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Cytological Spectrum of Breast Lesions -One Year Study in a Tertiary Care Center.

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Abstract-*Fine needle aspiration cytology (FNAC) is an inexpensive and highly accurate means of diagnosing non neoplastic , benign and malignant breast lesions.The present study conducted in , our Cytopathology Department ,Institute of Pathology, Madras Medical college,Rajivgandhigovt.general hospital- Chennai. ,over a period of one year , from January 2016 to December 2016.A total of 979 cases were analysed. we found among 930 cases(95%) were satisfactory for evaluation. Among them 863 (92.7%) were females, and 67 (7.2%) were males . Among females maximum number of patients were in the age group 30-39 years.Upper outer quadrant was the commonest site of location of lump in maximum number of patients in both breasts. Among the lesions of female breast , Inflammatory lesions accounted to 10.9%, Benign lesions 62.37%, Malignant lesions 19.03% . Among Males maximum number of patients were in age group of 50-59 years .On cytological evaluation of male breast 75.99% lesions were benign, 18.5% lesions were malignant, 0.31% lesions were atypical and 0.2% lesions were suspicious for malignancy.*

We conclude from our study that most breast lumps are benign.BreastLump is the commonest mode of presentation of breast lesions with varied aetiology amenable for FNAC.Hence FNAC is useful mandatory and reliable step in patients with breast lesions .

Keywords- *Benign lesions, FNAC breast ,Histopathology, MGG stain*

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I. Introduction

Fine needle aspiration cytology (FNAC) is an inexpensive and highly accurate means of diagnosing non neoplastic , benign and malignant breast lesions.it carries the advantage of providing a rapid and non-morbid diagnosis before definitive treatment.This situation enables the patient and the breast clinician to discuss and plan therapeutic alternatives in a rational atmosphere possibly in the outpatient clinic .It reduces the anxious waitng moments of the patient and place a very vital emotional booster in ruling out malignancies.As with any other technique,experience of the aspirator and diagnostician minimizes false positive andfalse negative rates.The present study has been conducted to evaluate the role of FNAC in the diagnosis of palpable breast lesions. The results of our study will be compared with similar studies conducted in India and abroad. The study analyses the frequency of various benign and malignant lesions of breast along with their age and quadrant-wise distribution .As most of the breast lesions are benign in nature and thus pre-operative cytological diagnosis can reduced unwanted surgeries thus reducing the morbidity.(1)The accuracy of the procedure ranges from just over 50% to 95 % dependingon the experience of the aspirator and the interpreter.(2)

II. Materials And Methods

The present study was conducted on patients presenting with palpable breast lump in the outpatient department of surgery ,referred to DEPARTMENT OF CYTOPATHOLOGY, INSTITUTE OF PATHOLOGY , RAJIVGANDHI GOVERNMENT GENERAL HOSPITAL ,MADRAS MEDICAL COLLEGE ,CHENNAI for fine needle aspiration cytology,over a period of one year , from January 2016 to December 2016.A total of 979 cases were studied with detailed clinical history and clinical examination and imaging. FNAC was carried out using 10 ml plastic disposable syringe and disposable needles of 23-24gauge on all of them.Material obtained was smeared on two glass slides ,one smear was fixed with isopropyl alcohol and stained with Haematoxylin and eosin stain.Another smear was air dried and stained with May grunwaldgiemsa stain .

III. Results-

Out of 979 cases ,930 cases were satisfactory for evaluation ,49 cases (5%) showed only haemorrhage or very scant cellularity and were inadequate for diagnosis. Among 930 cases , 863 (92.7%) were females, 67 (7.2%) were males .

TABLE NO :1 AGE and SEX wise distribution of breast lesions.

