Original Article

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Increasing Incidence of Malignancy Among Male Breast Lesions in The Urban Population of India

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ABSTRACT

Background: Among the male breast lesion gynaecomastia is the most common lesion present. Breast malignancy accounts for less than 1% of all male malignancy. Aim of this study was to see the increasing incidence of breast carcinoma among males in India

Methods: A retrospective studywas undertaken in KPC Medical College, catering to an urban population, over a period of three and a half years. 32 male breast lesionswhich presented in the surgery department were analysed.

Result: 75% of the cases were gynaecomastia which is the most common male breast lesion,other benign breast lesions like epidermal cyst, breast abscess and fibroadenomacomprised 9.3% of the total lesions present.Breast carcinoma, In situ lesion and sarcoma of the breast accounted for 15.5% of the cases.

Conclusion: Worldwide studies have shown male breast carcinoma to be less than 1%. Our study showed a prevalence of 15.5% breast malignancy, showing a phenomenal increase in breast carcinoma among male patient.

Keywords: *Breast Carcinoma, Gynaecomastia, Hormone, Fibroadenoma*

Introduction

The prevalence of male breast lesions in the population is not studied as well as female breast pathologies. However, the urban population is becoming more conscious and male patients with swelling or lump in the breast are presenting themselves in the OPD. In male breast, gynaecomastia is the most common lesion seen. It is mainly due to the hormonal changes seen during puberty. Non neoplastic lesions like sebaceous cyst and breast abscess accounts for the second most common breast pathology in males. Among neoplastic lesions, male breast carcinoma was believed to be rare, accounting for 1% of all malignancies in male [1]. Fibroadenoma in male breast is very rare due to the absence of lobules in the male breast [2]. Mostly fibroadenoma is due to the patient's hormonal treatment [3]. The aim of this study was to highlight the increasing incidence of breast carcinoma amongst all the lesions of the male breast in India.

Materials and Methods

This is a retrospective study of males presenting with breast lump who attended both the outpatient as well as the inpatient department of surgery in KPC medical college, situated in the heart of the metropolitan city of Kolkata and catering to an urban population. The study was from May 2014 to December2017, a period of 3 and half years. As this was a retrospective study, no patient consent was needed. No ethical issues were also present in this study. There were a total of 37 males who came with the complaint of swelling of breast. Fine needle aspiration cytology was done from the swelling. This was followed by trucut biopsy, lumpectomy and histopathological co-relation. Hematoxylin and Eosin stained slides were reviewed by more than 2 pathologists in doubtful cases. Immunohistochemistry was applied where required for diagnosis. 5 male patients presented with breast swelling and FNAC showed benign breast lesions but they did not turn up for histopathological examination and were excluded from our study. All the carcinoma and sarcoma cases were referred to higher oncology centres for further treatment and follow up.

Result

Patients were between the ages of 17years to 72 years with a mean of 28.2 years. The results were classified into benign and malignant.

Benign breast lesions- 24 patients were of gynaecomastia with ductal epithelial hyperplasia with flat or papillary pattern, increased periductal stromal cellularity and oedema. Some cases showed fibrous phase with less epithelial proliferation and more collagenous stroma. Patient with breast abscess was a 32year old male showing breast tissue with a cavity filled with dense neutrophilic infiltrate.Patient with benign epidermal cyst was a 50 year

old man showing cornified epithelium and lamellated keratin in histopathological microscopic section. Patient of fibroadenoma was 24 years old showing typical branching sheets of ductal cells, with fibromyxoid stroma and bare oval nuclei in FNAC. Histopathological finding showed intracanalicular type of fibroadenoma with slit like glands and myxoid stroma.

Malignant lesion- All the patients whose report showed suspicious of malignancy in fine needle aspiration cytology were confirmed by trucut biopsy later by radical mastectomy. 3 patients were positive for Infiltrating Ductal Carcinoma (No Specific Type), aged 54 years, 62 years and 64 years respectively. The reporting was done based on CAP protocol. Sheets of pleomorphic tumour cells with no myoepithelial cells were seen in H/E stained slides. Tubular formation was preserved in some parts. Pathological grading (Nottingham Grading system) was grade 2 in the first two cases and grade 3 in the third case. There was no lymph node isolated in the first case. In the second case, 4 lymph nodes were isolated which were reactive. In the third case, out of 8 lymph node identified, 3 were positive for malignancy.

