

## Evaluation of Breast Lesions with Fine Needle Aspiration Cytology at a Tertiary Care Teaching Hospital: A Clinical Study

Charu Agarwal<sup>1</sup>, Shiv Kumar<sup>2\*</sup>

<sup>1</sup>Assistant Professor, Department of Pathology,  
Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh, India.

<sup>2\*</sup>Assistant Professor, Department of Pathology,  
Saraswathi Institute of Medical Sciences, Hapur, Uttar Pradesh, India.

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### \*Correspondence to:

Dr. Shiv Kumar,  
Assistant Professor,  
Department of  
Pathology,  
Saraswathi Institute of  
Medical Sciences,  
Hapur, UP, India.

### ABSTRACT

**Background:** Fine Needle Aspiration Cytology (FNAC) is most important test for breast lesions. The present study was conducted to evaluate the utility of FNAC in detecting breast masses.

**Materials & Methods:** The present study was conducted on 30 females with breast lump. In all females, 10ml of plastic disposable syringe and disposable needles of 23-24 gauge was used for FNAC and it was stained with H & E and Giemsa stain.

**Results:** Age group 30- 40 years consisted of 6 patients, 40-50 years had 10 patients and 50-60 years had 14 patients. The difference was non- significant (P-0.5). Benign and malignant lesion comprised of 12 patients and inflammatory in 3 patients. Cytological diagnosis were abscess (2), Granulomatous mastitis (1), Fibroadenoma (8), Epithelail hyperplasia (2), Simple cyst (1), Fibrocystic disease (1), Ductal hyperplasia with atypia (3), Papilloma (8) and Ductal carcinoma (4).

**Conclusion:** Breast lesions are increasing which needs careful evaluation. Fine needle aspiration cytology is a reliable tool in detecting breast lesions.

**KEYWORDS:** Breast, Fine Needle Aspiration Cytology, Papilloma.

### INTRODUCTION

There are various factors leading to cancer in women. Among all, few are obesity, later age of menopause, early age of menarche, pregnancy at later age, high dose exposure to radiation, high intake of alcohol, history of benign breast lesion, a diet high in animal fat and family history of breast cancer. Lesions of breast are increasing day by day in women. It has high morbidity and mortality. Breast masses are most common in later age group. However, in young females also shows prevalence due to change in life style. Breast cancer is one of the leading causes of cancer in women.<sup>1</sup>

Fine Needle Aspiration Cytology (FNAC) is one of the important components of 'triple approach', which has been widely accepted for the preoperative diagnosis of breast lesions. It is a multi-disciplinary approach that includes analysis of clinical and radiological findings in conjunction with FNAC features, to diagnose the breast lesions and to determine the best management plan for

the patient.<sup>2</sup> Most cases of breast lumps are benign, but sometimes, it is difficult to determine whether a suspicious lump is benign or malignant, simply by doing a clinical examination. In these circumstances, as a widely accepted and established outdoor patient procedure, FNAC plays an important role in determining the nature of the lump. FNAC can reduce the number of open breast biopsies.<sup>3</sup> The present study was conducted to evaluate the utility of FNAC in detecting breast masses.

### MATERIALS & METHODS

The present study was conducted in Department of Pathology, Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh, India. It comprised of 30 females with complain of breast lump. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained from the

institute. Patient's information such as name, age, clinical features etc. was recorded. In all females, 10ml of plastic disposable syringe and disposable needles of 23-24 gauge was used for FNAC and it was stained with H & E and Giemsa stain. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

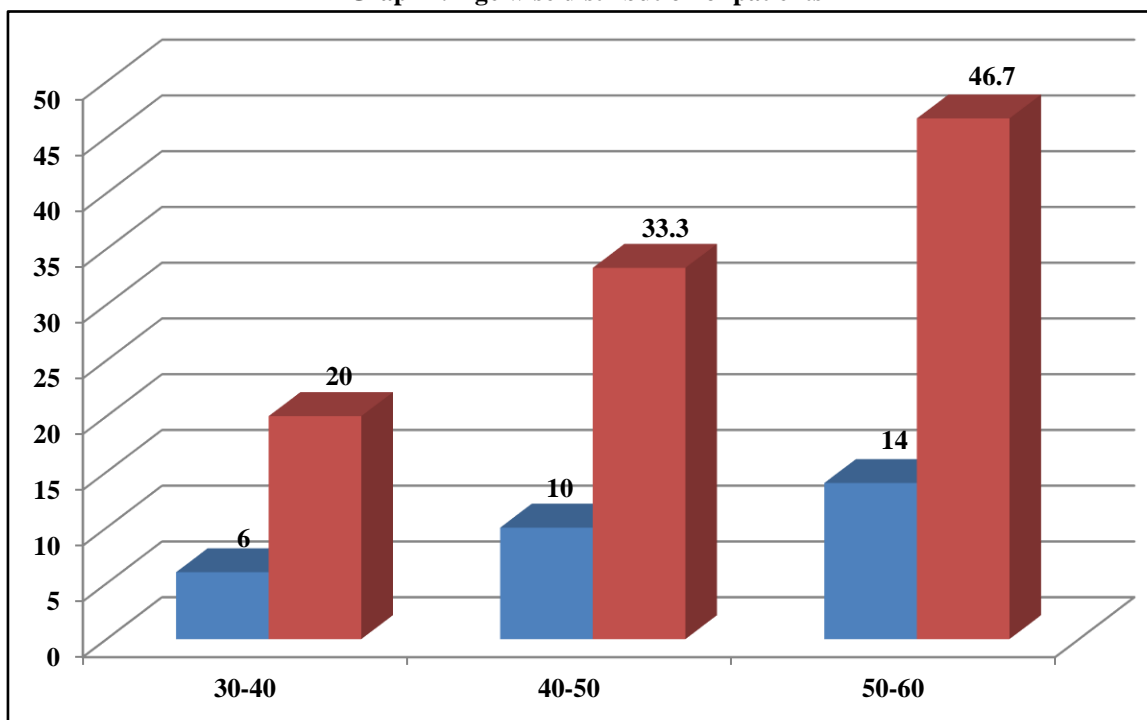
Table I, Graph I shows that age group 30- 40 years consisted of 6 patients, 40-50 years had 10 patients and 50-60 years had 14 patients. The difference was non-significant (P- 0.5).

