



ROLE OF FNAC IN EVALUATION OF BREAST LUMP

Pathology

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ABSTRACT

BACKGROUND: In India breast carcinoma is increasingly becoming a common medical problem for women. Hence early detection is important in distinguishing non neoplastic and neoplastic breast lesions prior to definitive management.

AIM: To analyze the cytomorphological spectrum of palpable breast lump by FNAC and subsequently compare results with published studies in literature.

METHODS: This is a cross sectional study conducted in the department of pathology, Shimoga institute of medical sciences, Shimoga, Karnataka from 1st October 2018 to 30th September 2019. It includes 130 patients presenting with palpable breast lump and they were subjected to FNAC.

RESULTS: Among 130 cases of breast lump, 105 benign lesions and 25 malignant lesions were studied. Fibroadenoma was the most common benign lesion and infiltrating ductal carcinoma was the malignant lesion.

CONCLUSION: FNAC is simple and rapid method in diagnosing and distinguishing neoplastic and non neoplastic breast lesions.

KEYWORDS

Breast Lump, Fnac, Fibroadenoma.

INTRODUCTION

A lump in the breast is a common medical problem that presents to clinicians and current practices utilize combination of radiological imaging with FNAC reducing the need for unnecessary surgical excision of benign breast lesion^[1]. "Triple Assessment" is the worldwide accepted protocol for diagnosis of breast lumps which comprise the triad of clinical examination, mammography and pathological diagnosis^[2]. The fine needle aspiration cytology (FNAC) was first introduced by the Martin and Ellis in 1930^[3]. Fine needle aspiration cytology (FNAC) has gained importance as a diagnostic tool to assess the nature of palpable breast lumps due to its simplicity, rapidity, low cost, patient friendly procedure, and its ability to display the abnormal cellularity along with nuclear & cytoplasmic details^[4]. In symptomatic and screening populations FNB may be performed as the first-line investigation.

OBJECTIVE:

The present study is to analyse and evaluate the different type of breast lesions using fine needle aspiration and subsequently compare with other similar studies.

MATERIALS AND METHODS:

The present study was conducted in department of pathology, Shimoga institute of medical sciences, Shivamogga from October 2018 to September 2019. In this study period, FNAC was performed on 130 women presenting with palpable breast lump. FNAC was carried out using 23 gauge needle and 5ml/10ml syringe under aseptic conditions without using local anesthetics. The needle was introduced into the lesion and moved to and fro few times times with negative pressure to get the aspirate. Before removing the needle the negative pressure was removed. Material was spread on the slide and smears were fixed in 95% alcohol for H & E stain and also smears were air dried for leishman stain. The smears were examined under microscope and were evaluated by consultant pathologists and the final diagnoses of the FNAC were reported.

RESULTS:

In this study period FNAC was performed on 130 cases presenting with palpable breast lump. Age group between 21 – 30years (33.07%) was most commonly affected (Table 1). Out of 130 cases, 105 cases (80.77%) were reported as benign lesion and 25 cases (19.23%) were reported as malignant lesion.

Among 105 benign lesions, fibroadenoma was most common and accounted for 50 cases (38.5%), followed by 25 cases of benign breast lesions (25.23%), 12 cases of fibrocystic diseases (9.23%), 11 cases of inflammatory lesions (8.46%), 5 cases of Galactocele (3.85%), 1 case each of Granulomatous mastitis (0.76%) and benign Phylloides (0.76%). Among 25 cases of malignant lesions, all cases were reported as Infiltrating Ductal Carcinoma (Table 2).

Table 1: Age group distribution – Breast lesions

Age group (years)	Number of cases (n)	Percentage (%)
1 - 10	0	0
11-20	18	13.84
21 - 30	43	33.07
31 - 40	30	23.07
41 - 50	22	16.92
51 - 60	8	6.15
61 - 70	6	4.63
>70	3	2.3
Total	130	100

Table 2: Distribution of cytomorphological spectrum of breast lesions

Breast lesions	Number of cases (n)	Percentage (%)	
Benign lesions (105)	Benign breast disease	25	19.23
	Fibroadenoma	50	38.5
	Fibrocystic disease	12	9.23
	Benign phyllodes	1	0.76
	Inflammatory lesion	11	8.46
	Granulomatous mastitis	1	0.76
	Galactocele	5	3.85
Malignant lesions (25)	Infiltrating ductal carcinoma	25	19.23
Total	130	100	

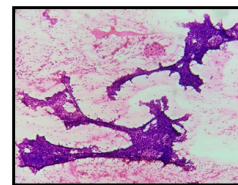


Figure 1: Fibroadenoma (H&E, x10). Smear shows elongated branching fragments of ductal epithelium and many bare bipolar nuclei in the background.

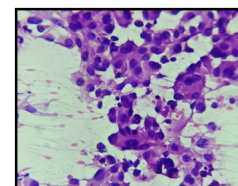


Figure 2: Invasive ductal carcinoma (H&E, x40). Smear shows

poorly cohesive malignant cells with pleomorphic nuclei and irregular chromatin.

DISCUSSION:

FNAC is a useful diagnostic tool and necessary adjunct to clinical examination, as it has created a high level of awareness among the clinicians of the role of cytology techniques in diagnosis of breast lesions presenting as a breast lump^[3]. This technique has become an important part of triple assessment (clinical examination, imaging, and FNAC) of palpable breast lumps^[5]. It is a rapid and effective method for differentiating palpable breast lumps into benign and malignant categories^[6].

In the present study of 130 cases presenting with a palpable breast lump, 105 cases (80.77%) were reported as benign lesions and 25 cases (19.23%) as malignant lesions. All of them were female patients with most common age group involving 21 – 30 years (33.07%). Studies done by Binayke R et al^[2] and Kothi A^[7] et al also reported maximum number of cases in the age group between 21 – 30 years. Whereas study done by Sumcera Farhath Sk et al^[8] reported most number of cases in the age group between 31-40 years.

In our study, out of 105 benign lesions, fibroadenoma (38.5%) was the most common followed by benign breast disease (19.23%). Studies done by Badge et al^[3], Shobha SN et al^[9] and Patel A et al^[10] also reported fibroadenoma as the most common benign lesions.

In present study all the 25 cases of malignant lesions were reported as infiltrating ductal carcinoma. Studies done by Bukhari M H et al^[11] and Reddy CO et al^[12] also reported infiltrating ductal carcinoma as the most common malignant lesion.

CONCLUSION:

FNAC is a simple, rapid and reliable diagnostic tool which is definitely significant in distinguishing benign and malignant lesions of breast lump and helps patient and clinician at the time of procedure. Thus it allows treatment decisions to be made immediately and helps in definitive operative intervention.

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