One patient having ductal carcinoma in situ was a 45 years old male, showing cribiform pattern without necrosis in histopathological sections. Nuclear: cytoplasmic ratio was increased with few mitotic figures.

One patient was of dermatofibrosarcoma protuberans of breast, and was aged 72 years, showing spindled fibroblastic cells with interdigitating fasciculated and storiform growth pattern and thin walled blood vessels. High mitotic activity around 9-10/hpf was seen. Immunohistochemistry showed vimentin, CD 34 and CD 99 positivity and was negative for CK 7, S-100, Desmin, SMA, HMB-45 and EMA.

Table 1: Histopathological evaluation of total 32 cases of male breast lump with their ages.

	Benign Breast Lesions				Malignant lesion		
Lesion	**Gynaecomastia**	**Breast Abscess**	**Benign EpidermalCyst**	**Fibroadenoma**	**Ductal carcinoma in situ**	**Invasive Ductal Carcinoma**	**Dermatofibro-sarcoma protuberance**
No. of Cases	24(75%)	1(3.1%)	1(3.1%)	1(3.1%)	1(3.1%)	3(9.3%)	1(3.1%)
Age	17-35 years	32years	50years	24years	45yers	54, 64, 62 years	72years

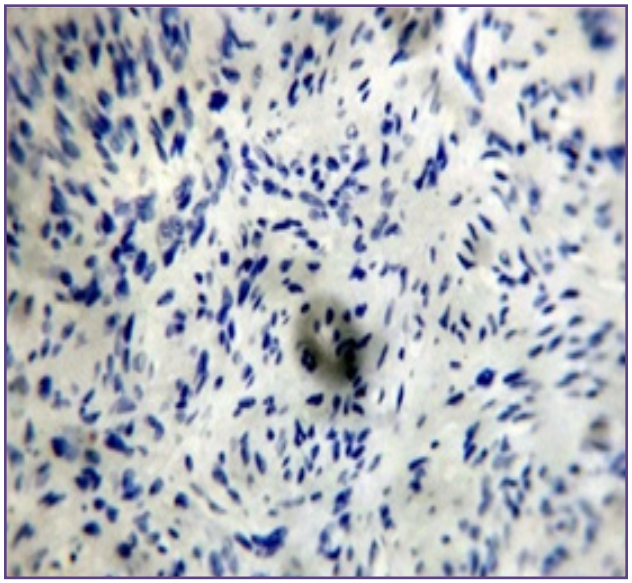

Fig. 1: Dermatofibrosarcoma protuberance. 400X magnification, P63 positive.

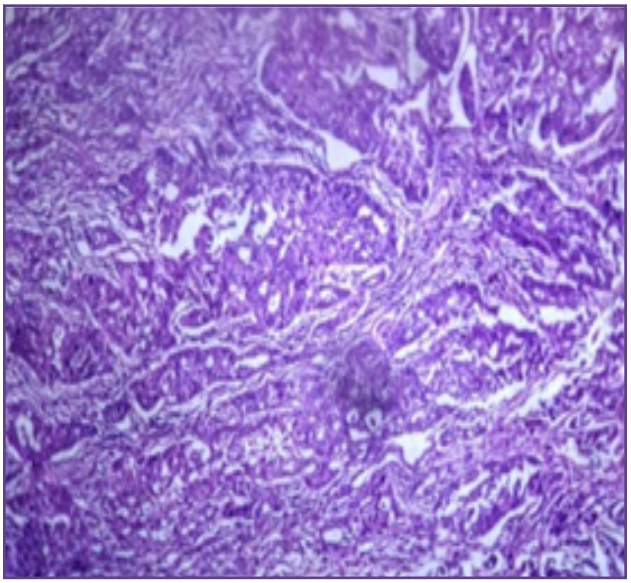

Fig. 2 :Invasive ductal carcinoma(100X,H&E stain).

