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Pathology

CYTOMORPHOLOGICAL SPECTRUM OF BREAST LESION ON FINE NEEDLE ASPIRATION IN A TERTIARY CARE HOSPITAL- AN 18 MONTH STUDY

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ABSTRACT **Background:** Fine-needle aspiration cytology (FNAC) is a well-established widely acceptable, accurate and reliable technique for evaluating breast lumps. Over past few years, it has become one of the most significant among the Triple Diagnostic method for breast malignancies, including Clinical, radiological and pathological assessment.

Objectives: To study the cytomorphological patterns of various breast lesions diagnosed on Fine Needle Aspiration cytology and to establish the efficacy of FNAC as primary investigation of choice for differentiation between benign and malignant lesions.

Materials and Methods: This is an 18 month retrospective study. Patients who underwent fine needle aspiration cytology for diagnosis of breast lumps in department of pathology, G.R medical college Gwalior were included in the study. FNAC procedure was performed on patients after obtaining a detailed history and conducting a general physical and local examination.

Results: Cytological, the lesions were categorized as inflammatory (12%), benign (66.6%), suspicious (03%), malignant (7.2%), and unsatisfactory (1.4%).

Conclusion: FNAC should be used as a routine diagnostic procedure due to its cost effectiveness, thus maximizing the availability of effective health care to patients with breast lesions.

KEYWORDS : Cytology, breast lumps, malignancy.

Introduction-

Fine needle aspiration has become one of the most popular as well as valuable tool for preoperative assessment of breast masses. It is highly accurate, sensitive as well as specific for differentiating the benign from malignant lesion so as to obviate the requirement of extensive surgery.

FNAC helps in studying the different cytomorphological patterns as well as grading the malignant lesions, finding the minimal residual disease, recurrent lesions, solving the purpose of planning therapeutic protocol and eventual follow up.

A confident diagnosis can be made in 95% of the cases through a combination of clinical examination, imaging and FNAC. It has gained popularity due to its fast and easy approach, minimal invasiveness, cost affectivity and little post procedure complications. Much confidence has been placed on this approach for it can obviate standard excisional biopsy when all three components of the triple test are conclusively negative or positive [1].

In India, in year 2012, 144937 new cases of breast cancer were detected and 70218 women died of breast cancer..[2] Locally advanced breast cancer constitutes >50-70% of the patients presenting for treatment

Most countries have now adopted this triple assessment approach (clinical, radiological, and pathological) to breast diagnosis, with FNAC as the first-line pathological investigation in both screening and symptomatic populations.

Materials And Methods-

This is an 18 month retrospective study. Informed consent from each patient was also obtained. The subjects concerned included all the female patients which were referred to the Department of Pathology for FNAC of breast mass. Physical examination of breast mass by palpation was done. FNAC was done by using 21-23 Gauge needle attached to 20cc disposable syringe. Air-dried smears were fixed and stained with May-Grunewald Giemsa technique. Prepared slides were examined by experienced cytopathologists for final diagnosis. The data of the patients under the study period were retrieved, compiled and analyzed by using frequency distribution and percentage proportion.

Results-

The cytological spectrum of breast lumps on Fine Needle Aspiration Cytology, anatomical distribution of lesions and male/ female preponderance are summarized in table 1, 2 and 3.

Table. No.1 Cytological Spectrum of Breast Lumps On FNAC

S. No	Cytological Diagnosis	Number Of Cases	Percentage
1.	Inflammatory	176	12
2.	Benign breast lesions	977	66.6
3.	Galactocele	96	6.5
4.	Atypical ductal hyperplasia	49	3.3
5.	Suspicious of malignancy	44	03
6.	Malignancy	105	7.2
7.	Unsatisfactory	20	1.4

Table No. 2- Anatomical Distribution of Lesions in Both Breasts

S.No	Side	Cases	Percentage
1.	Right	639	43.6
2.	Left	602	41
3.	Bilateral	226	15.4

Table No.3. Male Female Preponderance

S.No	Gender	Cases	Percentage (%)
1.	Female	1291	88
2.	Male	176	12

Discussion-

In India ,breast carcinoma is the most common cause of death among female deaths due to cancer followed by carcinoma Cervix and Ovary. Moreover mortality is high due to patient presenting late stage. The reasons include lack of awareness, shyness on part of patient, social stigma lack of health facilities etc.

India is experiencing an unprecedented rise in the number of breast cancer cases across all the sections of society. There is no way by which we can completely cure or treat carcinoma**, but only and only early detection is definite way for early treatment and longer survival .**It is dire need to create awareness about available diagnostic modalities for early detection.

The present study accounted for less number of benign cases and more number of malignant cases than Mohammed*et al*.,[4] Yeoh and Chan,[5] Park and Ham,[6] Rocha*et al*.[7] and Domínguez*et al*.[8]

In the present study, fibro adenoma (66.6%) followed by inflammatory (12%) were the most common breast lesions on cytology, which is in agreement with Domínguez*et al*.[8] (34.49%, 32.17% and 1.55% respectively).

In the present study, 105 malignant lesions were seen, while in study by Domínguez*et al*.,[8] 147 cases were seen. Infiltrating Ductal Carcinoma (IDC) was most common among the malignant cases detected in the present study. Mucinous carcinoma was second most common tumor in this study.

As overall pattern of type of malignancy with IDC accounting for >85% cases in both studies, generally there is a tendency not to sub classify malignant tumors on FNAC. Zuk*et al*. in 1989[9] In 2000, Tabbara*et al*.[10] recommended in the national comfort institute conference the use of a standardized approach for the reporting of breast FNAs. The classification system proposed at the conference places breast FNAs into one of five categories: Benign, Atypical/ indeterminate, Suspicious/probably malignant, Malignant and Unsatisfactory.

In the present study, maximum numbers of cytologically benign lesions were seen in the age group ranging from 20-50 years. This was similar to the findings by Khemka*et al*.[11] and Rocha*et al*.[7] who had maximum cytological benign cases in the age groups 15-44 years and 14-40 years respectively. MacIntosh*et al*.[12] had majority of benign cases in the age group 27-77 years. Maximum atypical category lesions were seen in the age group 30-50 years in the present study, while other studies do not mention this category in their study. In the present study, cytological suspicious lesions were most common in the age group 25-55 years almost similar findings have been reported by MacIntosh*et al*.[12] and Rocha*et al*.,[7]

The most common anatomical location was right breast (43.6%), followed by left breast (41%) and bilateral breast (15.4%) with a female preponderance (88%).

A significant proportion of population suffers from breast lesions commonly during reproductive age group. All the diagnostic approaches aim at early detection and differentiation of benign from malignant ones.

Conclusion-

Fine-needle aspiration cytology is a rapid and effective and cost effective OPD procedure for the primary categorization of palpable breast lumps into benign, malignant, atypical, suspicious, and unsatisfactory categories. Benign breast lesions are common than malignant lesions, fibro adenoma and fibrocystic disease are more common in benign disease, whereas IDC accounts for the highest number of malignant lesions. Looking at grave situation of rise in cancer deaths, quick Detection, Diagnosis and Treatment is the only way to save lives.

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