



## Original Research Article

## Diagnostic significance of cytological features in breast fine needle aspiration cytology - An institutional study in mandya institute of medical sciences, Mandya

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## ABSTRACT

**Introduction and Objective:** Fine needle aspiration cytology has importance in the diagnosis of breast lesions in several clinical and hospital settings. A study was done to assess the role of fine needle aspiration cytology (FNAC) in breast lumps and diagnostic significance of cytological features in FNA for diagnosis of benign or malignant condition of breast lesions.

**Materials and Methods:** The study comprised of breast cytology reports and slides recorded over a period from January 2018 to December 2018.

**Results:** A total of 250 breast cytology reports were made over the period. Out of the 250 cases, 140(56%) were benign, 30(12%) cases were suspicious probably benign, 30(12%) cases were suspicious of malignancy and 50(20%) were malignant.

**Conclusion:** Fine-needle aspiration cytology is widely used in the diagnosis of breast cancer because it is an excellent, safe, and cost-effective diagnostic procedure.

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### 1. Introduction

Fine-needle aspiration (FNA) has become an important tool in the investigation of palpable breast masses.<sup>1</sup>

It is a less complicated procedure with good results; however, main factors should be considered before its procedure to increase its accuracy.<sup>2</sup>

All breast lesions are not malignant, and all the benign breast lesions do not proceed to malignancy. The diagnosis can be combined with preoperative tests like physical examination, mammography, fine-needle aspiration cytology and biopsy. These tests are more accurate and acceptable.<sup>3,4</sup>

### 2. Materials and methods

This study was carried out in a Mandya Institute of Medical Sciences, Mandya. This was a retrospective study between January 2018 and December 2018. The study was approved by institution ethics committee. All the patients presenting

with breast lump were included in the study. The patients were counselled about the procedure, informed consent was taken. Detailed clinical history, physical examination including the duration, size, consistency and mobility were taken into consideration.

FNAC was performed using 22 G needles attached to 10cc syringe and the aspirated material was smeared on glass slides. Smears were fixed in 95% ethyl alcohol and stained with Hematoxylin and Eosin (H&E) and Pap stains. Giemsa stain was done on air-dried smears.

#### 2.1. Inclusion criteria

All females with unknown primary diagnosis of breast mass.

#### 2.2. Exclusion criteria

1. Patients with recurrent malignancy.
2. Patients in whom FNAC was either acellular or non-diagnostic or inflammatory.
3. Male patients with breast cancer and gynecomastia

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**3. Results**

Fine needle aspiration was done on Two hundred and fifty patients, Out of them 140(56%) were benign, 30(12%) cases were suspicious probably benign, 30(12%) cases were suspicious of malignancy and 50(20%) were malignant.

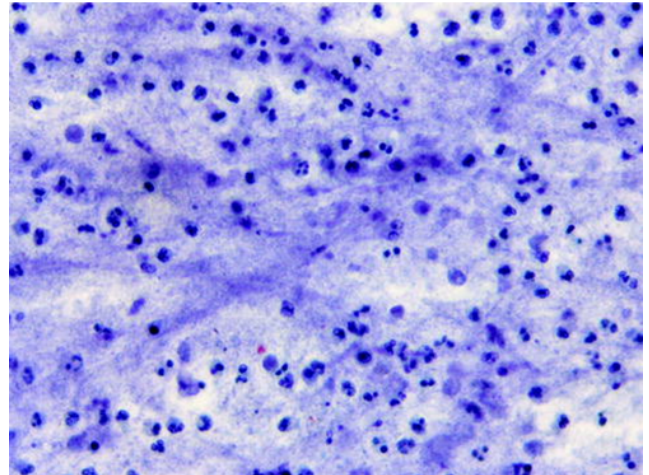
Majority of patients were in the age group of 21-60 years. Blood mixed aspirate was most common.

Among benign cases, maximum were Fibroadenoma cases followed by Fibrocystic disease.

Ductal carcinoma in situ was most common type observed among malignant cases.

Benign cases were significantly more in younger age (less than 40 years) whereas malignant

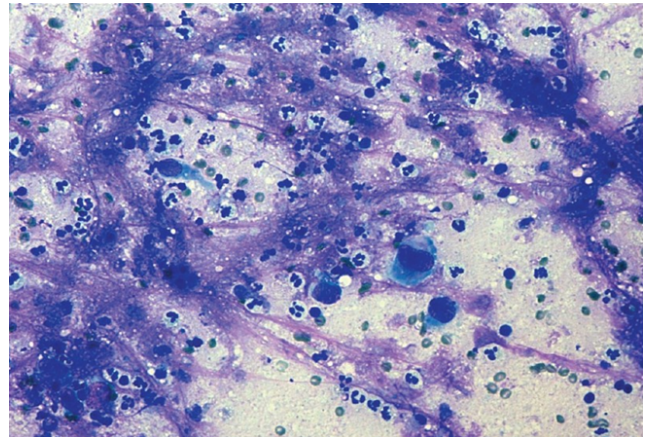
breast lesions were found significantly more in older age group ( greater than 40 years).



