ORIGINAL RESEARCH PAPER

Pathology

KEY WORDS: FNAC, Gynaecomastia, Males.

EVALUATION OF FINE NEEDLE ASPIRATION CYTOLOGY OF MALE BREAST LESIONS IN MALES - A 6 YEARS STUDY

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ABSTRACT

BACKGROUND: FNAC is widely used method in the management of breast lesions in women as well as men. Male breast lesions encompass an important domain to be brought into focus to create awareness in society. Gynaecomastia has topped the list of lesions of male breast that may undergo malignant change.

METHOD: Data of all patients who underwent FNAC of breast lumps in our institution were reviewed from medical records. In a period of 6 years, 82 male breast lesions were evaluated, categorized as: C1 (Inadequate/ Insufficient); C2 (Benign); C3 (Atypical/ Indeterminate); C4 (Suspicious/ probably malignant); C5 (Malignant). Further correlated by histological correlation.

RESULTS: Age group of patient ranged from 14 years to 75 years with a mean age of 40 years. Among 82 cases diagnostic aspirates obtained in 78 cases and unsatisfactory obtained in 4 cases. 74 cases were benign including Gynaecomastia (65), Inflammatory (2), Epidermoid cyst (3), Lipoma (4). Mild atypia and rich cellularity were observed in some cases of Gynaecomastia. 74 patients had unilateral breast lesion and 4 had bilateral breast nodule. Cytologicaly 51 cases of gynaecomastia were showing features of predominantly glandular pattern, 9 cases predominantly stromal, 03 were of mild atypia and 02 no. of cases showing apocrine change. 04 cases were diagnosed to be malignant cytologicaly.

CONCLUSION: FNAC of male breast is a cost effective, reliable and sensitive method for early screening and diagnosis of lesions, So that it can avoid unnecessary complications or surgeries.

INTRODUCTION:

Fine needle aspiration cytology is a widely used method in the management of breast lesions in women. The technique is simple, inexpensive and good results are attainable .However it is used much less often in men, mainly because breast masses in males are less frequent. The incidence of carcinoma in breast lesions are encountered by clinicians, ranging in a spectrum of inflammation, cysts, lipoma, benign gynaecomastia, to a much rarer carcinoma[1] (1% of all breast carcinoma)[2].

The majority of the breast masses in man are due to Gynaecomastia, a lesion that may undergo malignant change specially with increasing age[1, 3]. Further more male breast malignancies suffer from under diagnosis leading to delayed treatment. So there is need of more research into this topic. To our knowledge only a limited number of articles evaluating the use of FNAC in masses occurring in man have been published to date.

In current study we have analyzed the cytological spectrum of male breast lesions coming to outpatient department of medical college and hospital, VIMSAR, Burla, Odisha, India with a histopathological correlation wherever possible.

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MATERIAL AND METHODS:

It is a retrospective analytical study over a period of 6years from June 2012 to June 2018. All the male breast lesions unilateral as well as bilateral were subjected to FNAC using 22 gauze needle and 10ml syringe fitted to an aspirator (syringe holder). No anaesthesia was needed in any of the cases. Two passes were the routine habit to avail optimum cellularity. Repeat aspiration was performed in some patients.

The air dried smears were stained using Kline TS Diff Quick stain. In addition wt fixed smears in 95% alcohol were subsequently stained by papanicolau stain.

The smears were classified into five major diagnostic categories

1. Unclassified
2. Benign
3. Benign with mild atypia
4. Suspicious of malignancy
5. Malignant

Histopathological diagnosis was obtained and correlated with the cytological diagnosis.

RESULTS:

During a 6years period 82 patients with palpable lump in male breast underwent FNAC at Department of Pathology, VIMSAR, Burla. Out of the 82 patients 72 patients had unilateral breast lesion and 4 had bilateral breast nodules. Out of the unilateral breast lump 40 patients had left sided breast lump and 38 had lump in right breast.

The age of the patients ranged from 14years to 75 years with a mean age of 40years. Unsatisfactory aspirates obtained in 4cases. 2 of them were unilateral lesion with a size <1 cm in diameter. Diagnostic aspirates obtained in 78 cases.

On cytomorphological analysis:-

Among the benign lesion we encountered –

Lipoma- 4
Epidermoid cyst- 3
Inflammatory- 2
Gynaecomastia- 65

In gynaecomastia cases 62 were with no cellular atypia and 3 were of rich cellularity with mild atypia. The cytomorphological diagnosis was suspicious of malignancy and malignant cytosmear in 2 cases each.

