

**Keywords:** Fine needle aspiration, Breast lump, Benign lesions, Malignant lesion, Mastitis

## INTRODUCTION

Breast carcinoma is the most common malignant neoplasm and the leading cause of death from cancer in women, with more than 1 million cases occurring worldwide annually.[1] However, in some regions of the world (North America, Western Europe and Australia) breast cancer mortality is finally beginning to fall, presumably because of the combined action of earlier diagnosis and improved therapy.[2] Countries with traditionally low incidence however are now experiencing the increase in the new registration also. A large number of patients in Bangladesh have been suffering from breast cancer. Each year the number of patients is increasing. Because of existing social circumstances female patients are hesitant to be examined by the clinicians for breast lump, the patients are reporting in advanced stage of malignancy.[3]

The role of non-operative techniques in definitive diagnosis of malignancy is to enable rapid referral for treatment, ideally in one operative procedure.[4] Fine needle aspiration cytology (FNAC) of the breast, as part of the triple approach to the diagnoses of palpable breast lesions, has become a valuable pre-operative tool. It is fast, inexpensive and minimally invasive and thus has gained wide acceptance in the pre-operative assessment of breast lesions. FNAC of the breast has two main goals; to confirm radiological and clinically benign lesions thus avoiding unnecessary surgery, and to confirm radiological and clinically malignant diagnoses thus enabling definitive treatment planning[5] In this regard, breast cytology has been shown to be highly sensitive and specific.[6]

Considering the FNAC as main diagnostic modality for a suspicious lump in breast, there is need, therefore, to audit the performance of FNAC of the breast and assessing its degree of validity at detecting or excluding malignant breast lesions.

## METHODS

This retrospective study was carried out in the Department of Pathology, Multan Medical and Dental College Multan, Pakistan. Data were gathered from the archives of Pathology laboratory, comprising of years 2007 to 2017, after approval from Institutional Ethical Review Committee. All the patients presented with complaint of any kind of swelling of breast were included in this study. All the demographic and clinical details of the patients were collected on proforma.

Fine needle aspiration technique was used to take sample from the suspected lesional area. Area was cleaned with antiseptic i.e. alcohol (70%). The needle of 23 Gauge was used and inserted in the swelling. We advanced the needle to the target when swelling was small needle was inserted in center and if swelling was large it was inserted on the periphery to avoid necrosis. The needle was moved to and fro 10-15 times to get the aspirate. Sometimes suction was done to get sample. Before removing the needle the negative pressure was removed. Once the needle was removed the plunger with negative pressure was attached to the needle and pressure was released and aspirate was taken on the slide. The material was spread on the slide and smears were fixed in methanol. The smears were then stained with eosin and hematoxylin. After drying the smears were mounted with cover slips. The data was entered and analysed using SPSS 20.0.

## RESULTS

A total of 2039 patients were presented with complaint of lump/swelling in their breast unilaterally or bilaterally. Following tables are showing the age related and histological findings of patients comprehensively.

In Table 1, age range of the patients is given yearly. While in Table 2, histological findings are given.

**Table 1: Age range of the study subjects.**

| Year | No of cases | Benign (years) | Inflammation/mastitis (years) | T.B (years) | Malignancy (years) | Atypical cells seen (years) |
|---|---|---|---|---|---|---|
| **2007** | 99 | 14-55 | 27-50 | 27 | 20-70 | 20-55 |
| **2008** | 103 | 12-45 | 21-50 | 0 | 22-68 | 28-69 |
| **2009** | 122 | 8-60 | 20-40 | 0 | 22-85 | 26-65 |
| **2010** | 111 | 15-70 | 21-55 | 27-33 | 25-70 | 20-75 |
| **2011** | 167 | 14-55 | 14-55 | 25-35 | 28-79 | 23-75 |
| **2012** | 168 | 12-65 | 17-40 | 24-35 | 18-78 | 0 |
| **2013** | 264 | 13-70 | 20-70 | 30-39 | 22-82 | 20-60 |
| **2014** | 240 | 14-63 | 20-59 | 16-65 | 24-90 | 20-65 |
| **2015** | 249 | 14-63 | 14-50 | 16-46 | 23-85 | 20-70 |
| **2016** | 215 | 13-70 | 25 | 16-50 | 20-81 | 25-50 |
| **2017** | 301 | 14-45 | 25-60 | 17-65 | 23-72 | 20-60 |

**Table 2: Histopathological findings of the study subjects.**

| Year | No of cases | Benign (N) | Inflammation (Mastitis) (N) | T.B (N) | Malignancy (N) | Atypical cells seen (N) | Miscellaneous |
|---|---|---|---|---|---|---|---|
| **2007** | 99 | 25 | 3 | 1 | 60 | 10 | |
| **2008** | 103 | 39 | 12 | 0 | 39 | 11 | 1, Phylloda<br>1, No cells |
| **2009** | 122 | 36 | 10 | 0 | 47 | 25 | 4, Simple cyst |
| **2010** | 111 | 26 | 22 | 2 | 42 | 19 | |
| **2011** | 167 | 43 | 16 | 3 | 79 | 27 | |