**Fig. 1:** Acute suppurative mastitis

**Table 1:** Age of the patients presenting with lump breast

Age in years	Benign lesions		Suspicious for malignancy	Malignant
	Inflammatory	Benign Proliferative lesions		
20-30	15	50	5	5
30-40	20	30	10	15
40-50	10	20	10	15
50-60	15	10	5	15
Total	60	110	30	50



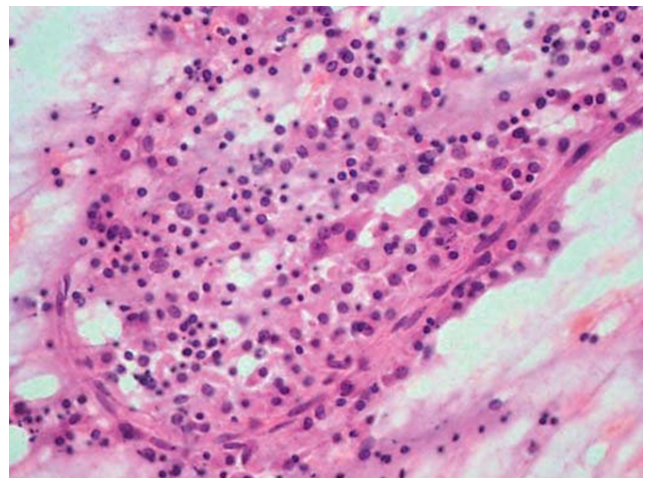
**Fig. 2:** Acute mastitis

**Table 2:** Distribution of inflammatory lesions

Inflammatory Lesions	Cytology
Acute suppurative Mastitis	15(25%)
Acute mastitis	20(33.33%)
Chronic nonspecific Mastitis	15(25%)
Duct ectasia	5(8.33%)
Fat necrosis	5(8.33%)

**Table 3:** Distribution of Benign proliferative lesions

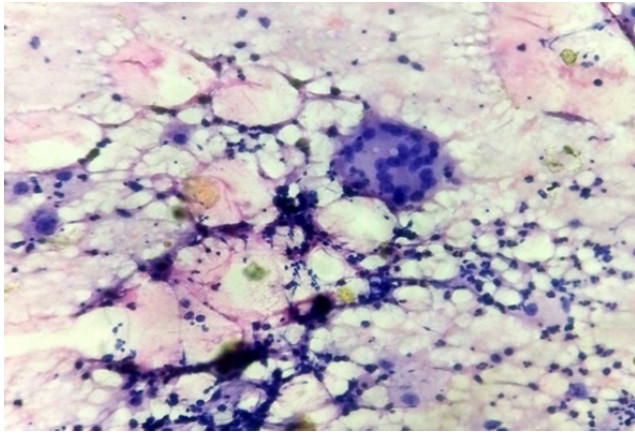
Benign Lesions	Cytology
Fibroadenomas	65(59.09%)
Fibrocystic disease	35(31.81%)
Benign phyllodes	10(9.09%)



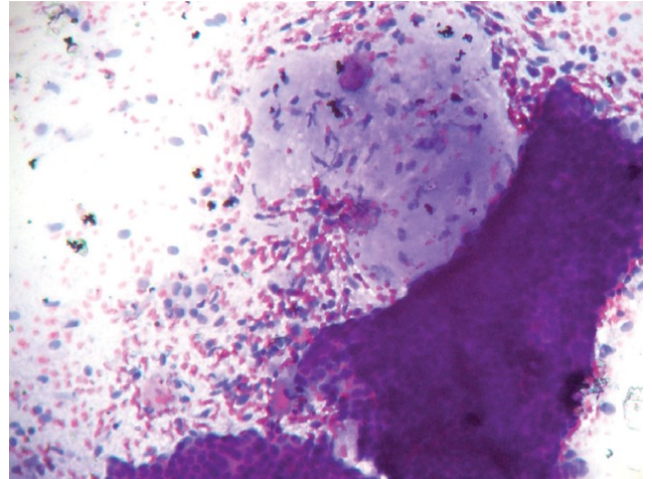
**Fig. 3:** Chronic inflammatory breast lesion

All cases of Suspicious of Malignancy and Malignant lesions were diagnosed on FNAC as Infiltrating Ductal Carcinoma. In our study we didnt include Histopathological correlation. Our study was mainly concentrated on cytological smears of breast palpable lesions.

