

## FNAC IN DIAGNOSIS OF BREAST LESION (FOR PUBLICATION )

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### **ABSTRACT:**

**INTRODUCTION:** Breast carcinoma is the leading most common malignant tumor and leading cause of carcinoma death with more than 1000000 cases occurring world wide annually<sup>1</sup>. FNAC (Fine Needle Aspiration Cytology) has become widely accepted as a reliable diagnostic tool for diagnosis of breast masses<sup>3</sup>.The aim of the study was to classify Breast lesions & correlate with histopathology Report.

**MATERIALS & METHOD:** This was a retrospective observational study done over a period of one year (Jan. 17- Dec. 17) in Cytology Division of Department of Pathology of AMC MET Medical College at L.G.Hospital Campus ,a tertiary Health Care located in Maninagar Ahmedabad .Of total 1104 FNAC were done in the department among these 215 were Breast Lesions. Breast lesions were categorized into Inflammatory, Benign with No Risk, Benign with moderate Risk, Suspicious & Malignant.

**RESULTS:** The Maximum number of cases was in the age group of 18-30 in Benign Breast Lesion. Malignant Breast Lesion was found in the age group of above 41.

**CONCLUSION: FNAC is minimally invasive,produces speedy results and is inexpensive.**

**KEY WORDS:** Breast Lesions, Fine Needle Aispiration, Cytology, Fibroadenoma.

### **INTRODUCTION :**

Breast carcinoma is the leading most common malignant tumor and leading cause of carcinoma death with more than 1000000 cases occurring world wide annually<sup>1</sup>.It is the second most common cancer in women after cervical cancer. The most important risk factor is a history of breast cancer in a close relative<sup>2</sup>. The risk of breast cancer is minimally increased in women who take hormonal contraceptives but risk is no longer present 10 years after cessation of medication<sup>2</sup>. By 2020 breast cancer is set to overtake cervical cancer as most common type of cancer among all women in india<sup>3</sup>. FNAC (Fine Needle Aspiration Cytology) has become widely accepted as a reliable diagnostic tool for diagnosis of breast masses<sup>3</sup>. FNA can be performed with only a needle or with a needle syringe. It is least expensive method of diagnosis. As FNAC does not require anesthesia or hospitalization and it takes only few minutes to perform , A preliminary judgement as to adequacy of sample and in many instances diagnosis can be done in minutes thus alleviating anxiety that woman inevitably experiences when informed that she has a mammary lesion. Thus FNA may save anxiety , trauma and money. FNA is particularly valuable when the level of clinical suspicion is low<sup>2</sup>. A significant advantage of FNB is low cost and the ability to render a diagnosis to the clinician and patient at the time of procedure thus allowing treatment decision to be made immediately<sup>4</sup>. Limitation of aspiration cytology : FNAC is highly reliable for the diagnosis of cancer .If however the FNAC is judged to be atypical or suspicious the procedure should be repeated or another opinion should be sought or the lesion should be excised for histological examination<sup>5,6,7</sup>.

The aim of scheme Proposed by wang and Ducatman is to categorise a lesion according to likelihood of being a carcinoma on basis of FNA findings rather than predict precise histological diagnosis<sup>8</sup>. Early Diagnosis helps to prevent patient discomfort and anxiety<sup>9,10,11</sup>.

The aim of the study was to:

- 1) Find out various causes of Breast Lesion.
- 2) To classify the FNAC findings into cytological Categories – Inflammatory ,Benign Lesion with No Risk of Cancer,Benign Lesion with Mild to Moderate Risk of Cancer, Suspicious for Malignancy and Malignant.
- 3) To Compare the result of FNAC with Histopathology report of same Patient.

**Materials & Method:** This was a retrospective observational study done over a period of one year (Jan. 17- Dec. 17) in Cytology Division of Department of Pathology of AMC MET Medical College at L.G.Hospital Campus ,a tertiary Health Care located in Maninagar Ahmedabad .Of total 1104 FNAC were done in the department among these 215 were Breast Lesions. A detailed clinical history of each patient regarding age, sex, chief Complains physical examination of Breast was carried out.USG Reports & Mammography repots were recorded. Axillary Lymph node were palpated for enlargement. Written informed Consent of each patient was taken & Fine Needle aspiration was done with 22 gauge Needle & 10 cc.Of total 1104FNAC, 215 were Breast Lesions. Both Females & Males were included in the study, 54 patients had Follow up excision biopsy or lumpectomy or Mastectomy done at our institution. Wet fixed smears were stained with Haematoxylin & eosin stain.

