



ROLE OF FNAC IN EVALUATION OF BREAST LUMP

Pathology

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ABSTRACT

BACKGROUND: one of the most common medical problems women face today is a lump in the breast. In India breast carcinoma is the second most common malignancy encountered preceded by cervical cancer, hence early detection is important to distinguish non neoplastic from neoplastic breast lesions prior to definitive management. The method is rapid, accurate and minimally invasive and serve as a therapeutic procedure when a cyst is examined.

AIM: Aim of the study was to analyze the cytomorphological spectrum of palpable breast lesions in female patients by FNAC and subsequently compare our results with published studies in literature

METHODS: This is a cross sectional study. this study was conducted at department of pathology, Shimoga institute of medical sciences, Shivamogga , Karnataka .This study includes 130 patients who presented with palpable breast lumps and were subjected to FNAC of the palpable breast lump over a period of 8 months

RESULTS: Among 130 cases of breast lump, among 112 cases of neoplastic lesion benign lesions were 87 cases, malignant lesions were 25 cases, and 18 were non neoplastic . Fibroadenoma was the most common benign lesion and ductal carcinoma was the most common malignant lesion

CONCLUSION: Patient with a palpable breast lump, FNAC can help to rule out a malignant lesion. This can hence afford as a cost-effective method in diagnosing breast lesion. also due to its high tolerability and high diagnostic accuracy the patient need not be subjected to further evaluation which helps in the psychological and well-being of patient.

KEYWORDS

Breast lump, cytopathology of breast , FNAC Breast

INTRODUCTION

Breast carcinomas are one of the leading causes of cancer in women. All breast lesions are not malignant, and all the benign lesions do not progress to cancer; however, the accuracy of diagnosis can be increased by a combination of preoperative tests (like physical examination, mammography, fine-needle aspiration cytology, and core needle biopsy). These modalities are more accurate, reliable, and acceptable when compared with a single adopted diagnostic procedure despite of having their own technical limitations^(1,3)

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⁽⁴⁾

The main purpose of FNAC in breast lumps is to pick all the suspicious breast lesions and do categorization accordingly, as in most cases definitive treatment can often be based on cytological diagnosis without the need for histopathological examination⁽⁶⁾

Breast carcinomas are one of the leading causes of cancer in women. Fine Needle Aspiration Cytology (FNAC) is one of the important components of 'triple approach', which has been widely accepted for the preoperative diagnosis of breast lesions⁽⁸⁾

MATERIALS AND METHODS

The present study was hospital based cross sectional study where FNAC was done on 130 consecutive cases of palpable breast lumps referred to Shimoga institute of medical sciences Shivamogga, Pathology Department over a period of eight months from January 2019 to august 2019. In each case along with detailed history and clinical examination, variables like patient's age, gender, clinical symptoms, location of swelling, gross examination of aspirate and cytomorphological patterns were studied. After explaining the procedure in detail consent was taken from every patient. Aspiration was done using 22-gauge needle and 10ml plastic syringe with a detachable syringe holder. The material was spread on the slide and smears were fixed in methanol. The smears were then stained with eosin and hematoxylin. After drying the smears were mounted with cover slips. The data was entered and analyzed using Microsoft excel.

Inclusion Criteria

All female patients presenting with palpable breast lumps.

EXCLUSION CRITERIA

Male patients with palpable breast lumps.

RESULTS

The age of the patients in the present study varied from 16 to 80 years. This study documented the fact that benign breast lesions were the most common lesions in young females, among which the Fibroadenoma (Fig.1) was the commonest one. The malignant lesions were common in fourth and fifth decades of life, among which infiltrating ductal carcinoma (Fig.2) was the most common lesion. The patient's age ranged from 12 to 89 years with median age of 56.5 years. The most common affected age group was 21-30.

Considering the cytomorphological spectrum, neoplastic breast lesions (86.1%) were more common than non-neoplastic breast (13.8%) lesions. In the neoplastic category, the benign neoplastic lesions (87 cases) (66.9%) were more than malignant tumors (25 cases) (19.2%). Benign neoplastic lesions were all fibroadenomas. In our case study, 6 cases of fibroadenoma showed cystic change. In malignant category, all the cases (25 cases) (25%) were of ductal carcinoma. In non-neoplastic category, total 18 cases (18.3%) were observed out of which most commonly found was fibrocystic disease (8 cases) (44.4%). In the inflammatory category of breast lesions, 4 case of acute mastitis (22.2%) and 3 cases of granulomatous mastitis (16.6%) and 3 case of galactocele (16.6%)

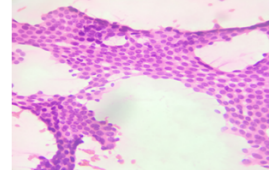


Fig 1. Fibroadenoma- cohesive sheets of benign ductal epithelial cells with myoepithelial cells

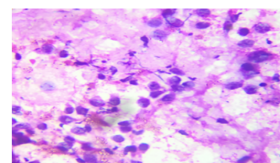


Fig2. Discohesive sheets of malignant cells with vesicular nucleus, prominent nucleoli and scant cytoplasm

DISCUSSION

Early screening and diagnosis of breast lesions help in timely prevention and management of breast pathologies. The most common age group in our study was 21-30 years. Similar observations were reported by Farkhanda and co-authors, Chandanwale et al⁽⁶⁾ However Haque et al reported 30-40 years as most common age group⁽⁶⁾. Study by Chandanwale et al showed 89% lesions were benign and 11% were reported as malignant among 175 cases of FNAC⁽⁶⁾, which was in concordance with present study. This finding corroborates with other studies in literature as well. However Bdour M et al had reported much higher incidence of carcinomas (41%)^(6,9). Benign lesions were significantly more associated with younger age groups as compared to malignant lesions which were more common in patients older than 40 years of age. In present study, among benign lesions, fibro adenoma was most common benign lesion, followed by ductal carcinoma which is the most common lesion among malignant ones. Similar to other studies, we have also reported higher sensitivity, specificity, negative predictive value and thus very good overall diagnostic accuracy of FNAC in diagnosing breast lesions.

CONCLUSION

FNAC has become more reliable in the diagnosis of biological behaviour of breast masses. FNAC needs quite simple logistics as compared to frozen section histopathology and also less invasive as compared to incisional biopsy of breast lump. Therefore, FNAC is a reliable, fast and accurate diagnostic method for the assessment of breast lumps. It has few manageable complications and can be done on outpatient basis.

It is our conclusion therefore that the surgeons and pathologists should continue to deploy the procedure towards the early detection of breast cancer. This will also significantly reduce patient's waiting time for incision/excision biopsy. FNAC is difficult for deep seated and small size lumps which is the pitfall of this study.

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