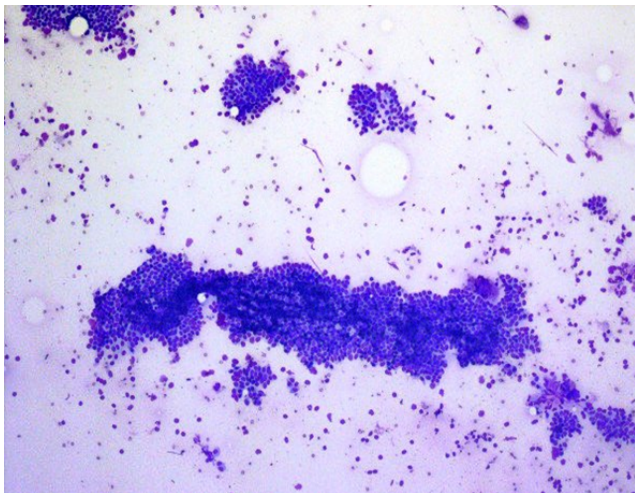




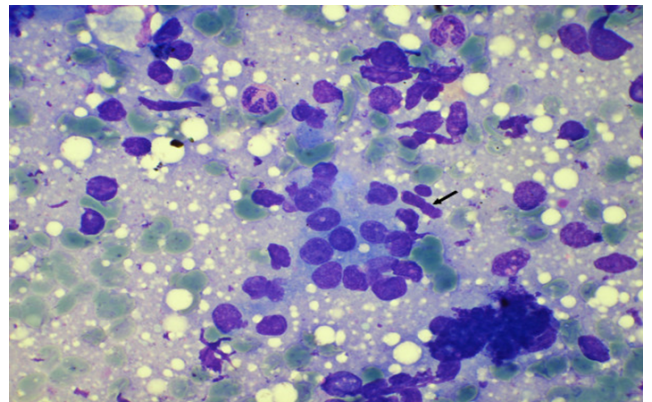
**Fig. 4:** FAT Necrosis



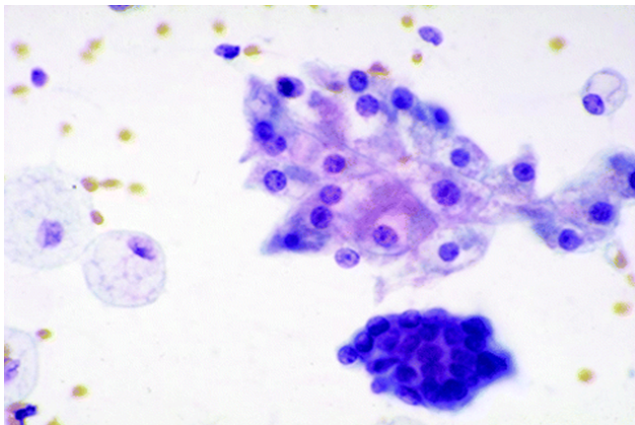
**Fig. 7:** Benign phyllodes of breast



**Fig. 5:** Fibroadenoma



**Fig. 8:** Infiltrating ductal carcinoma



**Fig. 6:** Fibrocystic change

#### 4. Discussion

The most common age group in our study was 21-60 years. Similar observations were reported by Farkhanda et al, Chandanwale et al, and Rajat Gupta et al.<sup>5-7</sup> However Haque et al reported 30–40 years as most common age group.<sup>8</sup>

In present study, left breast and outer upper quadrant were more commonly involved as compared to right breast. Similar observations were made by Rajat Gupta et al.<sup>7</sup>

However Chandanwale et al reported more common involvement of right breast.<sup>6</sup>

Out of 250 cases of FNAC, 86% lesions were benign and 20 % were reported as malignant. This findings of our study correlates with Singh K et al and Khatun H et al.<sup>9,10</sup>

Bdour M et al had reported much higher incidence of carcinomas (41%).<sup>11</sup>

Benign lesions were significantly more associated with younger age groups as compared to malignant lesions which were more common in patients older than 40 years of age. Similar findings of our study correlates with Singh P et al,

Khan A et al and Ageep AK.<sup>12–14</sup>

In present study, among benign lesions, fibro adenoma was most common benign lesion, followed by fibrocystic disease and ductal carcinoma was most common lesion among malignant ones which correlated with Singh K et al, Khatun H et al and Singh A et al.<sup>9,10,15</sup>

Studies done by Ageep AK and Memon A et al have reported fibrocystic disease as the common diagnosis followed by fibroadenoma.<sup>14,16</sup> which shows little correlation with our studies.

We diagnosed 10 cases of benign phyllodes in our study. In 6 cases definitive diagnosis was given based on predominance of stromal components over epithelial, fragments of highly cellular myxoid stroma and numerous single spindle shaped bare nuclei. Nuclear atypia and mitotic figures were absent. In 4 cases, cytomorphologic features were similar to fibroadenoma showing more cellularity based on strong clinical suspicion of larger size, diagnosis was suggested. Our study was showing some similarities with study done by Krishnamurthy S et al.<sup>17</sup>

In our study out of 80 suspicious of malignancy and malignancy, all the diagnosis were given as infiltrating ductal carcinoma without specifying the subtype of carcinomas which was important for diagnosis and treatment of specific subtypes. Similar study was done on pitfalls of missing subtypes of breast carcinoma on FNA smears by Anantharamaiah H et al.<sup>18</sup>

## 5. Conclusion

The cytological examination of breast lesions is a rapid, economical valuable diagnostic tool, simple, safe and cost effective outpatient procedure. Early diagnosis can significantly reduce morbidity and mortality. Benign breast lesions constitute majority of breast masses occur in second and third decade.

Clinical breast examination and mammography screening should be encouraged in females from the third decade onwards for early detection of breast carcinoma. FNA features are more informative when combined with physical and radiology features.

## 6. Source of funding

None.

## 7. Conflict of interest

None.

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