# **Original Research Article**

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# Clinicopathological catalogue of male breast diseases

# Ashwath Narayan Ramji\*

Department of Surgery, Kempegowda Institute of Medical Sciences, Bangalore, Karnataka, India

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### \*Correspondence:

Dr. Ashwath Narayan Ramji, E-mail: drashwathramji@gmail.com

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# **ABSTRACT**

**Background:** Though relatively uncommon compared to diseases of the female breast, diseases of the male breast do occur, but are poorly studied. These range from benign lesions to malignant disease. The purpose of this study was to enumerate the various disorders of the male breast encountered in our practice, so as to develop a better understanding of the clinicopathological profile of these conditions.

**Methods:** This was a retrospective study conducted in the Department of Surgery, KIMS Hospital, Bangalore, from September 2017 to September 2018. Male patients treated for disorders of the breast were included in the study. The clinical profile of the patients and the disease conditions were studied.

**Results:** 21 patients were included in the study. The most common presentation was due to swelling, pain or lump in the breast. The most commonly encountered condition was gynaecomastia (66.66%). Primary malignancy of the breast was encountered in 2 cases.

**Conclusions:** The male breast is subjected to various disease conditions. Most presentations are due to aesthetic defects. Rarely, primary malignancy can develop in the male breast. The breast is an often-neglected part of the male anatomy, and hence patients often present late with complications.

Keywords: Male breast, Breast disease, Breast cancer, Male breast cancer

# **INTRODUCTION**

The male breast has all the components present in the female breast, however the male breast is mainly composed of fatty tissue, whereas in the female, lobule-derived units and glands are more predominant. Diseases of the male breast are uncommon, and hence poorly studied. Further, presentation is often late due to embarrassment. The most common presentation of male patients with breast pathologies is due to gynaecomastia, where cosmetic correction is sought. Approach to breast disease in male patients typically mirrors that employed in female patients. Evaluation of hormonal profile and genetic factors may be further required. Because of "toxic masculinity", the stigma and misplaced shame associated with lesions of the breast in male patients can have profound psychological impact, so adequate care

must be taken when approaching the insecure patient.<sup>8</sup> Both benign and malignant diseases affect the male breast, with a rising incidence of male breast cancer in recent decades.<sup>9,10</sup> Hence, this study was conducted to analyse the clinicopathological profile of male breast diseases.

### **METHODS**

# Type of study

Retrospective, non-interventional, qualitative prevalence-assessment study.

#### Period of study

One year (September 2017 to September 2018),

#### Inclusion criteria

All adult male patients who presented to KIMS Hospital with disorders of the breast as documented in out-patient logs and registers, as well as operation theatre registers were included in the study.

#### Exclusion criteria

Patients who identified as transgender (both male to female, and female to male), gender ambiguous, or "third gender"; and all female patients were excluded from the study to avoid confounding factors influencing the data. A detailed study with reference to gender nonconforming individuals however could prove insightful with regards to hormonal influence as well as genotype translation into pathological conditions of the breast, but is out of the scope of this study.

# Study population

Adult male individuals from urban boroughs who sought treatment at the tertiary health centre for specific problems associated with the breast.

A total of 263 patients had visited the out-patient clinics and/or admitted for a diagnostic or therapeutic procedure for conditions affecting the breast in the time frame studied, majority being women who were treated for mastalgia on outpatient basis. 21 patients satisfied the inclusion criteria and were adopted into the study.

Records of the patients were studied and details regarding age, clinical factors, investigations, and treatment were tabulated.

In all patients, either definitive surgical procedures or tissue biopsy was done – histopathological data was noted. Treatment protocols and post-operative period were perused to determine outcomes.

Unadjusted, univariate, raw analysis of data was performed for statistical stratification.

# **RESULTS**

Most patients (42.85%) belonged to the 21-30 years age group with the mean age of presentation being 31.52±11.61 years (Table 1). The youngest patient was 18 years of age and the oldest patient included in the study was 55 years old.