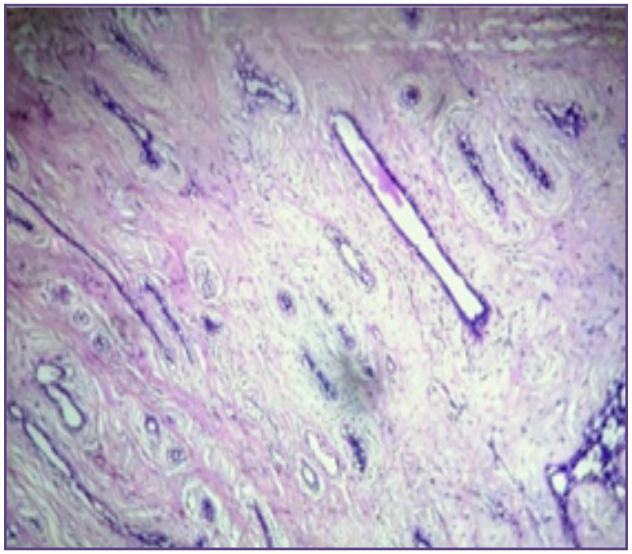

Fig. 3: Fibroadenoma (100X,H&E stain).

Discussion

In our study gynaecomastia was 75%, benign breast disease like fibroadenoma, breast abscess, benign epidermal cyst was 9.3%, breast malignancy was 15.4%. Study by Goyal et al showed gyaecomastia 45.5%, benign breast lesion 24%, ductal cancer 18.2% and lipoma 12.1% [4] .

Fibroadenoma has been documented very rarely in medical literature as case reports and rarely as series of four patients. Hormonal imbalance is the main cause of proliferative changes in the male breast leading to lobular differentiation and fibroepithelial lesions. In most fibroadenoma, gynaecomastia is a consistent feature but in rare cases lobular differentiation is seen without gynaecomastia [5,6,7]. Our patient had fibroadenoma with gynaecomastia. In some literature fibroadenoma has been reported in transsexual [8,5].

Epidermoid cyst are more common in scalp, face and back. The source of epidermis is the infundibulum of hair follicle[9]. Epidermoid cysts are usually asymptomatic and slow growing till it is infected secondarily. Giant epidermoid cysts are more prone to develop cancer[10,11,12].

Breast abscess in our study was 3.4%. It was subaereolar in location. FNAC confirmed abscess. Incision and drainage was done. No predisposing cause was present.

Breast cancer has been seen to be 1% of all malignancy in men [1]. Our study showed carcinoma to be 12.5%. Some other studies have also shown increasing incidence of male breast cancer in the last two decades. Study by Goyal et al in 2015 also showed incidence of ductal carcinoma in male breast to be 18.2% [4]. Risk factors for both male and female breast cancer are genetic, exposure to radiation, endocrine disorder, advance age, history of benign breast disease. In males, old age, high socio-economic status, exposure to female hormone and patients with decreased testicular function are more prone to develop breast cancer. Sometimes obesity is also considered a risk factor because fat cells may convert androgens to estrogens[13,14]. Breast cancer can be associated with gynaecomastia[15] . Chronic alcoholics have increased incidence as alcohol cause liver cirrhosis which leads to hormonal imbalance causing cancer[16]. Male breast cancer occurs 5-10 years later than female breast cancer[17]. Bilateral involvement is less than 2%[18]. As male breast is smaller in size, so carcinoma is located near the nipple. So spread to the nipple is common with nipple ulceration and discharge[19].

Breast sarcoma are rare tumour with incidence of <1% of all breast malignancy[20]. Very few cases have been reported in the literature[21,22,23]. Berg et al first described stromal sarcomas[24]. Stromal sarcomas rarely involves lymphnodes. Cailery et al found negative regional lymph node in 25 patients studied. Our case also had negative lymph node. Age incidence of sarcoma is higher than that of ductal carcinoma[25].

Conclusion

Due to varied spectrum of male breast lesion and increasing incidence of carcinoma as well as sarcoma in the urban male population, all male breast swelling should be thoroughly investigated for earlier diagnosis of cancer so as to prevent morbidity and mortality due to it.

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