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Clinical Profile and Correlation between FNAC and Histopathology of Breast Lumps in a Teaching Hospital

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Abstract- Breast lump is a common finding in surgical practice. The breast lump so presented should accurately diagnose in order to initiate the treatment early. In order to study the efficacy of FNAC, this study was undertaken in Outpatient department. A total of 150 patients attending the outpatient department were chosen as study sample. The sample for FNAC was obtained by using ultrasound guided needle aspiration and the tissue excised was sent to histopathological examination. The mean age group of women in this study was 34.98 years and majority of the women were aged 21 – 30 years. More than half of the women in this study had lump measuring 1 – 3 × 1 - 3 cms. In this study, 21.3% of the breast lumps were due to benign breast disease, 56.7% of the women had fibroadenoma of the breast, 14.7% had suspicious malignancy and 7.3% had features suggestive of malignancy on FNAC examination. The comparison of FNAC findings with histopathology had shown that 17.3% of the patients who were diagnosed as benign breast disease had fibro adenoma on histopathology, 12% with suspicious malignancy turned out as invasive duct carcinoma.

Keywords: *breast lump, FNAC, histopathology.*

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Clinical Profile and Correlation between FNAC and Histopathology of Breast Lumps in a Teaching Hospital

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I. Introduction

Lump in breast is common presentation in surgical practice. The lesions of the breast have diverse etiology and presentation may range from a benign tumour, cyst or a malignancy.[1] The dominant breast lumps are often defined as clinically benign breast lesions which are distinct, persistent and relatively unchanging and include fibroadenomas, gross cysts and galactoceles.[2] The diagnostic methods of palpable breast lumps should be rapid, inexpensive, most accurate and least invasive to evaluate and distinguish between benign and malignant lumps in outpatient clinics. Such methods benefits both patients and surgeons by promoting proper preoperative diagnosis and management and by limiting the unnecessary testing and procedures.[3, 4] FNAC is a relatively simple, reliable, atraumatic, economical and complication free technique for the evaluation of mass lesions. It can also be easily repeated if an adequate aspirate is not obtained.

FNAC has superseded the use of frozen section examination in the diagnosis and management of patients with breast cancer.[5] the biopsy of the palpable breast lesion based on the histological study of the tissue specimens can provide all the reliable information to the surgeon and oncologist for modern therapeutic strategy in decision making regarding the patients treatment. It permits the eventual use of neo adjuvant therapy.[6] It has found to have sensitivity ranging from 82% to 97.5% and specificity of more than 99%.[7]

The studies regarding comparison of FNAC with Histopathology is scant in this part of the country. Hence, this study was undertaken to compare the results of FNAC and tru-cut biopsy in detection of breast lesion pathology.

II. Materials and Methods

A cross sectional study was undertaken to study the clinical profile and correlation between FNAC and Histopathology of breast lumps. This study was conducted in Department of Surgery of Basaveshwara Medical College and Hospital, Chitradurga. A total of 150 patients attending the outpatient department were chosen as study sample. Institutional ethical committee approval was obtained before the study. All the patients included as study sample were obtained the informed consent. All the patients aged more than 18 years presenting with breast lumps were included in the study. Patients with breast pain of any cause were excluded from the study.

The patients thus selected were subjected for detailed history including general physical examination, systemic and local examination. The patients were also subjected for detailed laboratory work up including basic investigations. The sample was obtained by the help of ultrasound with all aseptic precautions. The sample was spread on the slide handed over to pathologist for staining and interpretation. The data thus obtained was entered in a predesigned proforma. The data was analysed using Statistical Package for social services (SPSS vs 18). The categorical variables were analysed using frequencies and percentages.