Table II shows that both benign and malignant lesion comprised of 12 patients and inflammatory in 3 patients.

**Table I: Age wise distribution of patients**

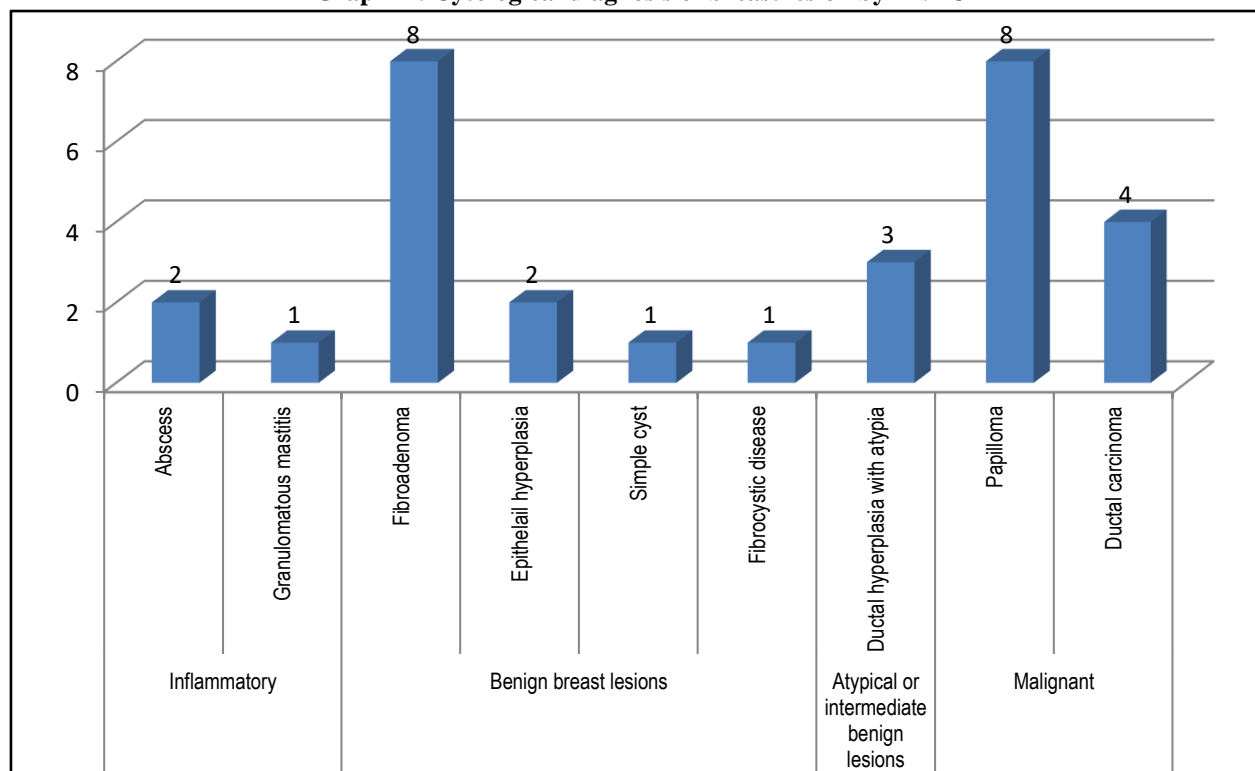
Age group	Number	Percentage	P value
30-40	6	20	0.5
40-50	10	33.3	
50-60	14	46.7	

**Graph I: Age wise distribution of patients**



**Table II: Cytological diagnosis of breast lesion by FNAC**

Category	Cytological diagnosis	Number
Inflammatory	Abscess	2
	Granulomatous mastitis	1
Benign breast lesions	Fibroadenoma	8
	Epithelial hyperplasia	2
	Simple cyst	1
	Fibrocystic disease	1
Atypical or intermediate benign lesions	Ductal hyperplasia with atypia	3
Malignant	Papilloma	8
	Ductal carcinoma	4