### III OBSERVATIONS AND RESULTS

Of total 1104 FNAC, 215 Breast FNACs cases were collected along with Clinical History & Radiological findings .Histo Pathological Correlation was found in 54 Cases.

- 1) Out of 215 Breast lesions, 9 were Males patients Rest 206 were females.
- 2) 6 Cases were Bilateral.
- 3) Histopathological correlation was found in 54 Cases.
- 4) The Maximum number of cases was in the age group of 18-40 in Benign Breast Lesion Which is comparable to the study of shrestha et al (21-30Yrs) & puja et al (31-40) yrs.
- 5) Malignant Breast Lesion was found in the age group of above 41. (range 41-70years) Which was comparable to Shresth et al (41-50) and Puja et al (41-50).

Most Common Breast lesions was Fibroadenoma (32%) Followed by Proliferative lesion of Breast (22.5%)

Ductal Carcinoma was found in (22%) Cases.

**Table I****Diagnosis in 215 Breast FNAC**

<b>Breast Lesion</b>	<b>No. of cases</b>
<b>A. Benign Lesions with no risk of Cancer</b>	
I. Unsatisfactory	5
II. Inflammatory Breast Lesion	
Mastitis	16
Abscess	12
III. Non Proliferative Breast Disease	
Fibrocystic change & Simple cyst	03
Mild epithelial Hyperplasia	01
<b>IV Miscellaneous</b>	
Lactational change/ Galactocele	03
Gynecomastia	13
<b>B. Benign Lesion with Mild Moderate risk of Cancer.</b>	
I. Proliferative breast disease without atypia .	
Epithelial Hyperplasia, Moderate	01
Papilloma	01
Fibroadenoma	64
Phylloid	01
II. Proliferative Breast disease with atypia but Benign	45
<b>C. Suspicious &amp; Malignant</b>	
Suspicious & Malignancy	06
Ductal Carcinoma	44

**Table II**

<b>Sex</b>	<b>No</b>
Male	9
Female	206

**Table III Age Distrubution**

<b>Age</b>	<b>Benign</b>	<b>Malignancy</b>
< 20 years	11	-
Up to 20 years	45	-
21-30 years	57	02
31-40 years	36	09
41-50	19	13
51-60	3	07
>61	-	13

