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ORIGINAL ARTICLE

EFFECTIVENESS OF FINE NEEDLE ASPIRATION CYTOLOGY IN DETECTING BREAST LESIONS

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ABSTRACT:

Background: 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. The present study was conducted to analyze the effectiveness of FNAC in detecting breast masses. **Materials & Methods:** The present study included 40 women presented to the department of obstectrics and gynaecology with complain of breast lump. 10ml of plastic disposable syringe and disposable needles of 23-24 gauge was used for fine needle aspiration cytology and it was stained with H & E and Giemsa stain. **Results:** Age group 31- 40 years consisted of 7 patients, 41-50 years had 13 patients and 51-60 years comprised of 20 patients. The difference was significant (P- 0.01). Out of 40 patients, 24 had benign lesions and 16 had malignant lesions. Maximum benign lesions (12) were seen in age group 31-40 years and maximum malignant lesions (9) were seen in age group 51-60 years. The difference was significant (P- 0.02). Cytological diagnosis were abscess (1), Granulomatous mastitis (1), Fibroadenoma (14), Epithelail hyperplasia (4), Simple cyst (3), Fibrocystic disease (1), Ductal hyperplasia with atypia (1), Papilloma (11) and Ductal carcinoma (4).

Conclusion: Fine needle aspiration cytology is a reliable tool in detecting breast lesions. It should be considered routine diagnostic method in patients with breast lump. There is high correlation with histopathological findings.

Key words: Breast cancer, Fibroadenoma, Fine needle aspiration cytology.

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INTRODUCTION

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.[1]

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. There are various diagnostic modalities available. USG are among the approaches. Fine Needle Aspiration Cytology (FNAC) is one of the important components of 'triple approach.' It is also considered one of the preoperative diagnosis of breast lesions.[2]

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.[3] 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.[4]

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.[5]

The present study was conducted to analyze the effectiveness of FNAC in detecting breast masses.

MATERIALS & METHODS

The present study included 40 women presented to the department of obstectrics and gynaecology with complain of breast lump. All were informed regarding the study and need of doing FNAC. Patient's information such as name, age, clinical features etc. were recorded.

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 shows that age group 31- 40 years consisted of 7 patients, 41-50 years had 13 patients and 51-60 years comprised of 20 patients. The difference was significant (P- 0.01). Graph I shows that out of 40 patients, 24 had benign lesions and 16 had malignant lesions. Maximum benign lesions (12) were seen in age group 31-40 years and maximum malignant lesions (9) were seen in age group 51-60 years. The difference was significant (P- 0.02). Table II showed that cytological diagnosis were abscess (1), Granulomatous mastitis (1), Fibroadenoma (14), Epithelail hyperplasia (4), Simple cyst (3), Fibrocystic disease (1), Ductal hyperplasia with atypia (1), Papilloma (11) and Ductal carcinoma (4).

Table I Distribution of patients according to age

Age group	Number	P value
31-40	7	
41-50	13	0.01
51-60	20	

Graph I Nature of lesion

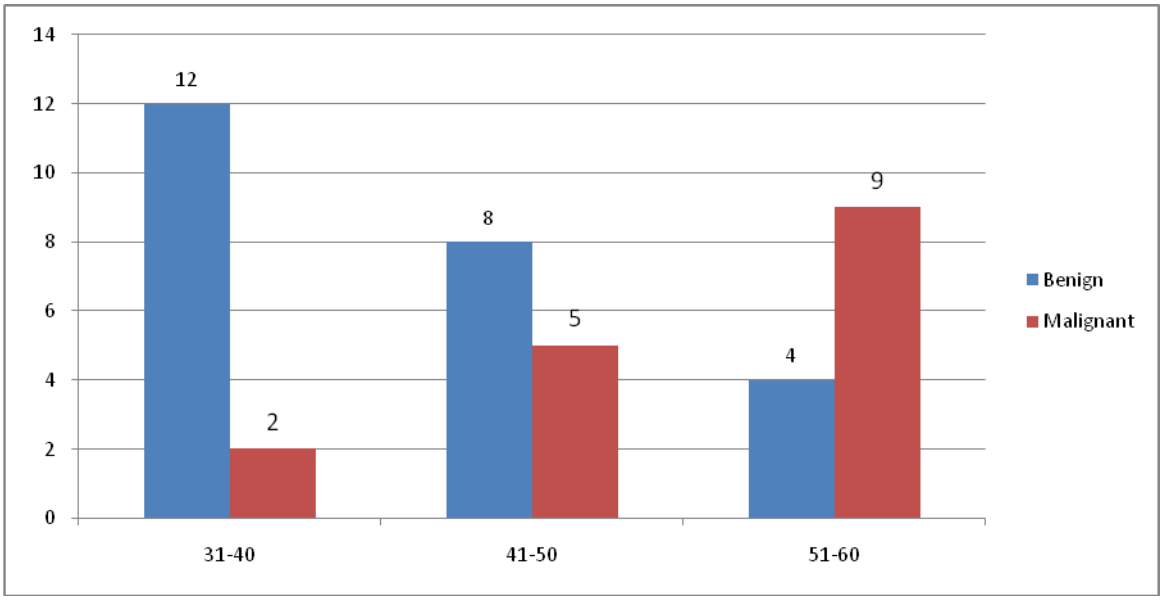

Table II Cytological diagnosis of breast lesion by FNAC

Category	Cytological diagnosis	Number
Inflammatory	Abscess	1
	Granulomatous mastitis	1
Benign breast lesions	Fibroadenoma	14
	Epithelail hyperplasia	4
	Simple cyst	3
	Fibrocystic disease	1
Atypical or intermediate benign lesions	Ductal hyperplasia with atypia	1
Malignant	Papilloma	11
	Ductal carcinoma	4
Total		40

DISCUSSION

Martin and Ellis (1930)[6] 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. It 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.

The present study was conducted to analyze the effectiveness of FNAC in detecting breast masses. It included 40 women presented to the department of obstectrics and gynaecology with complain of breast lump. All were informed regarding the study and need of doing FNAC.

In our study, maximum patients with breast lump was from age group 51-60 years (20), followed by 41-50 years (13) and 31- 40 years (7) patients. This is similar to results obtained in study by Bell.[7]

We found that 24 had benign lesions and 16 had malignant lesions. Maximum benign lesions (12) were seen in age group 31-40 years and maximum malignant lesions (9) were seen in age group 51-60 years. This is in accordance to Tiwari et al.[8]

We found that showed that cytological diagnosis was abscess, epithelail hyperplasia, granulomatous mastitis, fibroadenoma, papilloma, ductal carcinoma, simple cyst, fibrocystic disease and ductal hyperplasia with atypia. This is similar to Zhang Qin et al.[9]

We found that out of 24 benign cases in cytological study 1 was diagnosed as malignant in histopathological study, and all malignant cases in cytological study were confirmed as a malignant in histopathological study. Thus out of 40 cases, in 39 cases cytological diagnosis was consistent with histopathological diagnosis giving accuracy rate of 96.2 %.

CONCLUSION

Fine needle aspiration cytology is a reliable tool in detecting breast lesions. It should be considered routine diagnostic method in patients with breast lump. There is high correlation with histopathological findings.

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