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Original Research Article

Cytomorphological study of palpable benign breast lesions

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ABSTRACT

Background: Benign breast disease is one of the most common lesions of breast in the reproductive age group. Fine needle aspiration cytology (FNAC) is one of the preliminary tests done to detect breast lesions which help in early detection and management. Studying the cytology and histopathology features of various benign breast diseases was the aim of this study.
Methods: This study is a cross sectional retrospective study conducted in Department of Pathology during September 2016 to February 2017. Clinical details, cytology and histopathology features were collected from the Department records.
Results: A total of 82 cases were collected during the study period. Age groups ranged from 16-40 years. Majority of cases were females and two cases were males. Spectrum of lesions was composed of fibroadenoma, fibrocystic change, breast abscess, benign phyllodes tumor and gynecomastia. Histopathology was done in 41 cases. There was good correlation between cytology and histopathology in this study.
Conclusions: Breast lumps are a common cause of anxiety and apprehension among patients. FNAC helps in rapid diagnosis and early management of lesions. It also helps in preventing unnecessary invasive surgeries in non-neoplastic and benign breast diseases.

Keywords: Breast cytology, Benign breast disease, FNAC

INTRODUCTION

Breast masses are most common complaint with which females patients present to the hospital. Majority of these lesions are either benign or non-neoplastic.[1] Fine needle aspiration cytology (FNAC) is one of the most common tests done for most palpable lesions. It is one of the preliminary tests done on palpable breast masses. FNAC is also a part of the triple assessment test for breast masses.[2]

It is minimally invasive, cost-effective and diagnostic accuracy is good.[3] Rapid turnaround times help in same day diagnosis of breast lesions, and early management. The rapid identification of benign breast diseases decreases apprehension of patients.[4] This study was conducted with an objective to determine various forms of benign breast lesion presented to our hospital.

METHODS

This is a retrospective cross sectional study conducted in Department of Pathology, Nimra institute of medical sciences, Vijayawada from September 2016 to February 2017.

Clinical details and demographic data cytology and histopathology details were obtained from department records. Inclusion criteria were cases with diagnosis of non-neoplastic and benign breast disease.

All malignant cases were excluded from the study.

RESULTS

A total of 82 cases were included in the present study. Out of which, 80 (97.5%) cases were females and 2 (2.5%) cases were males. Most common presenting complaint was lump in the breast 74 (90%) cases followed by breast pain in 8 (10%) cases. Age of the patients ranged from 16 - 40 years. (Table 1) Mean age of presentation was 27.21 years. Youngest patient was 16 years old and the oldest was 40 years old in our study. Maximum numbers of patients were in 21-30 years age groups, followed by 31-40 years age group. Most of the cases had single breast lump, 8 cases had multiple breast lumps.

Table 1: Age distribution (n=82).

Age group in years	No. of cases	Percentage
11-20	5	6.0
21-30	48	58.53
31-40	29	35.36

Fibroadenoma was the most common diagnosis with 62 (75.60%) cases, followed by fibrocystic change constituting 15 (18.29%) cases. Two male patients included in this study had subareoloar mass and a diagnosis of gynecomastia was rendered in both the cases. The oldest case in this study aged 40 years, presented with 10cm mass, which was diagnosed as benign phyllodes tumor. A diagnosis of breast abscess was given in 2 (2.43%) cases (Table 2).

Table 2: Types of lesions on cytology (n=82).

Diagnosis	No. of cases	Percentage
Fibroadenoma	62	75.60
Fibrocystic change	15	18.29
Breast abscess	2	2.43
Gynecomastia	2	2.43
Benign phyllodes tumor	1	1.21

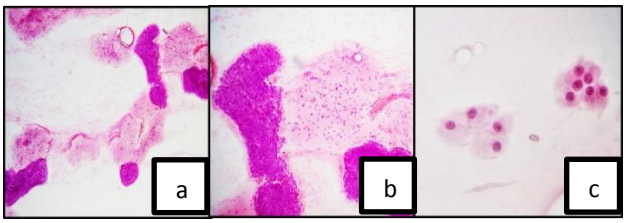

Figure 1: a) Hypercellular smear in fibroadenoma; b) Fibroadenoma showing epithelial cell clusters and fibromyxoid background; c) apocrine cells in fibrocystic change.

