



## Research Article

# FINE NEEDLE ASPIRATION CYTOLOGY AS A DIAGNOSTIC TOOL IN THE DIAGNOSIS OF BREAST CARCINOMA IN A TERTIARY CARE HOSPITAL

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### ABSTRACT

Breast carcinoma is the second most common carcinoma worldwide only after lung cancer in female. After the popularisation of papanicolou testing for cervical cancer, breast carcinoma has overtaken cervical carcinoma in many parts of India. The aim of this study is to see if fine needle aspiration cytology is a effective tool in diagnosing breast cancer.

**Material and method:** This is a retrospective study from January 2013 to December 2013.

**Result:** The sensitivity and specificity of fine needle aspiration cytology was 88.23% and 95.97% respectively when compared with histopathological finding.

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## INTRODUCTION

Worldwide, breast cancer is the second most leading cause of death in women following lung cancer (Chandra, 1979; Dumitresu and Cotaria, 2005). In India every year 75,000 new cases of breast cancer is detected. This is the tip of the iceberg as only 3% of the tumour cases are reported in National Cancer Registry and Hospital Based Tumour Registries. Locally advanced breast cancer constitutes more than 50-60% of the patients presenting for treatment. Fine needle aspiration cytology method was introduced as a primary test in the diagnosis of breast cancer. This is a safe, reliable and outdoor procedure with minimal patient discomfort. FNAC not only helps in diagnosis but also helps in further planning of treatment without need for biopsy. The current study is done to see the sensitivity of fine needle aspiration cytology as a diagnostic tool for breast carcinoma.

## MATERIALS AND METHODS

This was a retrospective study from January 2013 to December 2013. So no ethical issue or patient consent was needed. Female patient with breast mass whose FNAC was done in the Pathology Department of Patna Medical College were taken into consideration.

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FNAC had been done with 10cc disposable syringe and the May-Grunwald Giemsa stained were seen and reported. The same patients' mastectomy or lumpectomy or biopsy finding was followed up in the histopathological records. The statistical analyses were done to find the sensitivity and specificity of fine needle aspiration cytology to detect the presence of malignancy in the breast in comparison to histopathology.

## RESULTS

A total of 316 cases of female breast lesion, FNAC were done in the year 2013 January to December.

Among the mastitis cases 6 were acute suppurative mastitis, 2 tubercular mastitis and 2 were plasma cell mastitis. Age group of breast lesion was from 12-85 years. Malignant Lesion was in the age group of 22-85 years with a mean age of 47 years. Out of 316 cases of fine needle aspiration cytology only 185 cases had histopathological follow up. Out of the 40 cases diagnosed as carcinoma in FNAC 36 had gone for histopathological follow up. 30 cases were diagnosed as carcinoma both by histopathology and by fine needle aspiration cytology. 6 cases which were diagnosed as carcinoma in FNAC were later in histopathology were diagnosed as 2-fibroadenoma, 2-Phylloid and 2-chronic inflammation. 4 cases which were reported as fibroadenoma in fine needle aspiration cytology turned out to be breast carcinoma on histopathology of the lumpectomy specimen.

**Table showing different breast lesion in FNAC total of 316 cases**

cases	number	Percentage
carcinoma	40	12.65%
Fibroadenoma	159	50.31%
Benign Breast disease	40	12.65%
Galactocele	7	2.21%
Phylloid	3	0.94%
Fibrocystic disease	56	17.72%
Mastitis	10	3.16%
Benign vascular disease	1	0.31%