**Graph II: Cytological diagnosis of breast lesion by FNAC**

## DISCUSSION

The diagnosis of breast lesion is very important for achieving best results. It includes multi-disciplinary approach such as clinical and radiological findings in conjunction with FNAC features. FNAC is cost effective and can prevent unnecessary surgery.<sup>4</sup> As FNAC became more reliable in diagnosing malignancy and thereby the use of frozen-section histology had been reduced by about 80%. But erroneous diagnosis is more common with FNAC than with histopathology. Sometimes, clinical examination alone is insufficient in differentiating benign or malignant lesions. In that case, FNAC becomes choice of modality. FNAC plays an important role in determining the nature of the lump. FNAC can reduce the number of open breast biopsies.<sup>5</sup>

We observed that age group 30- 40 years consisted of 6 patients, 40-50 years had 10 patients and 50-60 years had 14 patients. Martin and Ellis<sup>6</sup> first introduced concept of fine needle aspiration (FNA) for the diagnosis of palpable breast masses. A needle aspiration biopsy is safer and less traumatic than an open surgical biopsy, and significant complications are usually rare.

We found that cytological diagnosis were abscess (2), Granulomatous mastitis (1), Fibroadenoma (8), Epithelial hyperplasia (2), Simple cyst (1), Fibrocystic disease (1), Ductal hyperplasia with atypia (3), Papilloma (8) and Ductal carcinoma (4). This is in accordance to Tiwari et al.<sup>7</sup>

FNAC is a diagnostic procedure used to investigate lumps or masses. In this technique, a thin (23-25 gauge), hollow needle is inserted into the mass for sampling of

cells that, after being stained, will be examined under a microscope. O'Neil S et al<sup>8</sup> included 35 cases presenting with palpable breast lump. All cases were also subjected to surgical biopsy or mastectomy. Out of 35 cases 25 cases were diagnosed as benign breast lesions and 10 cases were diagnosed as malignant breast lesions on cytology. On histological examination out of 25 benign lesions only 2 shows carcinoma while all malignant lesions were confirmed. The sensitivity, specificity, positive predictive value, negative predictive value and accuracy was 83.33%, 100%, 100%, 92% and 94.2% respectively.

Zhang Qin et al<sup>9</sup> included 473 resected breast lesions including excised, lumpectomy and modified radical mastectomy (MRM) specimens. The most common lesions like infiltrating ductal carcinoma (IDC) and infiltrating lobular carcinoma in malignant category. Out of total 473 resected specimens of breast, benign lesions accounted for 336 (71.05 %) and malignant 136 (28.75%). The unusual findings were 5.48% in malignant category and 1.12% in benign category and one in intermediate/ borderline category. In unusual malignant category, we found 8 types of rare tumors out of 12 unusual variants. In benign and intermediate lesions, we found 4 cases of unusual pathologies.

## CONCLUSION

Breast lesions are increasing which needs careful evaluation. Fine needle aspiration cytology is a reliable tool in detecting breast lesions.

## REFERENCES

1. Mohammad AZ, Edino ST et al. Value of fine needle aspiration biopsy in preoperative diagnosis of palpable breast lumps in resource-poor countries: a Nigerian experience. *Annals of African Medicine* 2005; 4: 19-22.
2. Haddad FS. Re: Risk factors for perineal seeding of prostate cancer after needle biopsy. *JUrol* 1990;143:587-88.
3. Bell D.A. et al: Role of aspiration cytology in the diagnosis and management of mammary lesions in office practise. *Cancer* 1983; 51: 1182-89.
4. Purasiri P, Abdalla M, Heys SD, Ah-See AK, McKean ME, Gilbert FJ, et al. A novel diagnostic index for use in the breast clinic. *J R Coll Surg Edinb* 1996; 41: 30-4.
5. Kaufman Z, Shpitz B, Shapiro M, Rona R, Lew S, Dinbar A. Triple approach in diagnosis of dominant breast masses: combined physical examination, mammography and fine-needle aspiration. *J Surg Oncol* 1994; 56: 254-57.
6. Martin & Ellis. The use of fine needle aspiration in the evaluation of persistent palpable dominant breast masses. *Am J Obstetrics Gynaecol* 1993; 168: 1814-18.
7. Tiwari M. Role of FNAC in diagnosis of breast lumps. *Kathmandu University Medical Journal* 2007; 5: 215-17.
8. O'Neil S, Castelli M, Gattuso P, Kluskens L, Madsen K, Aranha G. Fine-needle aspiration of 697 palpable breast lesions with histopathologic correlation. *Surgery* 1997;122: 824-28.
9. Zhang Qin, NieShigui, Chen Yuhua, Zhou Limei. Fine Needle Aspiration Cytology of Breast Lesions: Analysis of 323 Cases. *The Chinese-German Journal of Clinical Oncology* 2004; 3(3): 172-74.

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