Table 1: Age distribution of patients in the study.

Age (in years)	No. of patients	Percentage (%)
10-20	3	14.28
21-30	9	42.85
31-40	5	23.80
41-50	2	9.52
51-60	2	9.52

Diabetes mellitus was the most common comorbidity encountered (9.52%). Hypertension and bipolar affective disorder were seen in one patient each (Table 2).

Table 2: Comorbidities of patients in the study.

Co-morbidities	No. of patients	Percentage (%)
Diabetes mellitus	2	9.52
Hypertension	1	4.76
Other	1	4.76

In majority (71.42%) of the patients, the presenting complaint was swelling of the breast with no discrete lump. Lump in the breast was the complaint in 2 (9.52%) patients (Table 3). For 2 patients presentation was due to pain. One patient presented with a long-standing ulcer over the breast and in one case, the patient had presented due to back pain, which was evaluated to be due to skeletal metastases from primary breast malignancy.

Table 3: Presenting complaints of patients in the study.

Presenting complaint	No. of patients	Percentage (%)
Swelling of breast	15	71.42
Lump in the breast	2	9.52
Pain in the breast	2	9.52
Ulcer over breast	1	4.76
Other	1	4.76

In 7 cases (33.33%), lesion was in the right breast, in 6 cases (28.57%), lesion was in the left breast, and in 8 cases (38.09%), lesion was bilateral. The cases with bilateral involvement were all found to be gynaecomastia.

The most common diagnosis encountered was gynaecomastia (Table 4), which was seen in 14 patients (66.66%). In two patients (9.52%), the diagnosis was found to be carcinoma breast. In other patients, various benign conditions were diagnosed. Out of the 21 cases, 19 (90.47%) were benign conditions and 2 were (09.53%) were malignant.

Table 4: Various breast diseases encountered in the study.

Diagnosis	No. of patients	Percentage (%)
Gynaecomastia	14	66.66
Carcinoma	2	9.52
Fibrocystic Disease	1	4.76
Abscess	1	4.76
Sebaceous Cyst	1	4.76
Lipoma	1	4.76
Folliculitis	1	4.76

# **DISCUSSION**

Diseases of the male breast, both benign and malignant are relatively rare compared to those in females. However, as male breast contains almost all the same anatomical components as the female breast, all diseases encountered in females can also thus develop in males as well. In males, the normal breasts have mainly fatty tissue with few ducts interspersed amongst the stroma; whereas, in female breast, ducts and glandular tissue predominates.<sup>1</sup>

Men with diseases of the breast are often depressed regarding their condition, and studies have reported feelings of anxiety and emasculation amongst patients, and even embarrassment to seek medical attention.<sup>2</sup>

In our study, the mean age of presentation was 31.52±11.61 years (Table 1). Similar age preponderance was noted in other studies.<sup>3</sup> No inference could be drawn from the comorbidities encountered (Table 2). In our study, the most common presentation was swelling of the breast (Table 3) without any discrete lump. This is mostly attributed to gynaecomastia.

Diagnosis of male breast lesions is achieved by physical examination, radiological investigations, and tissue biopsy. In patients less than 25 years of age, a mammogram is indicated, whereas targeted ultrasound is indicated in older patients.<sup>4</sup> In our study, FNAC was done for all patients, and in one patient with suspected malignancy where FNAC was inconclusive, edge biopsy was done. Nowadays, advanced imaging modalities like CT, MRI, and PET are increasingly being used.<sup>5</sup>

In our study, the most common condition encountered (Table 4) was gynaecomastia, which was seen in 66.66% of the patients. In most studies, gyanecomastia accounted for up to 80% of male patients presenting to hospitals.<sup>6</sup> Most of the patients in our study were less than 30 years of age and sought medical treatment for cosmetic reasons. Similar age preponderance was seen in other studies.<sup>3</sup>