Continued.

| Year | No of cases | Benign (N) | Inflammation (Mastitis) (N) | T.B (N) | Malignancy (N) | Atypical cells seen (N) | Miscellaneous |
|---|---|---|---|---|---|---|---|
| **2012** | 168 | 58 | 7 | 4 | 68 | 0 | |
| **2013** | 264 | 76 | 23 | 5 | 122 | 28 | |
| **2014** | 240 | 90 | 18 | 17 | 83 | 32 | |
| **2015** | 249 | 89 | 16 | 6 | 97 | 41 | |
| **2016** | 215 | 77 | 2 | 28 | 99 | 9 | |
| **2017** | 301 | 69 | 38 | 17 | 136 | 27 | 4, cyst<br>4, lipoma<br>6, non representative |
| **Total** | 2039 | 628 (30.8%) | 167 (8.1%) | 83 (4%) | 872 (42.7%) | 229 (11.23%) | 20 (1%) |

## DISCUSSION

Breast cancer is one of the common clinical problems in Pakistan. Although there has been little success in preventing breast cancer, significant reduction of mortality could be achieved by early detection. It is the general consensus that a firm pre-operative diagnosis should be established before surgery and FNAC is an extremely useful diagnostic technique. It has already been established that FNAC is an easily performed outpatient diagnostic method for determining the nature of breast lesion. Its success is due to its diagnostic accuracy and its cost effectiveness in the management of breast lump. As a diagnostic modality, FNAC has many advantages for the patients as well as for the physicians. Before the introduction of FNAC, open biopsy/true cut biopsy was carried out in only suspicious cases. The purpose of this present study was to determine the value of fine needle aspiration cytology in the diagnosis of breast carcinoma and to compare the result of FNAC with histological diagnosis to assess its accuracy.[7]

A study carried out in Bangladesh on FNAC of breast lumps, reported that out of 490 study cases, 373 (76%) were benign in nature while 117 (24%) were declared benign[8] This reported finding is quite contradictory to our study finding because in current study 30.8% were declared benign neoplasm. Another study carried out in Peshawar, Pakistan, reported that 55.6% of breast lumps were positive for malignancy on FNAC. The findings of this study were in line with the current study. Again a study conducted in Nigeria by Ibikunle et al reported that 60.9% of their cases were found to be benign on FNAc.[9] This is again contrary to our study results. A number of cases have been reported so far, reporting the cases of tuberculous mastitis, as we have found 4% cases of breast declared TB mastitis.

## CONCLUSION

FNAC has become more reliable in the diagnosis of biological behaviour of breast masses. FNAC needs quite simple logistics as compared to frozen section histopathology and also less invasive as compared to incisional biopsy of breast lump. Therefore, FNAC is a reliable, fast and accurate diagnostic method for the assessment of breast lumps. It has few manageable complications and can be done on outpatient basis.

It is our conclusion therefore that the surgeons and pathologists should continue to deploy the procedure towards the early detection of breast cancer. This will also significantly reduce patient's waiting time for incision/excision biopsy.

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## REFERENCES

1. Parkin DM, Bray F, Ferlay J, Pisani P. Estimating the world cancer burden: Globocan 2000. Int J Cancer. 2001;94:153-6.
2. Jatoi I, Miller AB. Why is breast cancer mortality declining? Lancet Oncol. 2003;4:251-4.
3. Rahman MZ, Islam S. Fine Needle Aspiration Cytology of Palpable Breast Lump: A Study of 1778 Cases. Surgery. 2013;S12:001.
4. Palombini L, Fulciniti F, Vetrani A, De Rossa G, Di Benedetto G, Zeppa P. Fine needle aspiration cytology of breast masses. A critical analysis of 1956 cases in 8 years (1976-84). Cancer. 1988;6:2273-7.
5. Berner A, Sauer T. Fine-needle aspiration of the breast. Ultrastruct Pathol. 2011;35:162-7.
6. Boerner S, Fornage BD, Singletary E, Sniege N. Ultrasound guided fine needle aspiration of non palpable breast lesion: Review of 1885 cases using the NCI-supported recommendation on the uniform approach to breast aspiration. Cancer. 1999;87:19-24.
7. Rupom TU, Choudhury T, Banu S. Study of Fine Needle Aspiration Cytology of Breast Lump: Correlation of Cytologically Malignant Cases with their Histological Findings. Bangabandhu Sheikh Mujib Medical University J. 2011;4(2):60-4.
8. Akter S, Islam MJ, Haque MS. Fine Needle Aspiration Cytology of Palpable Breast Lumps - Their Cytological Spectrum and Histopathological Correlation. KYAMC J. 2017;7(2):780-6.

9. Ibikunle DE, Omotayo JA, Ariyibi OO. Fine needle aspiration cytology of breast lumps with histopathologic correlation in Owo, Ondo State, Nigeria: a five-year review. Ghana Med J. 2017;51(1):1-5.

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