ORIGINAL RESEARCH PAPER

Volume-7 | Issue-12 | December-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

CYTOMORPHOLOGICAL FINDINGS OF BREAST LESIONS- EARLY DETECTION SAVES LIVES

Medical Science

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ABSTRACT

The increasing toll of breast cancer in developing nations is really a devastating situation. The disease once considered as the problem of affluent nations has now rooted firmly in developing nations like India. Fine-needle aspiration cytology (FNAC) of the breast is a rapid, cost-effective, and sensitive procedure to diagnose breast lesions, and was widely employed to diagnose breast lesions in the past. Present study is aimed at finding out various cytomorphological patterns of breast lumps at our institute. Fine needle aspiration was performed on the patients and cytological diagnosis was made by experienced cytopathologists. A total number of 300 diagnosed cases were included in the study. the most common finding was fibroadenoma and least common was phyllodes tumor. The most common age group involved was 41-50 years and least common was <20 years. There are some intrinsic disadvantages to FNAC, of which the most important is probably difficulty in classification of a significant percentage of breast lesions.

KEYWORDS

Breast; cytology; fine-needle aspiration cytology (FNAC); fibroadenoma

INTRODUCTION-

Fear of breast cancer is widespread, yet many women don't realize that adopting protective living habits may help keep it at bay. Regular screening is touted as the most effective way to reduce breast cancer deaths, although experts continue to debate who should be screened, how often and at what ages. But not nearly enough is said about what women can do on their own to lower their risk of getting breast cancer in the first place. There are a number of symptoms associated with breast cancer, but the first noticeable symptom is often a lump or area of thickened breast tissue. A lump in the breast does not necessarily mean you have cancer - most breast lumps are not cancerous.

Fine needle aspiration cytology (FNAC) is a part of triple assessment of breast lesions and has been recognized as the most cost-effective procedure with shortest turnaround time.[1] In current practice of breast FNAC, diagnosis is based on subjective assessment of microscopic appearance of the aspirates, therefore, difficulties in maintaining consistency and reproducibility in findings are inevitable. Moreover, there exists an overlap in cytological features of benign and malignant lesions which may lead to equivocal diagnosis.[2] When using five reporting categories for breast cytology (i.e., C1-inadequate; C2-benign; C3- atypical; C4-suspicious; and C5-malignant),[3] atypical and suspicious findings indicate equivocal diagnosis wherein tissue biopsy is necessary for definite diagnosis. These findings combined together have reported rates of 6.9–20%,[2] whereas, Al-Kaisai[4] found that the true gray zone in breast cytology is 2% of all cases. Pathologists either do not use the same criteria for diagnosis or apply the same criteria differently from one another.[5] Alternatively it has been observed that globally cytopathologists/pathologists see the same but locally they see different things.[6] In literature, many such computational tools for breast cancer diagnosis can be found with most of them concentrating on classification of FNAC slides as benign or malignant and some focusing on staging of malignancy.[7]

Most studies on FNAC do not make attempt at sub-classifying breast lesions into definite disease types because of the challenges usually encountered (8, 9).

Aim And Objective-

1. To find out the various cytomorphological patterns of breast lumps.
2. To find out incidence of breast lumps in various age groups at a tertiary care centre.

MATERIALS AND METHODS

Present study is a retrospective study. A total number of 300 cases of female breast lumps presented at the OPD of our institute were included in the study. They were referred to the Cytopathology section of department of pathology of our institute for further screening. Complete history and Informed consent was taken from the patients and fine needle aspiration was performed on them using 20 ml syringe and 22-23 gauge needle. Minimum 2-3 passes were made in the lesion. After aspiration 2-3 smears were prepared which was air dried and stained with MGG stain and mounted with a coverslip using dibutyl phthalate xylene (DPX). The slides were then examined by experienced cytopathologists and diagnosis was made.