Gynaecomastia is defined as a benign proliferation of glandular male breast tissue, usually due to increased estrogen activity. Physiological gynaecomastia occurs during infancy, adolescence and old age. Etiology in other cases includes Klinefelter syndrome, estrogenic drugs, steroid use, certain cancers, chronic liver disease, and alcoholism. In most cases, it is idiopathic. In our study, no specific etiological factor was identified. Gynaecomastia may be unilateral or bilateral. In our study, 6 cases had unilateral gynaecomastia and 8 patients had bilateral involvement. Treatment involves evaluation for the cause, hormonal studies, and cessation of probably offending agents. The psychosocial impact of gynaecomastia can be profound; hence counseling the patients at presentation is of utmost importance. Patients

either underwent excision, liposuction or both; and had satisfactory cosmetic outcomes.

Another hyperplastic condition that can be encountered is pseudoangiomatous stromal hyperplasia (PASH). It is usually found incidentally on histology done for other reasons. It is a benign proliferation of the stromal components of the breast tissue and does not represent premalignant change. However, local recurrence is known.<sup>7</sup>



Figure 1: Ulcerative lesion over right breast.



Figure 2: Nipple retraction right breast.

In two cases, the diagnosis was found to be carcinoma of the breast. One patient had presented with ulcer of the breast (Figure 1). The other patient had presented to the hospital with pain in the back, which on evaluation revealed vertebral metastasis.

In the latter patient, the primary tumor was traced to the right breast, which had induration and nipple retraction (Figure 2), which the patient had ignored. These patients were aged 48 and 55 years, whereas in literature, the average age of presentation is 68 years. Both had ignored their symptoms for prolonged periods. Breast cancer is rare in men and accounts for only 0.17% of all cancers in men and 1% of all breast cancers.7,10 As in

women, risk factors include BRCA1 and BRCA2 mutations, ethnicity, older age, exposure to radiation and chemicals. <sup>7,9,10</sup> In cases of suspected malignancy, patients should undergo aspiration or surgical biopsy. <sup>11</sup>

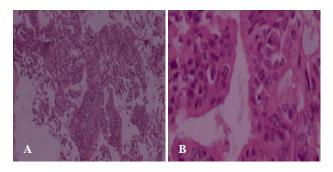


Figure 3: (A) Ductal carcinoma; (B) Ductal carcinoma (high power).

Histopathology revealed infiltrative ductal carcinoma (Figure 3) in both cases, with ER PR positivity and Her2 negative.

Most cases of breast cancer in men are invasive ductal carcinomas. Lobular carcinoma is rare since terminal lobules are usually not present in the male breast. On immunohistochemistry, male breast cancers tend to be positive for estrogen receptor (ER) and negative for HER2 receptor. ER positivity allows the use of Tamoxifen as an oral chemotherapeutic agent, as was done in our cases. Additionally, bisphosphonates were given to the patient with spinal metastasis.

Malignancy in the breast may also be in the form of lymphomas, metastasis from melanoma, lung cancer, and lymphomas; sarcomas, rare tumors like myofibroblastomas; as well as benign tumors like neuromas, schwannomas and glomus tumors.

In one patient, histopathological diagnosis was fibrocystic disease of the breast. This is a fairly common condition in females, however, it is rare in males since it develops from glandular tissue. Only a few cases have been reported in literature. In our study, the patient underwent excision of the lesion. Fibrocystic disease of the breast is a common condition in females, characterized by stromal fibrosis, ductal branching, intraductal epithelial proliferation, and cyst formation. Lesions of breast lobules including cysts, fibroadenoma, and lobular neoplasia are rare in men, however, sporadic cases of such lesions have been reported, usually with associated underlying gynaecomastia. 14,15

Lesions developing from skin and its appendages that develop anywhere else in the body may also develop in and around the breast. In our study, such lesions encountered included lipoma, sebaceous cyst, abscess, and folliculitis. Other subcutaneous lesions that can be encountered include epidermal inclusion cysts, hematomas and traumatic fat necrosis of the breast.<sup>7</sup>