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III. Results

Table 1 : Demographic Characteristics and Clinical Profile of Patients

		Frequency	Percentage
Age group	Less than 20 years	21	14.0
	21 – 30 years	52	34.7
	31 – 40 years	37	24.7
	41 – 50 years	20	13.3
	51 – 60 years	7	4.7
	More than 60 years	13	8.7
Side of lesion	Bilateral	4	2.7
	Right	68	45.3
	Left	78	52.0
Discharge from nipple	Present	7	4.7
	No	143	95.3
Loss of weight	Present	19	12.7
	No	131	87.3
Family history of breast disease	Yes	4	2.7
	No	146	97.3
	Total	150	100

The mean age of women in this study was 34.98 years. Majority of the women were aged 21 – 30 years, 24.7% were aged between 31 – 40 years, 14% were aged between less than 20 years. About 52% of the women had lump in left breast, 45.3% had lump in right breast and 4% had bilateral lump. The discharge from nipple was present in 4.7% of the patients and 12.7% had history loss of weight in this study. Only 2.7% of the women in this study had family history of breast disease in this study.

Table 2 : Distribution of the Study Group According to Dimension of Lesion

Dimension of the lesion (Length)	Breadth of the lesion	
	1 – 3 cms n (%)	4 – 6 cms n (%)
1 – 3 cms	80 (53.3)	11 (7.3)
4 – 6 cms	24 (16.0)	34 (22.7)
More than 7 cms	0	1 (0.7)
Total	104 (69.3)	46 (30.7)

Table no 2 shows the distribution of the study group according to the dimension of the lesion. About 53.3% of the women had lump measuring 1 – 3 × 1 - 3 cms, 22.7% had lump measuring 4 – 6 × 4 – 6 cms, 16% had lump measuring 4 – 6 × 1 – 3 cms and 7.3% had lump measuring 1 – 3 × 4 – 6 cms.

Table 3 : Distribution of the Study Group According to Findings of FNAC According to Age

Age group	Benign breast disease	Fibroadenoma	Suggestive of malignancy	Suspicious malignancy
Less than 20 years	3 (2.0)	18 (12.0)		
21 – 30 years	17 (11.3)	33 (22.0)		2 (1.3)
31 – 40 years	7 (4.7)	26 (17.3)	2 (1.3)	2 (1.3)
41 – 50 years	3 (2.0)	8 (5.3)	4 (2.7)	5 (3.3)
51 – 60 years			5 (3.3)	2 (1.3)
More than 60 years	2 (1.3)			11 (7.3)
Total	32 (21.3)	85 (56.7)	11 (7.3)	22 (14.7)

In this study, 21.3% of the breast lumps were due to benign breast disease, 56.7% of the women had fibroadenoma of the breast, 14.7% had suspicious malignancy and 7.3% had features suggestive of malignancy. Women aged less than 20 years had benign breast disease and most of the women aged more than 40 years had FNAC features of suspicious malignancy.

Table 4 : Distribution of the Study Group According to Findings of Histopathology According to Age

Age group	Fibroadenoma	Invasive duct carcinoma	Lipoma	Paget's disease of nipple	Phylloids tumour
Less than 20 years	21 (14.0)				
21 – 30 years	48 (32.0)	2 (1.3)	2 (1.3)		
31 – 40 years	31 (20.7)	4 (2.7)			2 (1.3)
41 – 50 years	11 (7.3)	9 (6.0)			
51 – 60 years		7 (4.7)			
More than 60 years		7 (4.7)		4 (2.7)	2 (1.3)
Total	111 (74.0)	29 (19.3)	2 (1.3)	4 (2.7)	4 (2.7)

The histopathological findings in this study had shown that, 74% of the patients had fibroadenoma, 19.3% had invasive duct carcinoma, 2.7% had paget's disease of nipple and phylloides tumour.

Table 5 : Comparison of Findings of Histopathology and FNAC

FNAC results	Histopathology findings				
	Fibroadenoma n (%)	Invasive duct carcinoma n (%)	Lipoma n (%)	Paget's disease of nipple n (%)	Phylloids tumour n (%)
Benign breast disease	26 (17.3)		2 (1.3)		4 (2.7)
Fibro adenoma	85 (56.7)				
Suggestive of malignancy		11 (7.3)			
Suspicious malignancy		18 (12.0)		4 (2.7)	
Total	111 (74.0)	29 (19.3)	2 (1.3)	4 (2.7)	4 (2.7)

On comparison of FNAC findings with histopathology, about 17.3% of the patients in this study who were diagnosed as benign breast disease had fibro adenoma on histopathology, 12% with suspicious malignancy turned out as invasive duct carcinoma.