RESULTS

A total number of 300 cases of breast lumps are included in the study. The data was collected , summarized, compiled in tabulated form and results were made using percentage proportion and frequency distribution. Table no. 1 and 2 shows various cytomorphological patterns of breast lumps diagnosed at our institute along with incidence in various age-groups.

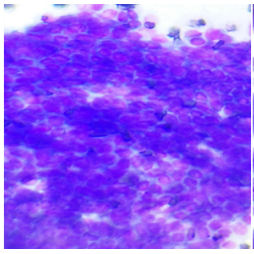
Table No. 1- Spectrum Of Morphological Fingings Of Breast Lumps

S.No	Diagnosis	No. Of Cases	Percentage (%)
1.	Fibroadenoma	171	57
2.	Fibrocystic Disease	15	05
3.	Epithelial Hyperplasia	12	04
4.	Fibroadenosis	27	09
5.	Inflammatory Lesion	07	2.3
6.	Lactating Adenoma	05	1.7
7.	Phyllodes Tumor	02	0.7
8.	Atypical Ductal Hyperplasia	09	03
9.	Ductal Carcinoma	52	17.3
Total		300	100

Table No. 2 Age Group Wise Distribution Of Patients Presenting With Breast Lump.

S.No	Age Group	Number Of Cases	Percentage (%)
1.	<20 yrs	18	06
2.	21-30 yrs	48	16

3.	31-40 yrs	78	26
4.	41-50 yrs	82	27.3
5.	51-60 yrs	48	16
6.	>60 yrs	26	8.7
Total		300	100



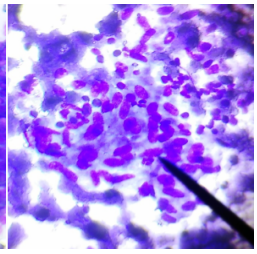
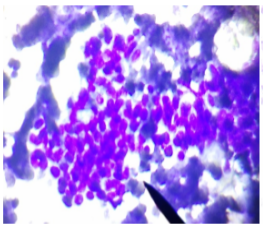


Fig.No.1- Fibroadenoma MGG Stain **Fig No.2 Granulomatous Mastitis MGG Stain**



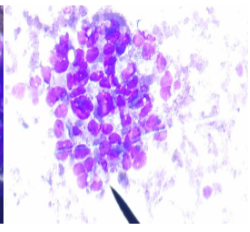


Fig No. 3 Cells Showing Mild Atypia Carcinoma MGG Stain **Fig No.4 Ductal Cell MGG Stain**

DISCUSSION

Fine needle aspiration cytology (FNAC) was found to be more specific than sensitive in this study, 95.5% and 90.0%, respectively with overall diagnostic accuracy of 92.9%. These values are comparable to those documented in similar studies (10–14) and much higher than >60% for specificity and > 80% for sensitivity recommended by NHSBSP of Britain (7). According to the study by Young et al (8), FNAC of the breast is a reliable method for the diagnosis of breast carcinoma but difficulties still exist in their ability to determine tumour sub-type. The accuracy of FNAC in this study to sub-classify breast diseases was comparable to that by Young et al (8) in their study on diagnosis and sub-classification of breast carcinoma by FNAC. However, making accurate diagnosis of metaplastic carcinoma, papillary carcinoma, lobular carcinoma and fibrocystic changes is still a problem.

In the present study, Fibroadenoma 171(57%) was the most common finding followed by ductal carcinoma 52(17.3%) phyllodes tumor 02(0.7%),fibrocystic disease 15 (05%), fibroadenosis 27(09%),epithelial hyperplasia 12 (04%) , inflammatory lesion 07 (2.3%) , lactating adenoma 05(1.7%),ADH 09(03%). Ductal carcinoma was the most common malignant lesions. Most common breast involved was found to be left side and upper outer quadrant was the commonest site. The most common age group involved was between 41-50 years and the least were less than 20 years.

