International Surgery Journal
Vishnu VK et al. Int Surg J. 2019 Nov;6(11):4095-4097
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20195129

Original Research Article

Comparison between histopathology and fine needle aspiration cytology in the case of breast lumps

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Received: 15 September 2019
Accepted: 17 October 2019

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ABSTRACT

Background: Breast lump is one of the common pathologies seen in surgical practice. Hence it is of importance to have a reliable diagnostic method to distinguish between benign and malignant lumps. Aim of this study was to bring out fine needle aspiration cytology (FNAC) as a rapid, inexpensive, accurate and least invasive diagnostic method for this purpose.
Methods: A prospective study conducted between December 2017 to November 2018 on all 30 patients admitted at Rajarajeswari Medical College and Hospital with breast lumps. Patients were subjected to clinical examination FNAC and Histopathology.
Results: Clinically 64% were categorized as benign lumps and 36% malignant. On FNAC 64% were fibroadenoma, 30% suggestive of malignancy and 6% suspicious of malignancy. On Histopathology 60% were fibroadenoma, 33% turned out to be carcinoma and 7% benign phyllodes. 4% of benign lesions on FNAC turned out malignant on histopathology.
Conclusions: Although son mammography is the conventional approach with a sensitivity of 76.5% and specificity of 90.48%, in this study FNAC was found to have sensitivity of 96.6% and specificity of 100% and can be a reliable tool for early diagnosis in the case of breast lumps.

Keywords: Benign breast disease, Carcinoma breast, Fibroadenoma, Fine needle aspiration cytology, Histopathology, Phyllodes

INTRODUCTION

Breast carcinoma is the most common malignant tumor and the leading cause of death from cancer in women.[1] Patients are evaluated based on history, examination, imaging, Fine needle aspiration cytology (FNAC) and then comparing with histopathology. FNAC is being performed as a pre-operative test to evaluate breast lump. FNAC is cost effective and can prevent unnecessary surgery. It has been noted in previous studies that there is a wide variation between the clinical features, FNAC and histopathology in the case of breast lumps. Author wanted to know how valid this variation is among population group and assess the sensitivity and specificity of FNAC.

METHODS

A prospective study was carried out in Rajarajeshwari Medical College and Hospital, Bangalore, India from August 2018 to Januray 2019 on 30 patients.

Inclusion criteria

- All female patients presenting with breast lumps and undergoing surgical excision biopsy.

Exclusion criteria

- Patients with infective breast pathology.
- Patients not undergoing surgery.

Statistical analysis

The statistical analysis was performed using SPSS 18.0. The categorical variables was analysed using frequencies and percentages.

RESULTS

The mean age group of woman in the study was 28.4 years.70% were of the age group 21-40 years. 10% aged 41-60 years and 10% were than 20 years of age. About 5% were >60 years of age (Figure 1).

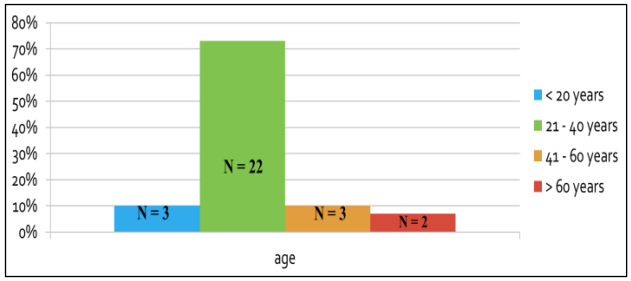

Figure 1: Mean age group in the study.

On clinical examination 64% (19) of the patients were thought to have benign breast lumps and 36% (11) were thought to have malignant lesions.

As per FNAC, 64 % were reported as fibroadenoma, 30% of the patients were reported as suggestive of malignancy and 6% as suspicious of malignancy (Table 1).

Table 1: Distribution of the study group according to FNAC.

Age group (in years)	Fibro-adenoma	Suggestive of malignancy	Suspicious of malignancy
<20	3		
21-30	14		
31-40	2	6	
41-50		3	
51-60			
>60			2
Total	19 (64%)	9 (30%)	2 (6%)

Table 2: Distribution of the study groups according to findings of histopathology.

Age group (in years)	Fibro-adenoma	Malignancy	Benign phyllodes tumor
<20	3		
21-40	15	7	
41-60		3	
>60			2
Total	18 (60%)	10 (33%)	2 (7%)

Histopathology showed that 60% of the patients had fibroadenoma, 33% were found to carcinoma breast and 7% had benign phyllodes tumor (Table 2).

Table 3: Comparison of findings clinically with histopathology and FNAC.

Diagnosis	Clinical	FNAC	Histo-pathology
	N (%)	**N (%)**	**N (%)**
Fibroadenoma	19 (64)	19 (64)	18 (60)
Malignancy	11 (36)	9 (30)	10 (33)
Bengn phyllodes	-	2 (7)	2 (7)

On comparison of diagnosis by FNAC and histopathology, 4 % of benign lesion in FNAC turned out to be malignant on histopathology. Author also calculated the sensitivity and specificity of FNAC as a diagnostic procedure for breast lesions. Sensitivity of FNAC was the ability to identify correctly all those who have the disease and was 96.6.%

Specificity of FNAC was the ability to identify correctly the candidates who do not have the disease and was 100%

DISCUSSION

FNAC of breast is commonly used as part of the diagnostic triad, which in addition includes clinical breast examination and radiological examination. (mammography and ultrasonography).[2] Excision biopsy remains "gold standard" with 100% sensitivity.[3] However compared to FNAC, excision biopsy is expensive and associated with greater degree of patient morbidity.[4] Open biopsy leaves a visible scar that is cosmetically undesirable and has a significantly longer turnaround time.[5,6]

However for FNAC both false negative and false positive results can occur. The sensitivity of FNAC ranges from 80%-98% and the specificity maybe up to 100% as per previous studies.[5]

In this study, definitive diagnosis was available in 96% of cases. A similar study done by Hirachand et al, found that 5.6% were benign disease of breast, 64.2% cases as fibroadenoma, 7.5% were suggestive of malignancy,2 2.7% suspicious of malignancy on FNAC and 89.6% turned out to be fibroadenoma, 3.6% fibrocystic disease, 3.8% had duct ectesia and 1.9% was phyllodes on histopathology.[7]

Kiran et al, did a study which showed that 21.3% were benign lesions, 56.7% cases were fibroadenoma, 14.7% suggestive of malignancy and 7.3% suspicious of malignancy on FNAC while 74% had fibroadenoma, 19.3% had invasive ductal carcinoma, 2.7% had

phyllodes tumor, 2.7% showed pagets disease on histopathology.[8]

From this study with a mean age group of patients ranging from 21-40 years, 64% were fibroadenoma, 30% reported as suggestive of malignancy and 6% as suspicious of malignancy on FNAC. On histopathology, 60% of the patients had fibroadenoma, 33% were found to have carcinoma and 7% had benign phyllodes tumor. 4% of the cases which were thought to be benign turned out to be malignant on histopathology. FNAC was found to have a sensitivity of 96.6% and a specificity of.

CONCLUSION

FNAC is a reliable, fast and accurate diagnostic method for the assessment of breast lumps. It has manageable complications and can be performed on an outpatient basis, thereby reducing hospital stay. Due to its early turnover time FNAC could be employed as an early diagnostic tool.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Vishnu VK, Ashwini RK, Rajagopalan S. Comparison between histopathology and fine needle aspiration cytology in the case of breast lumps. Int Surg J 2019;6:4095-7.