AGEGROUP (YEARS)	FEMALES	MALES	TOTAL
11-19	67 (7.8%)	08 (11.94%)	75
20-29	163 (18.9%)	10 (14.92%)	173
30-39	*237 (27.5%)*	11 (16.42%)	*248(26.67%)*
40-49	224 (25.95%)	07 (10.45%)	231 (24.83%)
50-59	95 (11.01%)	*14 (20.9%)*	109
60-69	57 (6.60%)	12 (17.91%)	69
70-79	19 (2.2%)	05 (7.5%)	24
>80	01 (0.12%)	--	01
	863	67	930

TABLE NO :2 CATEGORIZATION OF BREAST LESIONS

DIAGNOSIS	MALES	FEMALES	TOTAL	PERCENTAGE
INFLAMMATORY	06	101	107	10.9
BENIGN	57	580	637	65.06
ATYPICAL	--	03	03	0.31
SUSPICIOUS	--	02	02	0.2
MALIGNANT	04	177	181	18.5
INADEQUATE	07	42	49	5.01
TOTAL	74	905	979	100

TABLE NO 3 DISTRIBUTION OF INFLAMMATORY LESIONS

DIAGNOSIS	MALES	FEMALES	TOTAL
ACUTE MASTITIS	03	69	72
CHRONIC MASTITIS	02	11	13
GRANULOMATOUS MASTITIS	--	20	20
HEMATOMA	01	01	02
TOTAL	06	101	107

TABLE NO 4 : DISTRIBUTION OF BENIGN LESIONS

DIAGNOSIS	MALES	FEMALES	TOTAL
EPIDERMOID CYST	--	09	09
GALACTOCELE	--	02	02
GYNAECOMASTIA	53	--	53
FIBROADENOMA	--	325	325
FIBROCYSTIC DISEASE	01	171	172
BENIGN BREAST DISEASE	--	05	06
LIPOMA	--	13	13
DUCT PAPILLOMA	01	03	04
PHYLLODES	--	02	02
SPINDLE CELL LESION	01	--	01
PROLIFERATIVE BREAST DISEASE	--	50	50
TOTAL	57	580	637

TABLE NO 5 :DISTRIBUTION OF MALIGNANT LESIONS

DIAGNOSIS	MALES	FEMALES	TOTAL
INVASIVE CARCINOMA	03	170	173
MUCINOUS CARCINOMA	--	03	03
APOCRINE CARCINOMA	--	01	01
MEDULLARY CARCINOMA	--	01	01
INTRACYSTIC PAPILLARY CARCINOMA	--	01	01
METASATSIS	01	01	02
TOTAL	04	177	181

Distribution of lesions in female breast

Among females maximum number of patients were in the age group 30-39 years accounting to 237 cases (27.5%) followed by age group 40-49 Years accounting to 224 cases (25.95%) . Youngest patient was 13 years of age. The oldest patient was of 89 years .Upper outer quadrant was the commonest site of location of lump in maximum number of patients in both breasts.Overall Right breast(47.9%)was more

commonly affected than left breast (45.81%) .Bilateral breast involvement was seen in 6.24% cases .But among 177 Malignancy patients left breast (54.8%) was most commonly affected than Right (44.63%)

.Among the lesions of breast , Inflammatory lesions accounted to 10.9%, Benign lesions 62.37%, Malignant lesions 19.03% .Among Inflammatory lesions Acute Mastitis accounted to 68.3%,Granulomatous Mastitis 19.8%. Among benign lesions commonest is Fibroadenoma 325 cases (56.03%) followed by Fibrocystic disease 171 (29.5%) cases .Among malignant lesions invasive carcinoma accounted to 170 cases (96.5%) , mucinous carcinoma comprised 0.32% , Apocrine,medullary and Intracystic Papillary carcinomas accounted to 0.1 % each .We encountered one (o.1%) case of secondary lymphoproliferative disorder involvement in the breast

Distribution of lesions in male breast.

Among Males maximum number of patients were in age group of 50-59 years (20.9%) . youngest patient was 13 years and oldest patient was 76 years.In contrast to females left breast predominance seen in males (41.8%) and right breast (37.3%). Bilateral involvement seen in 21% of the cases.In Males Gynaecomastia is the commonest lesion accounted to 79.10%, invasive carcinoma 4.48% ,Metastasis 1.5%.

