



FINE NEEDLE ASPIRATION CYTOLOGICAL EVALUATION OF MALE BREAST LESIONS.

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ABSTRACT *Background :* Fine needle aspiration cytology (FNAC) is a well-established and widely used diagnostic method in cases of breast lumps in females. However, studies related to its application in male breast are rare. The present study was undertaken to evaluate role of FNAC in the diagnosis of male breast lesions.

Material and Methods : This is a retrospective and prospective study done over a period of 3 years that is Jan 2015 to December 2017. Cases were retrieved from the files of department of Pathology and Medical Records Department (MRD) of the institute. FNAC diagnosis was categorized as benign lesions, malignant, suspicious for malignancy and inflammatory /abscess. Cyto-histological correlation was attempted in cases wherever possible. Statistical analysis was done using standard methods for sensitivity, specificity and diagnostic accuracy.

Results: A total of 28 cases of lump in male breast had undergone FNAC. Histopathological examination was available in 25 cases. The distribution of lesions was Benign lesions(Gynecomastia) 24 (85.72%), Malignant lesions 3 (10.72%) and Inflammatory 1 (3.5%). In the category of malignant lesions, a rare case of mucinous adeno-carcinoma of male breast was encountered. There was no false positive or false negative finding. FNAC had sensitivity and specificity and diagnostic accuracy of 100% for male breast lesions.

Conclusion : FNAC is reliable and accurate diagnostic method in male breast lesions. Findings of this study indicate that it can be used in clinical practice in evaluation of male breast lesions.

KEYWORDS : Male breast lesions, gynecomastia, breast carcinoma.

Introduction-

Fine needle aspiration cytology (FNAC) is a rapid, cost effective, well established and accurate procedure in the diagnostic evaluation of breast masses. In literature, most studies have been done in female breast lesions, however there is paucity of reports in male breast lesions^(1,2,3,4).

Gynecomastia is the most frequently encountered cause of benign masses in male breast. Carcinoma of male breast is rarely documented^(5,6).

Although histopathological examination is the gold-standard to distinguish gynecomastia from other lesions, FNAC diagnosis is used in the pre-operative work-up of breast masses in many institutions.

The present study was undertaken to evaluate efficacy, sensitivity and specificity of FNAC in male breast lumps.

Material and Methods-

This study included all the male patients who underwent FNAC of breast lump during the period of 3 yrs, i.e January 2015 to December 2017. The data regarding clinical details was retrieved from the files of department of Pathology and medical record department of the institute.

The aspirates were obtained using 23/25 gauge needle and 5 ml. syringe attached to cytology gun. Air dried smears were prepared and stained with cytochrome-modified-Leishman's stain (Biolab make). In addition, smears were wet fixed in 95% ethyl alcohol and subsequently stained with Papanicolaou's stain.

FNAC diagnosis was categorized as - Benign lesions (gynecomastia) malignant lesions, suspicious for malignancy and inflammatory lesions. Cytohistological correlation was done whenever possible. Statistical analysis was done using standard methods for sensitivity, specificity and diagnostic accuracy.

Results-

Over the period of three years, 28 patients with palpable breast lumps underwent FNAC. Of these, 26 presented with unilateral breast lumps

and two had bilateral breast lumps. In the group of unilateral breast lumps, 18 patients were with left breast lump, while the lesions on right side were present in 8 cases. Age ranged from 20 to 75 years with median age was 51.5.

The aspirates were categorized into 4 groups with break-up as follows- Benign-gynecomastia 24 (85.72%), malignant lesions 3 (10.72%) and inflammatory 1(3.5%). There was no case in the group of suspicious for malignancy. In the malignant category there were two cases of infiltrating duct carcinoma, one of which was recurrent tumour operated 2 years back. In addition, a rare case of mucinous adeno-carcinoma was encountered in a 65 years old male.

Cytomorphological features of male breast lesions in our study-

Most common cytomorphological entity in this study was gynecomastia. The smears revealed variable cellularity ranging from mild, moderate cellular (predominant pattern) to richly hypercellular smears. Smears revealed large, tightly cohesive ductal epithelial cell fragments, at times appearing as flat monolayered sheets. Also seen were many single, bare, bipolar/oval nuclei in background i.e bimodal pattern. [Fig-1] Fragments of fibrous stroma were commonly present. In 4 cases, adipose tissue fragments were distinctly observed.

Out of 24 cases of gynaecomastia, histopathological confirmation was done in 22 cases (91.67%).

A 30 year old male presented with lump in right breast with mild tenderness. FNAC smear revealed many polymorphs, viable as well as degenerating admixed with few ductal epithelial cells. This was reported as inflammatory lesion and was managed with antibiotics.

This study included 2 cases of infiltrating duct carcinoma. The aspirates revealed loosely cohesive clumps and singly scattered cells showing nuclear enlargement with anisonucleosis, irregular nuclear borders and prominent nucleoli. In one case uniuucleate as well as multinucleate tumour giant cells were noted. [Fig-2]. This was a case of recurrent adeno-carcinoma of breast operated two years back.