Table (i) Age distribution in nonneoplastic breast lesion

Type of lesion	<20	21-40	41-60	>60
Gynaecomastia	07	38	17	03
Lipoma	-	02	01	01
Epidermoid cyst	01	02	-	-
Inflammatory	-	-	01	01
Total	08	42	19	05

Table (ii) Clinical Presentation of gynaecomastia

Laterality	No of cases	Percentage (%)
Bilateral	4	6.1
Unilateral (left)	35	53.8
Unilateral(right)	26	40

Table (iii) Cytological spectrum of benign breast lesion (n=74)

Types of Lesions	No of Cases	Percentage (%)
Gynaecomastia	65	83.3

Lipoma	04	5.1
Epidermoid cyst	03	3.5
Inflammatory	02	2.5
Total	74	

Table (iv) Cytological spectrum of Gynaecomastia (n=65)

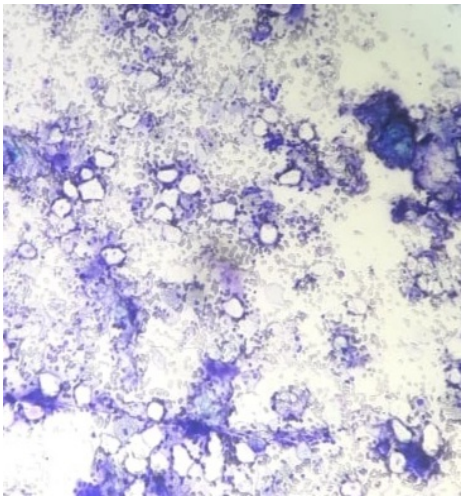
Cytological features	No of cases	Percentage (%)
Predominantly Glandular	51	78.4
Predominantly Stromal	O9	13.0
Mild atypia	03	3.5
Apocrine change	02	2.5

Table (v) Malignant lesions (n=4)

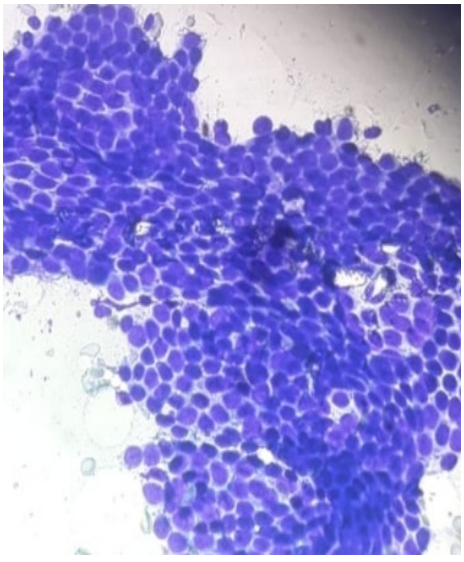
Types	No of Cases	Percentage (%)
Carcinoma	02	2.4
Suspicious of Malignancy	02	2.4
total	04	4.8

Table (VI) Histological spectrum of lesions in Male (n=24)

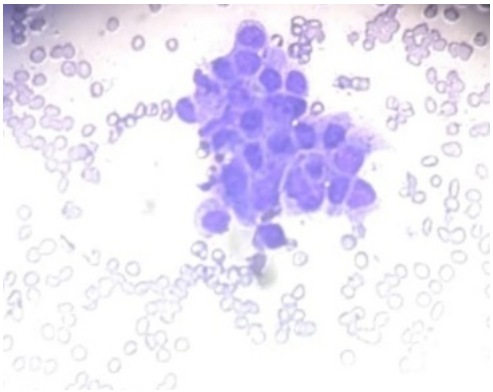
Histological Diagnosis	No of cases	Percentage (%)
Gynaecomastia	15	19.2
Ductal carcinoma	02	2.56
Mucinous adenocarcinoma	01	1.2
Pleomorphic sarcoma	01	1.2
Nonspecific Inflammation	01	1.2
lipoma	03	3.8
Epidermoid cyst	01	1.2
total	24	30.7



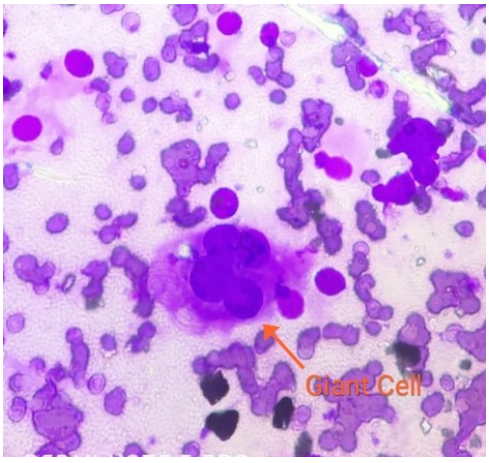
Epidermoid cyst (fig 1)



GYNAECOMASTIA (fig 2)



Mild atypia(fig 3)



Undifferentaiated pleomorphic sarcoma(fig 4)

DISCUSSION:

Male breast lesion encompasses an important domain to be focused into, because the incidence of male breast carcinoma is rising day by day. Gynaecomastia is a benign enlargement of male breast caused by hormonal imbalance of estrogen excess[4]. Pathological Gynaecomastia occurs due to systemic diseases like hepatic disease, renal disease, thyrotoxicosis etc, various drugs like anabolic steroids, androgen, digoxin also lends to male breast enlargement[5]. It occurs in a wide age range 15 to 90 years of age. Nowadays an increasing use of androgenic anabolic steroids among young men especially body builders has increased the incidence of Gynaecomastia. The incidence of carcinoma increases with advancing age, climbing steadily until a plateau is reached around 80 years of age. The incidence has increased up to 26% from 1% during the last 25 years.