On cytological evaluation of male breast 75.99% lesions were benign, 18.5% lesions were malignant, 0.31% lesions were atypical and 0.2% lesions were suspicious for malignancy.

IV. Discussion-

FNAC of breast lumps is an accepted and established method for determining the nature of breast lumps with a high degree of accuracy (3) .Main aim of FNAC is to distinguish benign from malignant lesions and avoiding unnecessary surgical proceduresit also helps in minimization of delay in the diagnosis in benign lesions .

The Total number of patients who attended RGGGH Cytopathology Department for FNAC were 6619 in the year2016 from january to december. Out of them 979 patients(15%) had breast lesions. Out of the 979 cases 95% cases were satisfactory for evaluation. In females most common age group involved in our study was 30-39 years. Similar findings were reported byHaque et al in their study[4]. The second most commonly involved age group In our study is 40-49 Years 224 cases (25.95%) .In our study, right breast was more commonly involved than left breast , similarly observed by (**5**). This was in contrast to the study conducted by karma etal(10) .who found more involvement of the left breast in their studyIn our study benign lesions were most common which accounts for 744/979 cases (75.99%). Similar results were observed by **jyotipriyadarshini et al** (3),and **Kumar etal (6)**.The studies of Adesunkanmi et al,(7) have reported 87.2% benign lesions ,Studies of Chandanwale S. (5)and also Ghosh A (8) have reported 80% benign lesions.Which were slight less when compared to our study.

In our study benign lesions predominate the scenario in our hospital. Benign Breast lesions were 4 times more common than malignant lesions. In Indian rural population the benign breast diseases are 5 to 10times morecommon than breast malignancies. (1). Of the benign lesions fibroadenoma was mostcommon accounting for 56.03 % similar to studies of Priyadarshni J et al (3) who have reported 57% and ,Maliket al who have reported 55% (9) .

All the cases of fibroadenoma and duct papilloma correlated with histopathology.One case of phyllodes tumour , showed malignant change in histopathology.

Among the 3 cases which were diagnosed as prolferative breast disease with atypia in cytology, 2 cases showed atypical ductal hyperplasia and one case showed ductal carcinoma insitu in histopthological examination . 2 cases were diagnosed as suspicious of malignancy in cytology, both showed invasive breast carcinoma on histopathology

Malignant lesions accounts for 19.03% among them invasive carcinoma is the commonest (96.05%) .Similar results were observed by JainSB et al who have reported 20% of malignancy,Pradhan et al(10) who have reported15.5% cases ,and also Ghosh A(8) 20%. cases ..

V. Conclusion-

FNAC is a simple, rapid, costeffective, and well tolerated outpatient procedure yielding high precision and accurate diagnosis of neoplastic and non-neoplastic lesions of the breast . Breast Lump is the commonest mode of presentation of breast lesions with varied aetiology amenable for FNAC.We conclude from our study that most breast lumps are benign.HenceFNAC is useful mandatory and reliable step in these patients.. . It also helps planning definitive surgery for malignant cases, avoiding the need for biopsy .FNAC procedure has the major advantage of relieving patient anxiety by ruling out malignancy in a patient with breast lumps.Thus FNAC proves a stress buster for both clinicians and anxious patients with breast lesions.

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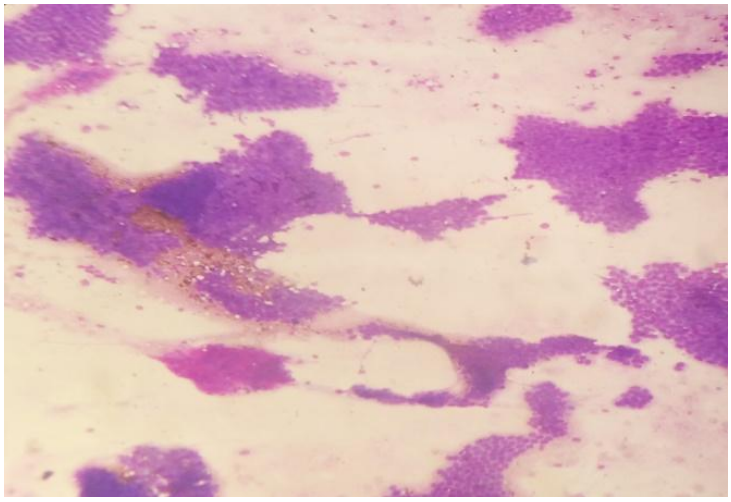