Maygarden et al (9) in their study on sub-classification of benign breast disease by fine needle aspiration cytology, comparing cytological and histopathological findings in 265 palpable breast masses found that overall, the specific diagnosis was correct in 80% of cases. Nevertheless, most of the cytology smears are correctly reported and there are only a few lesions that fall in the true grey zone region, being almost unclassifiable, unidentifiable, or undiagnosable by cytology. In such situations, the use of uncertain categories guides the clinician for further management.

CONCLUSION

The categorization of reporting of breast cytology has provided a buffer for the pathologists while providing necessary information to the clinicians and the patients. Fine needle aspiration cytology is a cost effective, rapid and simple OPD procedure which helps the clinicians and patients in time effective screening of breast lumps which proves to be beneficial in the early diagnosis of breast cancer.

REFERENCES

1. Masood S, Vass L, Ibarra JA, Ljung BM, Stalsberg H, Eniu A, et al. Breast pathology guideline implementation in low-and middle-income countries. J Cancer. 2008;113:2297–304. [PubMed]
2. Kocjan G. Fine needle aspiration cytology: Diagnostic principles and dilemmas. Berlin: Springer; 2006. Diagnostic dilemmas in FNAC: Difficult breast lesions; pp. 214–23.
3. Wilson R, Asbury D, Cooke J, Michell M, Patnick J, editors. Clinical guidelines for breast cancer screening assessment. Sheffield (UK): NHS Cancer Screening Programmes; 2001. NHSBSP Pub. No 49.
4. al-Kaisi N. The spectrum of the "gray zone" in breast cytology. A review of 186 cases of atypical and suspicious cytology. Acta Cytol. 1994;38:898–908. [PubMed]
5. Ackerman AB. Discordance among expert pathologists in diagnosis of melanocytic neoplasms. Hum Pathol. 1996;27:1115–6. [PubMed]
6. Crus-Ramírez N, Acosta-Mesa HG, Carrillo-Calvet H, Nava-Fernández LA, Barrientos-Martínez RE. Diagnosis of breast cancer using Bayesian networks: a case study. Comput Biol Med. 2007;37:1553–64.[PubMed]
7. Demir C, Yener B. Technical Report TR-05-09. Troy (New York): Rensselaer Polytechnic Institute; 2005. Automated cancer diagnosis based on histopathological images: Asystematic survey.
8. Young NA, Mody DR, Davey DD. Diagnosis and sub-classification of breast carcinoma by FNA biopsy: Results of the inter-laboratory comparison program in non-gynaecologic cytopathology. Arch Pathol Lab Med. 2002;126:1453–1457. [PubMed]
9. Maygarden SJ, Novotny DB, Johnson DE, Frable WJ. Subclassification of benign breast disease by fine needle aspiration cytology: comparison of cytologic and histologic findings in 265 palpable breast masses. Acta Cytol. 1994;38:115–29. [PubMed]
10. Daramola AO, Odubanjo MO, Obiajulu FJ, Ikeri NZ, Banjo AA. Correlation between Fine-Needle Aspiration Cytology and Histology for Palpable Breast Masses in a Nigerian Tertiary Health Institution. Int J Breast Cancer. 2015;2015:742573.] [PubMed]
11. Obaseki DE, Olu-Eddo AN, Ogunbiyi JO. Diagnostic accuracy of fine needle aspiration cytology of palpable breast masses in Benin City, Nigeria. West Afr J Med. 2010;29:259–62. [PubMed]
12. Yusuf I, Atanda AT. Validity of fine needle aspiration cytology of the palpable breast lesions: A teaching hospital experience. Niger J Basic Clin Sci. 2014;11:36–40.
13. Malami SA, Ochicha O. A review of the utilization of fine needle aspiration in clinical practice and research in Nigeria. Cyto Journal. 2011;8:12.][PubMed]
14. Mital HC, Nandita PM. Cytological study of palpable breast lumps (407 cases) with their histological correlation. Int J Med Sci Public Health. 2014;3:181–185.