Age ranges from 14 to 75years with a median age of 40 years which is close to pragnashree et al 45 years. while the median age of cases with Gynaecomastia was (14 to 60) 37yrs which is less than pragnashree et al 45 yrs.median age of patient with malignancy was (65 to 75) 68 yrs which is more than pragnashree et al 61yrs. Gynaecomastia was unilateral in 61 out of 65 (94.6%) of cases which is close to finding of K.pailoor[5] et al 90%.It was more frequent in left side than right side. 35 cases left sided and 26 cases right sided similar to studies by martin-Bates et al and K.pailoor et al.

In our study Gynaecomastia has come out to be the commonest benign lesion 65(83%) of cases similar to finding of pragnashree et al 78.9% and close to Ganguly et al[6] 76.3%,Gill et al 79.3%. Among the Gynaecomastia cases predominant glandular cytosmears were observed in51 (78.4) cases which is close to sanjay et al[7] 83.33%, predominantly stromal component was seen in 9 cases which is less as compaired to sanjay et al 62.82% cases. Mild cellular atypia was found in 4.6% cases which is sanjay et al (3.2%).

Apocrine change was observed in 2 (3.0%) cases which is little more than sanjay et al (1%).

Other benign lesions found in our series were lipoma in 4 (5.1%) cases epidermoid cyst in 3 (3.5%) cases. which correlates with results of sanjay et al lipoma in 2.7% and Ganguly et al keratinous cystin 3.1% of the benign lesions. Two of our cases (2.5%) show inflammatory cytosmears which correlates with finding of inflammatory smear found by Ganguly et al (3.1%).

We diagnosed two of the cytosmears as malignant and two other smears as suspicious malignancy,who were of more than 60 yrs of age,which is closer to the age incidence of duct carcinoma at 55 years of age in work of K. pailoor et al.

Histological correlation were possible in 24(24.3%) of the cases in our series which is similar to siddique et al[8] and close to rajuketal et al 2002 of Gynaecomastia diagnosed cytologicaly were confirmed by subsequent biopsy.

Lipoma and one case of three cases of epidermoid cyst diagnosed cytologicaly were confirmed on histology. One elderly diabetic male showing with inflammatory cyto smears with plenty of neutrophils ,few macrophage and necrosis came out to be nonspecific inflammatory lesion on histology ,which correlates with diabetic nephropathy finding of Hunfeld et al[9] 1997.

The 2 cases of cytologicaly diagnosed duct carcinomas were concordant with histodiagnosis.The other two cytosmears suspicious of malignancy came out to be pleomorphic sarcoma and mucinous adenocarcinoma on subsequent biopsy.

In our cases 4.8% of cases were infiltrating duct carcinoma on and which is close Ganguly et al(5.3%) and pragnashree et al (4.6%) but less than wauters et al[10](10.2%) and westend et al[11] (9.8%),Das DK et al[12].

Result of Present study as compared to Others:
Table vii

Study	No of breast lesions	Year	inadequacy	benign	malignancy	No of cases with histology	Sensitivity	specificity
K.pailoor et al	40	2013	0	39	01(4.16%)	8(20%)	100%	100%
Wauters et al	146	2009	45(30.69%)	35	15(10.2%)	85(58%)	100%	90%
Siddiqui etl	614	2002	94(15.4%)	427	32	170(28%)	95.3%	100%
macIntosh et al	138	2008	46(33.3%)	12	11(7.9%)	23(17%)	95.5%	100%
Ganguly et al	38	2015	01(2.6%)	33	02(5.3%)	19(50%)	100%	100%
Pragnashree et al	128	2017	15(11.81%)	101	01(4.16%)	08(20%)	100%	100%
Pratik et al13	53	2016	04(7.5%)	42	04(7.54%)	05(9.4%)	75%	100%
Present study	82	2018	4(4.8%)	74	4(4.8%)	24(29.3%)	100%	100%

CONCLUSION:

FNAC is the rapid, accurate and specific first line diagnostic method for breast lesions. As male breast lesions are on increasing trends so awareness among them is necessary to avoid the worse complications by early intervention. To conclude as ours is tertiary care centre and serving a socioeconomically backward population, FNAC for its cost effectiveness is being strongly recommended in the clinical evaluation of male breast lumps.

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