IV. Discussion

Breast Lumps are common presentations to the surgical outpatient department. Breast lumps are common surgical problem in females. All breast lesions are not malignant but can also be benign. Majority of the benign breast lumps do not progress to cancer.[1]

Hence the diagnostic method of palpable breast lump should be rapid, inexpensive, most accurate and least invasive and should be able to distinguish between benign and malignant lumps in the outpatient clinics. Such methods help the surgeons in early and accurate diagnosis and management and also help the patient in improving the prognosis.[3, 4] Hence a cross sectional study was conducted in order to evaluate and compare the findings of FNAC in outpatient department.

The mean age of the women with breast lump in this study was 34.98 years. Majority of the women belonged to 21 – 40 years. In a study by Homesh et al, the mean age of the women who were subjected for FNAC was 33.36 years.[8] A study in Nepal, had shown that the age of patients ranged from 16 to 72 years and maximum number of patients were in the age group of 20 – 40 years.[9] In contrast to this study, the mean age of the women in study was 46.12 years.[10] Left breast was commonly affected in this study than right breast. Left breast was affected in more than 50% of the patients in this study. In a study by Homesh et al,[8] right breast was involved in 50.3% of the women and left breast was involved in 40.7% of the women.

The dimension of majority of the lesions in this study was between 1 – 3 × 1 - 3 cms. Mean size of the breast lumps in a study In Saudi Arabia was 3.47 cms with a range of 2 – 10 cms in contrary to the findings of this study.[8] More than 50% of the palpable breast lumps were sized between 1 – 2 cms. The decrease in size of the lesion in yielded inadequate aspirate in a study by Bajwa et al.[11] In another study, the size of lesion was ranged between 2 – 13.5 cm with a mean size of 5.33 cm in contrary to the results of this study.[10]

Majority of the women with breast lump were found to have fibroadenoma in this study. It was followed by benign breast disease and feature suggestive or suspicious of malignancy. About 17.3% of the patients in this study who were diagnosed as benign breast disease had fibro adenoma, 12% with suspicious malignancy turned out as invasive duct carcinoma. In a study, Hirachand et al, have found that 64.2% cases with breast lump had fibro adenoma of the breast, 7.5% reported benign proliferative diseases of the breast and 16% reported to be having malignant breast lesions. There were 3.8% of the cases with epithelial hyperplasia with atypia, 3.8% with duct ectasia and 1.9% had phylloids tumour. The histopathology had shown that 64.2% were turned out to be fibro adenoma, 5.6% turned out to be fibrocystic disease, 3.8% had duct ectasia, 1.9% had phylloids tumour and 1.9% had chronic abscess. The FNAC was not correlated with the histopathological findings in three patients.[9] In a study by Bajwa et al, proliferative and neoplastic lesions accounted for 71% of the total samples in contrary to the results of our study. Fibroadenoma accounted for 48.1% of the cases, infiltrating ductal carcinoma was found in 26.6% of the cases.[11] in a study by Bukhari et al, benign lesions were found in 60% of the cases, 20% had inflammatory aspirates and 40% of the women with breast lump had benign proliferative lesions.[12]

This study was mainly under taken to study the value of FNAC and histopathology in diagnosis of breast lumps. Breast lumps may range from simple benign tumors to invasive malignancy. Accurate and simple diagnostic measures can detect the nature of the lump at an earliest possible time and helps in early management can improve the prognosis. The results of this study had shown that, even though FNAC was considered as a simple, cost effective and easy method, it had low sensitivity in diagnosis compared to trucut biopsy.

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