Treatment of these conditions remains the same as their presence anywhere else in the body, with consideration to the cosmetic outcome. In the case of abscesses, percutaneous drainage is usually done, and for refractory cases, excision of the lesion along with the involved ducts is done. <sup>16</sup>

# **CONCLUSION**

All disease processes affecting the female breast can also manifest in the male breast, usually in the presence of endocrine disturbances. The most commonly encountered condition was gynaecomastia, for whom operative intervention is the treatment of choice, after ruling out causative factors. Carcinoma of male breast has been rising in incidence, and is often highly aggressive, hence early diagnosis is advocated. This was a limited study involving a small population, and subject to the inherent flaws of retrospective analysis and so a wider study with less room for investigator bias would provide more comprehensive results.

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# REFERENCES

- 1. Johnson RE, Murad MH. Gynecomastia: pathophysiology, evaluation and management. Mayo Clin Proc. 2009;84:1010–5.
- Kipling M, Ralph JEM, Callanan K. Psychological Impact of Male Breast Disorders: Literature Review and Survey Results. Breast Care. 2014;9:29-33.
- Al-Allak A, Govindarajulu S, Shere M, Ibrahim N, Sahu AK, Cawthorn SJ. Gynaecomastia: a decade of experience. Surgeon. 2011;9:255-8.
- Chesebro AL, Rives AF, Shaffer K. (2018). Male Breast Disease: What the Radiologist Needs to Know. Current Problems in Diagnostic Radiology. Curr Probl Diagn Radiol. 2018;pii: S0363-0188(18)30061-6.
- 5. Madhukar M, Chetlen A. Multimodality imaging of benign and malignant male breast disease. Clin Radiol. 2013;68(12):698–706.
- Aslam HM, Saleem S, Shaikh HA, Shahid N, Mughal A, Umah R. Clinico- pathological profile of patients with breast diseases. Diagn Pathol. 2013:8:77.
- 7. Iuanow E, Kettler M, Slanetz PJ. Spectrum of diseases in the Male Breast. Am J Roentgenol. 2011;196:247–59.
- 8. Nuzzi LC, Cerrato FE, Erikson CR, Webb ML, Rosen H, Walsh EM, et al. Psychosocial impact of adolescent gynecomastia: a prospective case-control study. Plast Reconstr Surg. 2013;131:890-6.
- Sasco AJ, Lowenfels AB, Pasker-de Jong P. Review article: epidemiology of male breast cancer—a meta-analysis of published case-control studies and

- discussion of selected aetiological factors. Int J Cancer. 1993;53:538-49.
- Giordano SH. Breast Cancer in Men. New England J Med. 2018;378(24):2311–20.
- 11. Jaiyesimi IA, Buzdar AU, Sahin AA, Ross MA. Carcinoma of the male breast. Ann Intern Med. 1992;117:771-7.
- 12. Goss PE, Reid C, Pintilie M, Lim R, Miller N. Male breast carcinoma: a review of 229 patients who presented to the Princess Margaret Hospital during 40 years: 1955-1996. Cancer. 1999;85:629-39.
- 13. Vorherr H. Fibrocystic breast disease: Pathophysiology, pathomorphology, clinical picture, and management. Am J Obstet Gynecol. 1986;154(1):161–79.

- 14. Bannayan GA, Hadju SI. Gynecomastia: clinicopathological study of 351 cases. American Journal of Clinical Pathology. 1972;57:431.
- 15. Adibelli ZH, Oztekin O, Gunhan-Bilgen I, Postaci H, Uslu A, Ilhan E. Imaging characteristics of male breast disease. Breast J. 2010;16(5):510-8.
- 16. Scholefield JH, Duncan JL, Rogers K. Review of a hospital experience of breast abscesses. Br J Surg. 1987;74:469–70.

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