Histopathologically both the cases were diagnosed as infiltrating duct adeno- carcinoma (NOS). We had one case of mucinous

adenocarcinoma with abundant mucinous stroma in the background. Tumour cells were arranged in small and large clumps and also in linear fashion. The cells had round to oval nuclei with prominent one to four nucleoli. [Fig-3] On histopathological examination, clumps of tumour cells with hyperchromatic, pleomorphic nuclei were seen embedded in pools of mucin.

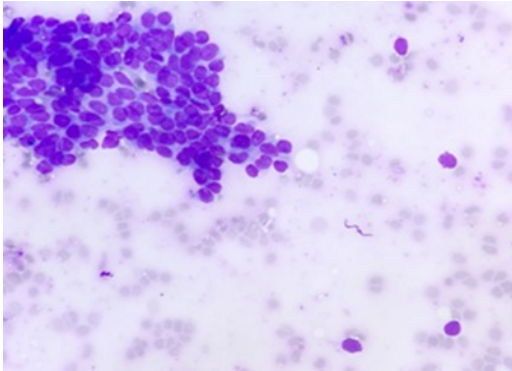


FIG 1: FNAC Gynecomastia (Leishman Stain x 100)

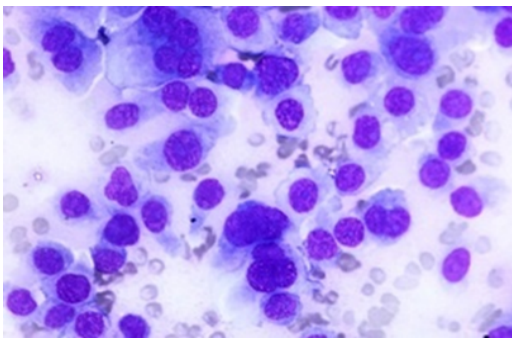


FIG :2 FNAC Recurrent Infiltrating Duct Adenocarcinoma (Leishman Stain x 400)

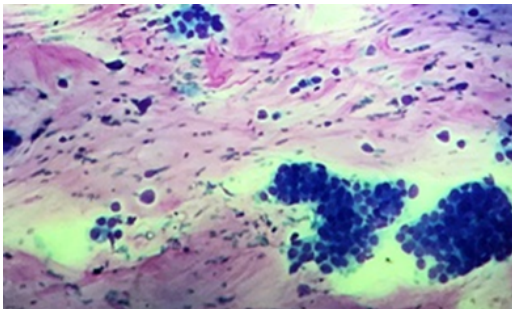


FIG : FNAC Mucinous Adenocarcinoma (Leishman stain x 100)

Out of 28 cases the histopathological confirmation was done in 25 cases. The break-up of these is shown in table [1].

In two cases with bilateral gynecomastia the histopathological confirmation was not done. In one case of inflammatory lesion i.e abscess it was not available as the lesion was cured with appropriate treatment.

Table 1- Cytologic and Histological Categories of male breast lesions(25 out of 28 cases)

Category	Cytological Diagnosis	No.of cases (Cytology)	Histopathological Diagnosis	No of cases.
Benign	Gynaecomastia	24	Gynaecomastia	22
Malignant	Ductal Adenocarcinoma	2	Infiltrating ductal Carcinoma	2
	Mucinous Adenocarcinoma	1	Mucinous Adenocarcinoma	1
Inflammatory	Suggestive of abscess	1	Not Done	0

Discussion-

In this study of male breast lesions, wide age group ranging from 20

years to 75 years was observed. This is in agreement with the results of other workers²⁴. In majority (93.9%) of cases, male breast lesions presented with unilateral mass, while it was bilateral in two cases (7:1%). Bilateral involvement has been documented in other reports^(1,7). Gynecomastia was encountered more on the left side (18) than right side (6), this is similar to observations in other studies^(2,8).

FNAC features of gynecomastia included moderate to richly cellular cohesive sheets or clumps of bland cells, bipolar bare nuclei and stromal fragments were encountered in all our cases posing no diagnostic difficulty- however, it may be noted that some authors have experienced diagnostic problems when many cells show cellular atypia⁽²⁾.

Cytomorphological features of adeno-carcinoma of male breast included loosely cohesive groups, clumps and clusters of ductal cells with moderate and/or severe degree of nuclear atypia. The nuclei revealed irregular nuclear borders and prominent nucleoli and there was striking absence of bare nuclei. In our study, out of 2 cases one case was that of recurrent infiltrating duct carcinoma. This series includes an extremely rare case of pure mucinous carcinoma of breast⁽⁹⁾. It may be noted that histologically mucinous carcinoma may be classified as pure and mixed mucinous. Microscopically pure carcinomas reveal tumour cells amidst extracellular mucin pools while in mixed mucinous carcinomas, invasive areas are not surrounded by mucin. Prognosis of pure mucinous carcinoma is better than mixed one⁽¹⁰⁾. Our case belonged to the category of pure mucinous carcinoma.

Conclusion-

FNAC is reliable and accurate diagnostic method in male breast lesions. Findings of this study indicate that it can be used in clinical practice for evaluation of male breast mass lesions.

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