Out of the 82 cases on which FNAC was done, histopathology report was available only in 41 cases. Of the 33 case of fibroadenoma on FNAC, 29 cases were confirmed as fibroadenoma and 4 cases were reported as fibroadenosis. Six cases of fibrocystic change and 2 cases of gynecomastia were confirmed on histopathology.

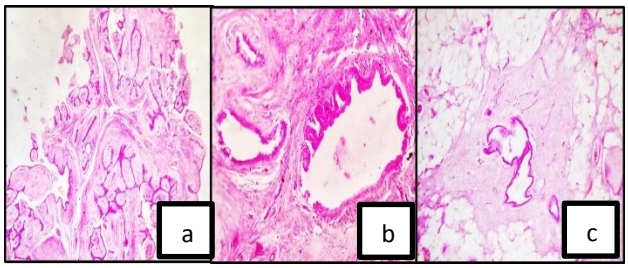

Figure 2: Histopathology; a) fibroadenoma; b) fibrocystic change; c) gynecomastia.

DISCUSSION

Benign breast disease is the most common lesion in the breast in reproductive age group. Cytology is an important tool in preoperative diagnosis of breast lesions. The detection rate of these lesions has increased due to increased awareness among patients and ease of doing FNAC. It has good tolerance among the patients and is relatively inexpensive.[5]

A total of 82 cases were included in this study with various types of benign breast disease. All the cases in our study fall in the reproductive age group population. Similar findings have been reported in earlier studies done by Elmadhoun et al, Almobarak et al and Sangma et al.[1,5,6] This has been attributed to influence of hormonal changes on breast tissue.

Fibroadenoma was the most common diagnosis in our study with 62 (75.60%) cases. Sangma et al had reported similar result with 52.74% cases and Albasri et al 43.3% cases.[6,7] They also reported a frequency of incidence of fibroadenoma in literature as 46.6-55.6%.[6] The slightly higher frequency in our study had no particular contributing factor.

Fibrocystic change was seen in 15 (18.29%) cases which was similar to Sangma et al study with 19.7% of cases and Albasari et al had 23.4% cases.[6,7] Gynecomastia was seen in 2 (2.43%) cases which was similar to study done by Elmadhoun et al and Albasri et al who reported a frequency of 3% and 3.1% respectively.[1,7]

Only 1 (1.17%) case was benign phyllodes tumor. However, on histopathology it was diagnosed as cellular fibroadenoma. Older age of the patient, bigger size of the mass and abundant cellular stroma had contributed to the diagnosis of benign phyllodes tumor on cytology. Elmadhoun et al also reported a frequency of 1.7% for benign phyllodes tumor in their study.[1] A conclusive diagnosis is possible by FNAC in most of the cases when additional clinical and radiological details are considered before rendering a diagnosis. Training in breast

cytopathology has been recommended for better conclusive diagnosis.[8]

Also, exact histological subtype is difficult to provide on FNAC as observed in our study. In comparison core needle biopsy and excisional biopsy provide exact histological type in both neoplastic and non-neoplastic condition. However, FNAC is a good diagnostic tool in under resourced laboratories like ours where it can be an alternate to core needle biopsy. Our study has the limitation of having small sample size and being a retrospective study, there will be deficiencies in complete data collection, however, it provides a baseline data of patient population presenting to our hospital.

CONCLUSION

FNAC is a simple minimally invasive test that can help in giving rapid diagnosis and triaging the patients with non-neoplastic, benign and malignant lesions for appropriate management.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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