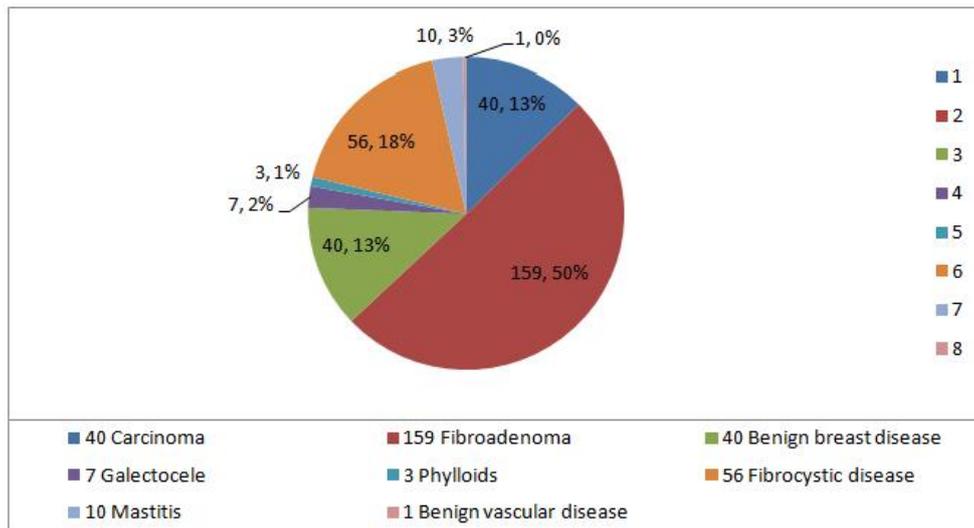
**Table showing different breast lesion in Histopathology Total of 185 cases**

cases	Number	Percentage
Carcinoma	34	18.37%
Fibroadenoma	134	72.43%
Phylloid	3	1.62%
Duct ectasia	3	1.62%
Chronic inflammation	10	5.40%
Haematoma	1	0.54%

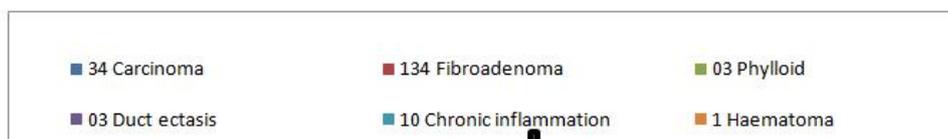
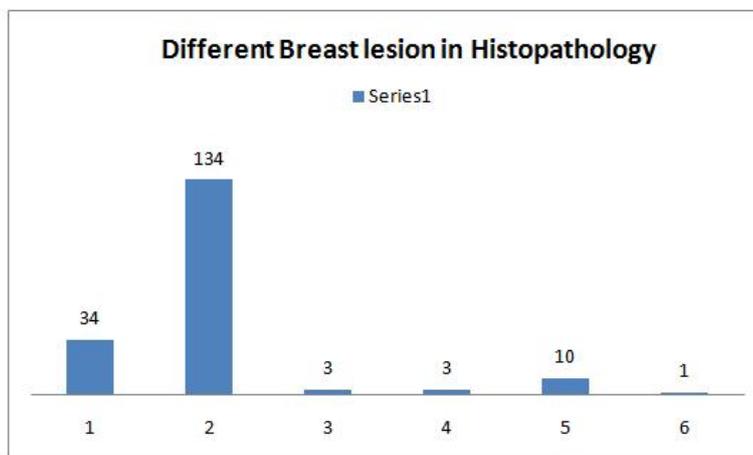
Out of the 34 cases of carcinoma in histopathology 31 were Intraductal carcinoma, 2 were lobular carcinoma and 1 was medullary carcinoma. The statistical analyses of fine needle aspiration cytology were as follows. False positive-6 cases, false negative-4 cases, true positive-30 cases, true negative-143 cases. Sensitivity-88.23%, Specificity=95.97%

**DISCUSSION**

The present study has high sensitivity and specificity, maybe because, most patient coming to this tertiary care hospital presents with the late stage of the disease. This delay in seeking higher medical advice can be due to lack of awareness, social stigma, shyness, poverty, quacks etc. In our study sensitivity was more than Choi *et al.* (2004) and Park and Ham, 1997, but less than study by Mohammed *et al.* (2005) and Kim *et al.* (2000). In our present study specificity was more than the study by Park and Ham, 1997 and Kim *et al.* (2000) but less than Mohammed *et al.* (2005) and Choi *et al.* (2004).



**Different Breast Lesions in Fine Needle Aspiration Cytology**



The average age of incidence in our study was 47 years similar to the Indian statistic (Pakseresht *et al.*, 2009; Sandhu *et al.*, 2010; Sexena *et al.*, 2005). The peak age of breast cancer is 60-70 years in western countries. In comparison to developed countries, Asia has lower incidence but higher mortality of breast cancer and also the patient are a decade younger in developing countries than developed countries.

### Conclusion

Even though histopathology still remains the gold standard for diagnosis of breast cancer, fine needle aspiration cytology is almost as good as histopathology in a resource poor, developing country like India.

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