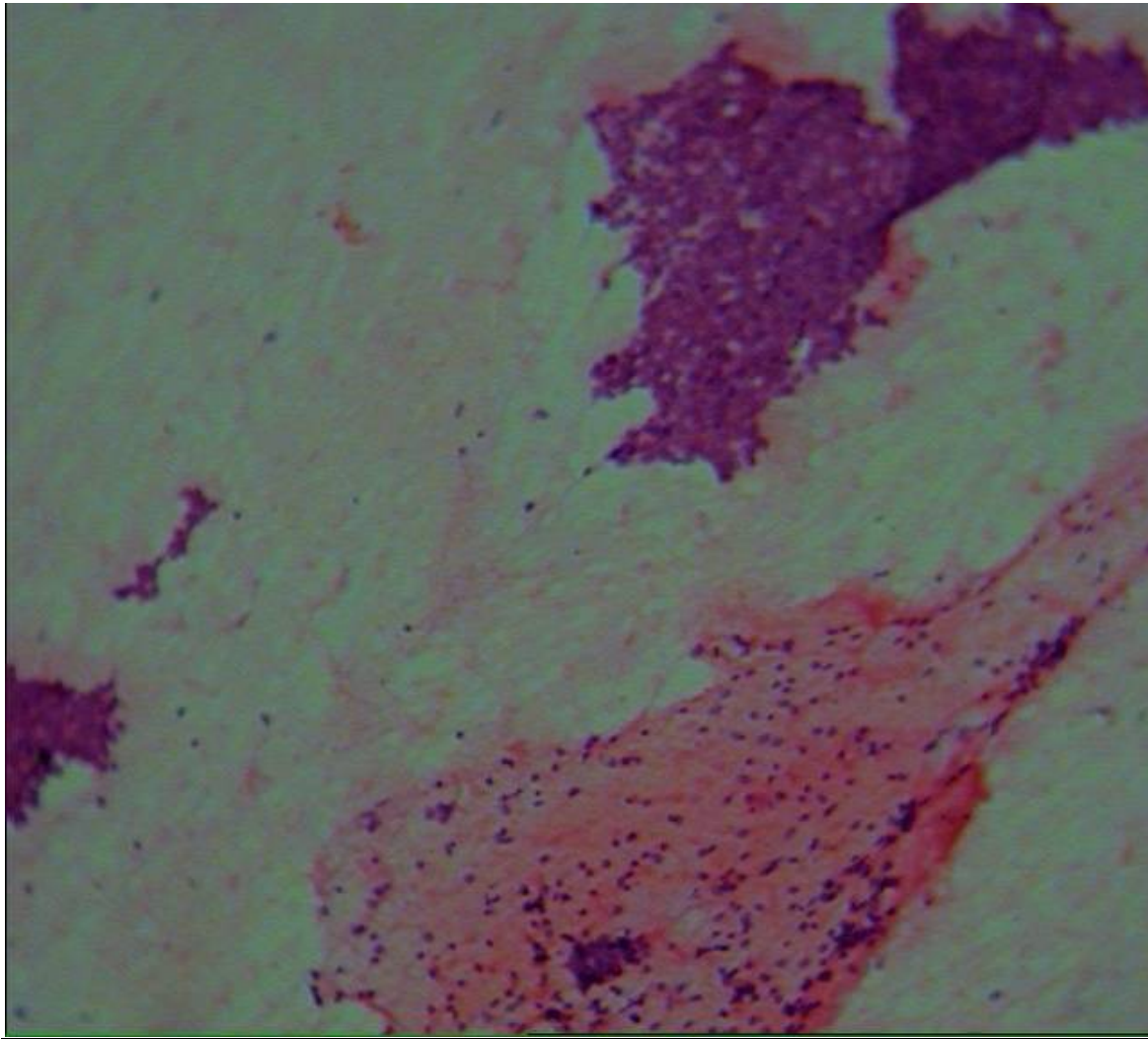
**Table IV FNAC and Histo Correlation.**

<b>Sr. No.</b>	<b>Breast lesions</b>	<b>FNAC</b>	<b>Histopathology</b>
<b>1</b>	Positive	44	22
<b>2</b>	Suspicious	6	5
<b>3</b>	PBD with atypia	45	10
<b>4</b>	Fibroadenoma	64	14
<b>5</b>	Phylloid	1	1
<b>6</b>	Gynecomastia	13	2