Fig 1- Fibroadenoma-Tightly cohesive benign breast duct epithelial cells (MGG stain x 100x)

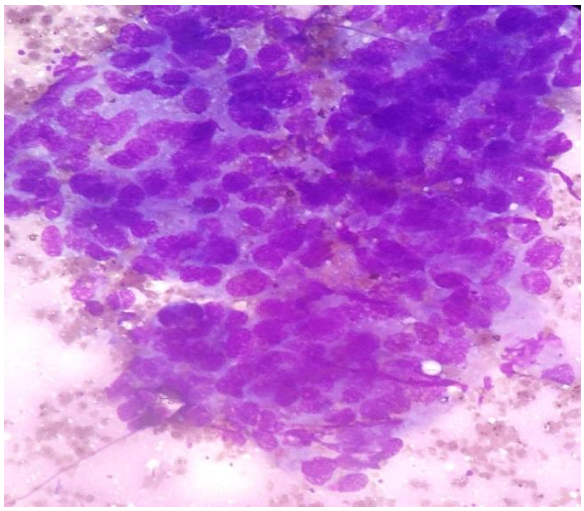

Fig 2: Carcinoma female breast-loosely cohesive malignant duct epithelial cells (MGG stain X 400x)

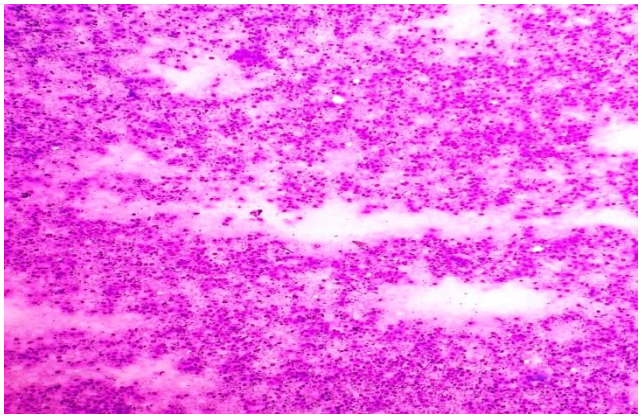

Fig :3-Carcinoma male breast - Dyscohesive malignant duct epithelial cells (MGG stain x 100X)

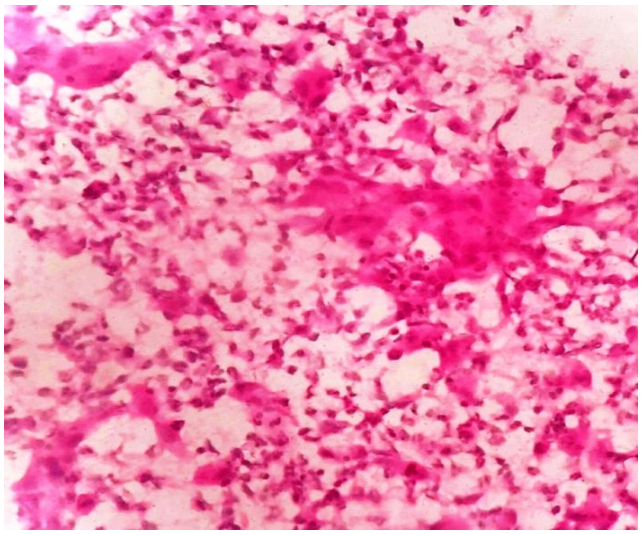

Fig :4 -Granulomatous mastitis -epitheloidhistiocytes surrounded by lymphocytes, plasma cells ,duct epithelial cells (H& E stain 100 x)

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