Original article:

Clinicopathological spectrum of male breast lesions on fnac: review of 200 cases in a tertiary care hospital

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Abstract

Objective: This study was conducted to observe the clinicopathological spectra of male breast lesions on FNAC in our area.

Method: All cases of male breast lesions diagnosed on FNAC during a period of four years.

Results: Out of 200 cases, 165 were benign (82.5%) including gynaecomastia (158), lipomas (5) fibroadenoma (1), inflammatory (1), and granulomatous (1). Changes like mild atypia and apocrine change were also observed in cases of gynaecomastia. Age group of patients ranged from 14-90 years with most presenting between 2nd-3rd decade. Malignancy was diagnosed in 12 cases (6.66%) with a mean age of presentation of 61 years. Two cases were diagnosed to have atypia of undetermined significance. Twenty aspirates were unsatisfactory. Predominantly right breast involvement was seen. Most benign lesions presented with diffuse irregular mass beneath nipple. Malignant cases had variable presentations including hard lump, fungating mass, and nipple discharge with retraction. Significant history of alcohol and anabolic steroid intake was documented. Histological correlation data was available in 40 cases of benign and 7 cases of malignant lesions.

Conclusion: We have concluded that the number of cases of male breast lesions presenting to our hospital annually are much more as compared to other institutes. Further, the percentage of malignant lesions is increasing with time

Keywords- male, breast, lesions, FNAC

Introduction

Male breast lesions encompass an important domain to be brought into focus to create awareness in the society. Most of the male breast lesions are benign. Gynaecomastia is the commonest benign lesion and most cases present between 2nd-3rd decade. Bilateral benign lesions account for about 25% cases. Carcinoma of male breast is a rare entity; however its incidence is increasing with time. Breast carcinoma are thought to be confined to females only, so most of the males do delay in seeking medical attention and have worse prognosis at the time of presentation. Furthermore, male breast malignancies suffer from underdiagnosis leading to delayed treatment. So there is need of more research into this topic.

Materials and Methods

All the 200 cases of male breast lesions subjected to FNAC in the department of pathology during a period of four years (2012-2016) were reviewed to observe the clinicopathological spectra of male breast lesions on fine needle aspiration cytology. Results were analysed to calculate the percentage of benign and malignant lesions. Other parameters assessed were age at the time of presentation, site of breast involved, clinical presentation, family, drug or any other relevant history along with the cytological spectra of the lesions.
Results

Two hundred cases of male breast lesions presented during a period of four years. Out of them, 180 aspirates were satisfactory and 20 were inadequate for opinion. Out of satisfactory smears, 166 (92.2%) were benign, 12 (6.66%) were malignant and 2 (1.11%) were suspicious for malignancy. Age of patient varied from 14-90 years with mean age of 52 years. Benign breast lesions were most common in 2nd - 3rd decade. Most benign lesions presented with diffuse irregular mass beneath nipple. Significant history of alcohol and anabolic steroid intake was documented. Predominantly right side breast involvement was seen. Bilaterality was observed in 22% cases [Table1,2] [FIG1,2]

<p>| TABLE 1: Clinical spectrum of benign breast lesions |
|----------------------------------|--------|-------|</p>
<table>
<thead>
<tr>
<th>TYPE OF LESION</th>
<th>NO. OF CASES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYNAECOMASTIA</td>
<td>159</td>
<td>88.3%</td>
</tr>
<tr>
<td>LIPOMA</td>
<td>5</td>
<td>2.7%</td>
</tr>
<tr>
<td>GRANULOMATOUS</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>INFLAMMATORY</td>
<td>1</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Malignancy was diagnosed in 12 cases (6.66%) with a mean age of presentation of 61 years. Two cases were suspicious for malignancy. Variable presentations included hard lump, fungating mass and nipple discharge with retraction. [FIG.3,4] All cases of carcinoma had unilateral predominantly right sided involvement. One case presented with metastasis to axillary lymph nodes. Histopathological correlation was found in 40 cases of gynaecomastia and 7 cases of malignancy. [TABLE.3]

<p>| TABLE 2 Cytological spectrum of Gynaecomastia (n=156) |
|----------------------------------|--------|-------|</p>
<table>
<thead>
<tr>
<th>CYTOLOGICAL FEATURES</th>
<th>NO. OF CASES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREDOMINANT GLANDULAR COMPONENT</td>
<td>130</td>
<td>83.33%</td>
</tr>
<tr>
<td>PREDOMINANT STROMAL COMPONENT</td>
<td>98</td>
<td>62.82%</td>
</tr>
<tr>
<td>ATYPIA</td>
<td>5</td>
<td>3.2%</td>
</tr>
<tr>
<td>APOCRINE CHANGE</td>
<td>2</td>
<td>1%</td>
</tr>
</tbody>
</table>