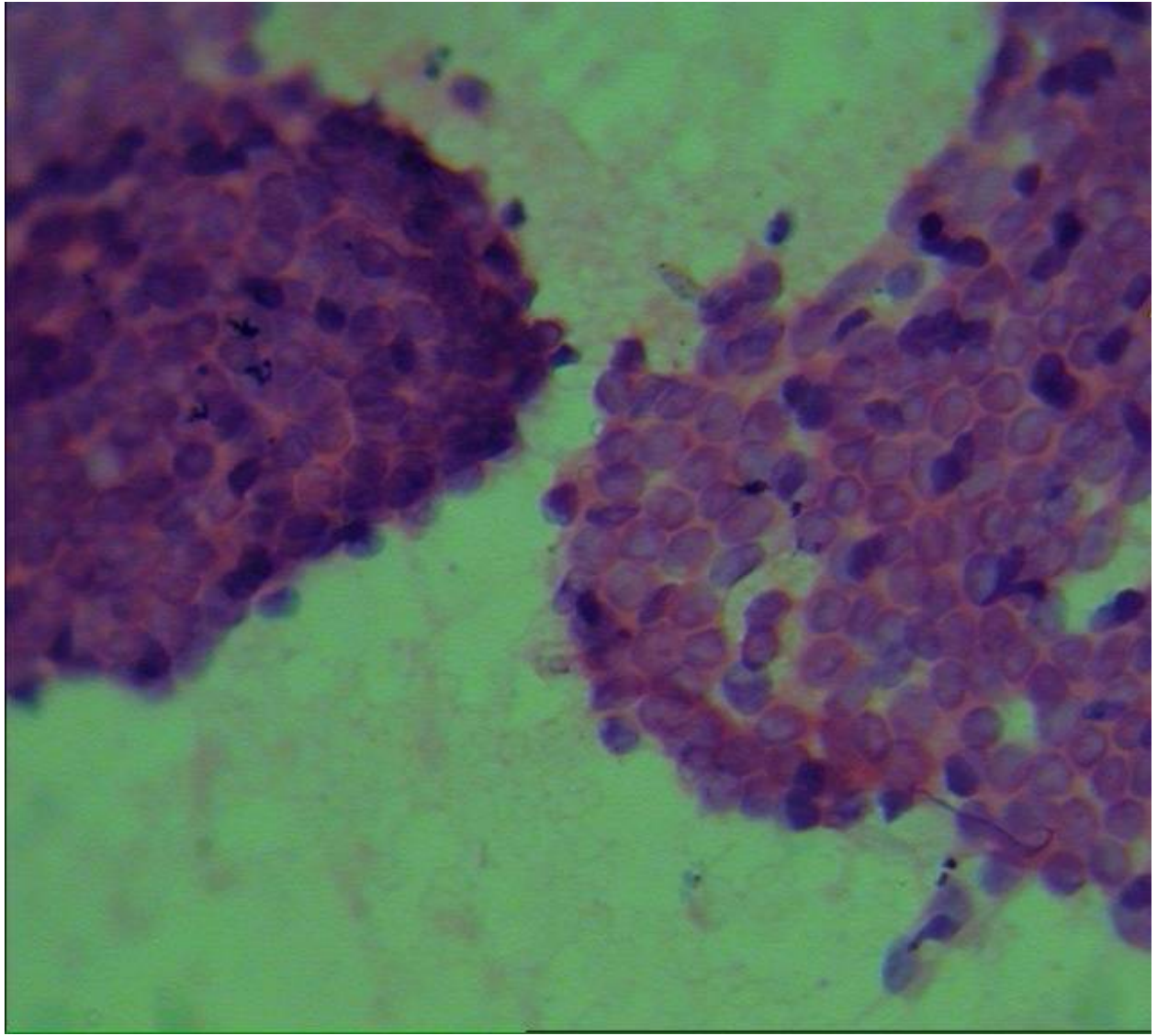
**Table V**

<b>FNAC</b>		<b>HISTOPATHOLOGY</b>	
<b>Diagnosis</b>	<b>No of Cases</b>	<b>Diagnosis</b>	<b>No of Cases</b>
Ductal Carcinoma	22	Ductal Carcinoma	22
ProliferativeBreast disease with atypia	10	ProliferativeBreast disease with atypia	8
		Tubular adenoma	1
		Ductal carcinoma	1
Suspicious	5	Ductal Carcinoma	5
Phylloid tumour	1	Phylloid tumour	1
Gynecomastia	2	Gynecomastia	2
Fibroadenoma	14	Fibroadenoma	14

