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FINE NEEDLE ASPIRATION CYTOLOGY OF PALPABLE BREAST LUMPS WITH THEIR HISTOPATHOLOGICAL CORRELATION

Pathology

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ABSTRACT

BACKGROUND: Fine-needle aspiration cytology (FNAC) is still an important first line diagnostic procedure in developing countries. FNAC of breast lesions is quite specific and sensitive investigation and the results are comparable to histopathology.Aim of study is to evaluate role of fine needle aspiration cytology in the diagnosis of breast lesions and to compare the cytological findings with the histopathology wherever possible. In addition the sensitivity, specificity and accuracy of FNAC in breast lesions are carried out.

MATERIAL METHODS &RESULT: The present study was carried out on 100 patients who presented with palpable lump in the breast ;irrespective of age and sex were included in the study from the district hospital of North Karnataka, over a period of 15 months.In 69 cases ,cytological diagnosis was correlated with histological findings .

RESULTS: There was preponderance of benign breast lesions: 55cases (79.71%) and malignant cases 14(20.29%) .In present study,sensitivity is 92.85%,specificity is 100% in diagnosisng malignant lesions,with accuracy of 98.48% .Positive predictive value is 100% and negative predictive value is 98.11%.

CONCLUSION: With experienced hands, FNAC is safe, cost effective and a reliable technique for preoperative evaluation of palpable breast lumps. FNAC features are more informative when combined with physical and radiology findings (Triple test).

KEYWORDS

Breast, Cytology,Histology, FNAC, ICC,

INTRODUCTION:

Fine needle aspiration cytology (FNAC) has become popular as a valuable tool in preoperative assessment of breast masses, and it shows high accuracy, sensitivity, and specificity. It has gained popularity due to its fast and easy approach, being inexpensive, and can be performed with little complications. To differentiate benign from malignant lesions is one of the major goals of FNAC.Breast cancer ranks as the fifth cause of death from cancer, but it is still the most frequent cause of cancer death in women in developing regions.

RESULT:

TABLE I:Age incidence breast lesions(69 cases)

Age range	Number of cases	Percentage
0-1	0	0%
11-20	20	28.98%
21-30	25	36.23%
31-40	12	17.39%
41-50	06	8.69%
51-60	05	7.24%
61-70	01	1.44%
Total	69	

The maximum lesions found in the age range of 21 to 30 years.

TABLE II: Sex incidence of breast lesion.

Sex	Total number of cases	Percentage
Female	67	97.10%
Male	02	2.89%
Total	69	

Two cases were from male breast.Both confirmed benign lesion histologically.

TABLE III:Cytological findings in breast FNAC in general.

Cytological diagnosi	Number of cases	Percentge
Benign	53	76.81 %
Malignant	10	14.49 %
Suspicious	03	4.34 %
Unsatisfactory	03	4.34 %
Total	69	

There were 10 cases(14.49%)diadnosed as malignant lesions cytologically, all confirmed histologically,so True positive cases 100%.also three cases suspicious for malignancy cytologically ,were histologically confirmed as malignant .So included in true positive cases.Out of 53 benign cases(76.81%),one case histologically diagnosed as malignant lesion,making the False negative rate of (1.44%).Three unsatisfactory diagnosed histologicaaly as benign lesions.

TABLE 1V :Cytological and histopathological correlation in all 69 cases.

Cytological diagnosis	Number	Percentage	Histopathological diagnosis	Number	Percentage
Malignant	10	14.49 %	Benign	---	---
			Malignant	10	14.49 %
Benign	53	76.81 %	Benign	52	75.36 %
			Malignant	1	1.44 %
Suspicious	3	4.34 %	Benign	---	---
			Malignanat	3	4.34 %
Unsatisfactory	3	4.34 %	Benign	---	---
			Malignant	3	4.34 %

The incidence of false Negative case was 1 (1.44%).False positive case zero.This proves that FNAC is great value in assessing breast masses and is gained importance as a prime OPD based investigative modality.

DISCUSSION: Cancer is set to become a major cause of morbidity and mortality in the coming decades in every region of the world.[1]

Primary goal of FNAC is to separate benign lesions from malignant lesions for the purpose of planning the therapeutic protocol and uneventful follow-up.[2,3,] . In the era of neo-adjuvant chemotherapy, grading of breast carcinoma should be incorporated in FNAC reports for prognostication. Grading of breast carcinoma on FNAC is also very useful in patients with locally advanced disease, older patients with accompanying chronic diseases and patients who rejects surgery.[4] Prognostic testing is commonly performed on surgically excised lesions. However, there are clinical conditions in which a surgical specimen may not be suitable or available for such analysis. In these circumstances, fine-needle aspiration biopsy provide an attractive sample for prognostic testings. [5] Benign breast lesions are usually easy to diagnose when their characteristic cytologic patterns are

obvious.[6]. A recent large study suggesting that axillary lymph node dissection may be unnecessary, even in patients with a positive sentinel lymph node, offers the prospect that patients with positive US-FNA results may avoid axillary surgery altogether.[7,8,9] Rapid on site evaluation (ROSE) has the potential to improve the adequacy rates of fine-needle aspiration (FNA) cytology.[10]. Cytology scientists are highly accurate at determining specimen adequacy at ROSE for a wide range of body sites. {11]. FNAC being a simple, feasible, outpatient department procedure and less invasive when compared with core biopsy, cytological grading can be useful in prognostication and management of carcinoma breast cases.[12] Cytological grading[CG] is comparable to HG[Histological Grading} in majority of cases. Because neoadjuvant chemotherapy is becoming increasingly popular as primary treatment modality of breast cancer, CG could be a useful parameter in selecting the mode of therapy and predicting tumor behavior.[13]

Analysis of steroid receptor status has become the standard of care for patients with breast cancer. Traditional factor such as detection of the presence or absence of ER, PR, and Her2/neu in breast carcinoma is known to be clinically essential for determining the responsiveness to the endocrine therapy and predicting prognosis in newly diagnosed and relapsed breast carcinoma.[14] These factors can be assessed on the FNAC aspirates by the procedure called as ICC which is a well-accepted procedure for determining ER, PR, and Her2/neu.[15]

FNAC should be performed as a standard procedure in the clinical evaluation of male breast masses too. Many unnecessary surgical biopsies for histopathologic diagnosis can thus be avoided.[16]

CONCLUSION:

We conclude that breast masses can be diagnosed with a high degree of accuracy by combined physical, mammographic, and fine-needle aspiration cytologic examination. FNAC is an essential component in the preoperative management of breast lesions. Its accuracy, ease of use, and affordability are factors that cause its popularity. The advent of imaging technology together with the clinical expertise of the clinician contributed to its increased sensitivity.

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