Relevant history obtained in good number of cases revealed increased consumption of alcohol, steroid intake for body building among youth, prior intake of antitubercular drugs, underlying liver diseases and radiation exposure for underlying malignancy like prostatic cancer. Family history of breast cancer in female sibling was obtained in two patients of carcinoma.
Discussion
Male breast lesions encompass an important domain to be focused into because the incidence of male breast cancer is rising. Structure of adult male breast resembles immature female breast due to paucity of estrogen stimulation at puberty. It is mainly composed of fatty tissue along with a little glandular tissue in contrast to female breast which is primarily glandular. Gynaecomastia is a benign enlargement of male breast caused by hormonal imbalance due to estrogen excess. It can be physiological presenting in neonatal period, puberty or in elderly. Pathological gynaecomastia occurs due to systemic diseases like hepatic diseases, renal diseases, thyrotoxicosis, starvation etc. Various drugs like anabolic steroids, androgen, digoxin, ketoconazole, cyproterone also lead to male breast enlargement. It occurs in wide age range of 15 – 90 years. In our study, gynaecomastia has come out as commonest benign lesion with predominantly right sided breast involvement. Bilaterality has been observed in about 22% of the lesions. One important aspect is that people in this area are involved in heavy physical exercises and intake of steroids for body building purposes has been documented in a number of young people. Recently, an increasing use of androgenic-anabolic steroids among young men especially body-builders has increased the incidence of gynaecomastia.

Cancer of the male breast accounts for about 1% of all malignancies in men and 0.7% of all breast cancers. The incidence of male breast cancer increases with advancing age, climbing steadily until a plateau is reached around age 80. Breast cancer has been reported in male patients ranging in age from 5–93 years. The etiology of male breast cancer is unclear however hormonal levels tend to play a role in the development of this disease. Several causes which are thought to be associated with breast malignancy are genetic factors (BRCA mutations), affected first degree relatives, environmental causes like radiation exposure and polycyclic aromatic hydrocarbons. Hyperestrogenism due to exogenous intake, obesity or chronic hepatic diseases and hyperprolactinaemia also pose increased risk. Testicular abnormalities such as undescended testes, congenital inguinal hernia, orchiectomy, orchitis, and infertility have been consistently associated with elevations in male breast cancer risk. Klinefelter’s syndrome, in which patients carry XXY chromosomes, may be present in 3%–7% of men with breast cancer, giving males with Klinefelter’s syndrome a 50-fold greater risk over the general male population. Men with a family history of breast cancer in a female relative have 2.5 times the odds of developing breast cancer. Gynaecomastia has been reported in association with breast cancer in men. The most common presenting symptoms in male breast cancer patients are a painless subareolar lump, nipple retraction, and bleeding from the nipple. There is a slight preponderance of left-sided versus right-sided disease, however in our study predominantly right sided breast involvement was seen. Male breast cancers have a poor prognosis as compared to females owing to early lymphatic involvement. Most of the cancers are positive for estrogen and progesterone receptors. Mammography can be helpful in differentiating gynaecomastia from malignant breast disease. FNAC plays an important role as preliminary investigation in male breast lesions especially in correlation with clinical and radiological findings. On cytology, at times the confusion may arise between cellular gynaecomastia and carcinoma but presence of cohesive sheets or groups of bland cells, bipolar naked nuclei, differentiates gynaecomastia from carcinoma of the male breast. Apocrine metaplasia and mild epithelial atypia is not an uncommon finding in gynaecomastia and should not be confused with malignancy. In most cases of gynaecomastia excision is not required however surgical excision is done in many cases due to cosmetic reasons. Approximately 90% of male breast cancers express the estrogen receptor and 81% express the...
progesterone receptor. A recent series of 75 patients found that only 5% of male breast cancers overexpressed her2-neu. Treatment of male breast cancer includes modified radical mastectomy along with radiation and chemotherapy wherever needful. Due to high expression of hormonal receptors, Tamoxifen remains the gold standard of adjuvant hormonal therapies.

Conclusion

FNAC in correlation with clinical and radiological findings plays an important role as preliminary investigation in male breast lesions. We here conclude that the number of cases of male breast lesions presenting to our hospital annually are much higher as compared to other studies. Increased consumption of alcohol and anabolic steroids could be a cause attributable to gynaecomastia. The percentage of malignant male breast lesions is increasing with time. Due to lack of awareness, most males do delay in seeking medical attention and have worse prognosis at the time of presentation.

Fig.1: 20x - Leishman stained smear showing benign sheet of duct epithelial cells; gynaecomastia

Fig.2: 40X- Leishman stained smear revealing of duct epithelial cells with apocrine change

Fig.3: showing ulcerated lesion of male breast
Fig.4: 20x; Leishman stained smear revealing sheets of malignant cells

References