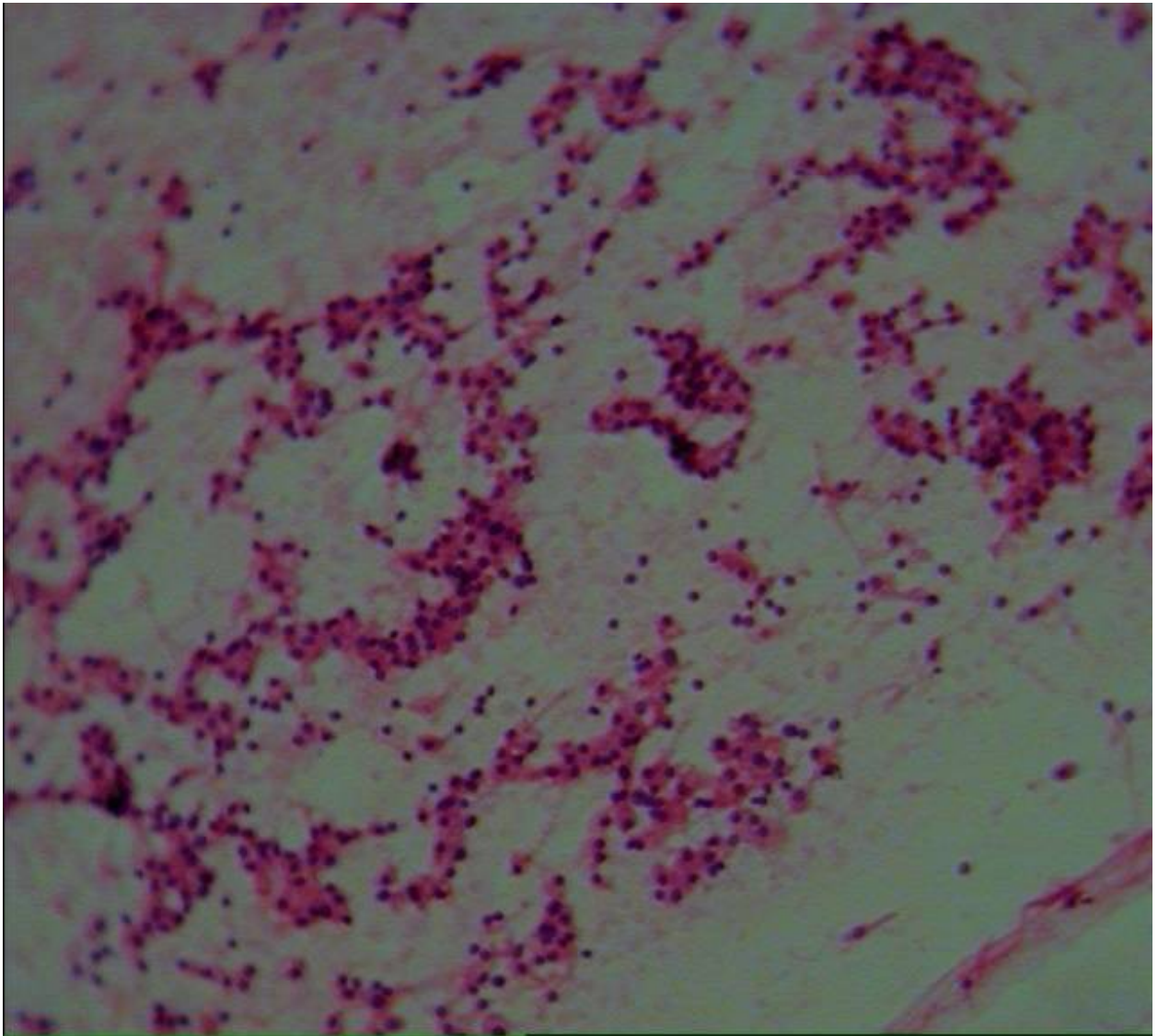
**FNAC IMAGES**



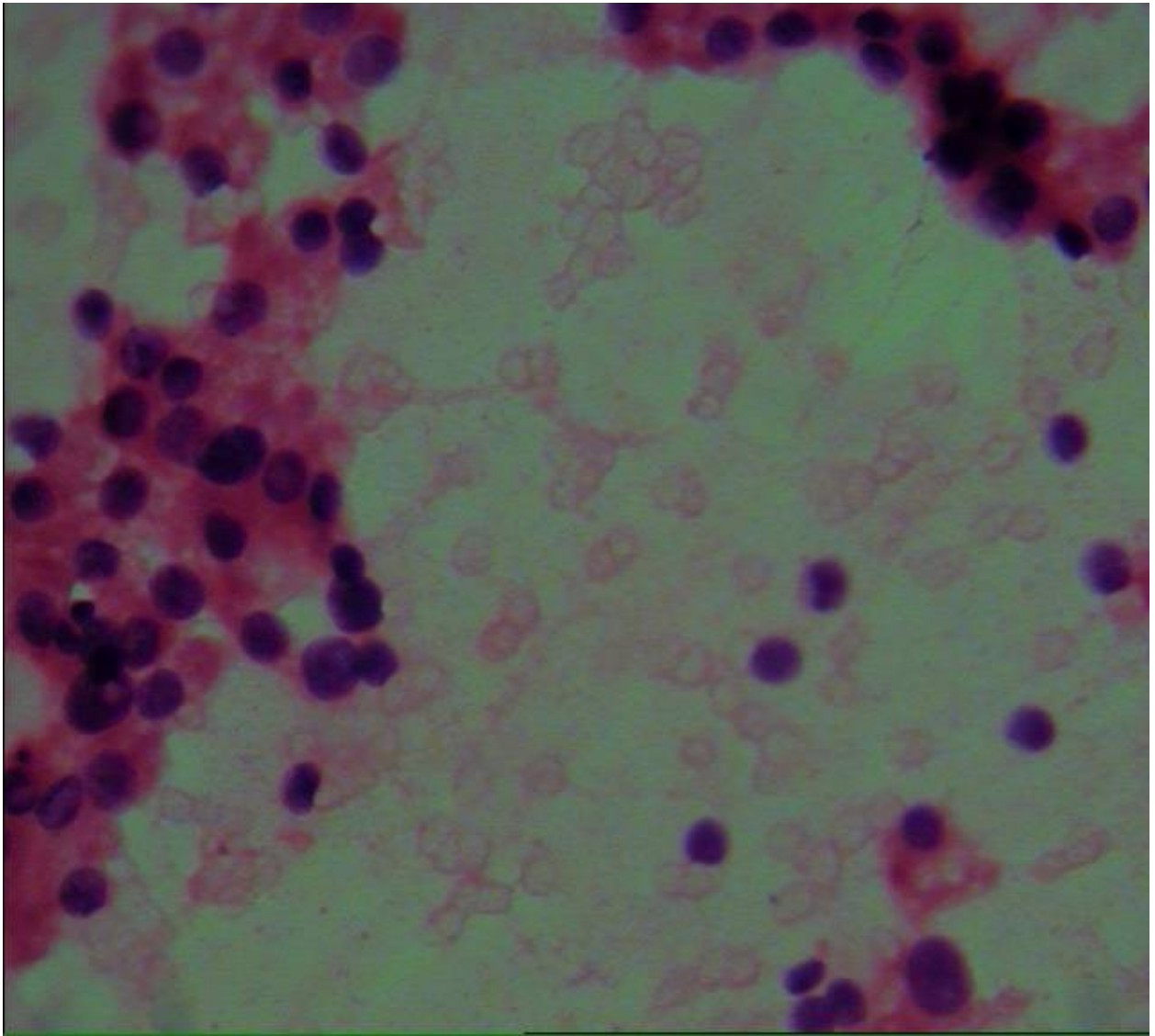
Fibroadenoma low power 10x



Fibroadenoma High power (40x)



Ductal carcinoma low power(10x)



**Ductal Carcinoma High power(40x)**



## **Discussion:**

Breast Cancer is the commonest Cancer of Urban women and second commonest in the Rural women next to cervical cancer. Owing to lack of awareness of this disease and in absence of Breast Cancer Screening Programme, the majority of Breast Cancer are diagnosed at a relatively advanced stage<sup>11,12</sup>. We had 44 cases of Ductal Carcinoma, Out of which 19 were in age group of 41-50, 3 in age group of 51-60 & 17 patients above 61 years.

During the study the Breast lesions were classified as Inflammatory, Benign Lesion with No Risk of Cancer, Benign Lesion with Mild to Moderate Risk of Cancer, Suspicious for Malignancy and Malignant.

Following observations were made

1) In present study, .02% cases were unsatisfactory for reporting. 4.1% patients were males and 95.8% patients were females.

2) In the present study, Fibroadenoma is the commonest Benign Breast lesion followed by Benign Proliferative lesion of Breast which is comparable to study by Shrestha et al. Benign Breast lesion was common in the age group of 21- 40 which is comparable to the study by Shrestha et al<sup>12</sup>(21-30 years) and Jarwani Puja<sup>2</sup> et al (31-40 years).

3) Invasive Duct Carcinoma was commonest Malignant Breast lesion in the age group above 41 years which was comparable to Shrestha et al<sup>12</sup>.

4) In Comparative Analysis of FNAC and Histopathology, Out of 6 Cases of FNAC suspicious for Malignancy, 5 were positive for Malignancy, 1 did not turn up.

5) Out of 44 Malignant cases in FNAC, 22 were confirmed Malignant Histopathologically in our Institute.

6) 2 Cases were Reported as false negative, 1 reported as Benign Proliferative lesion with Epithelial Hyperplasia turned out to be Malignant, & another Reported as Benign Proliferative lesion turned out to be Tubular Adenoma.

**CONCLUSION:** This study like other studies also suggests that diagnosis of atypia is clinically significant because it is associated with increased likelihood of Malignancy & such cases should be evaluated for Histology<sup>511</sup>. FNAC Breast is low cost and the ability to render a diagnosis to the clinician and patient at the time of procedure thus allowing treatment to be made immediately. FNAC is minimally invasive produces speedy results and is inexpensive. All cases of Proliferative lesion of Breast with atypia and suspicious Malignant cases should be followed by histopathological examination.

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