

# Breast Diseases in Males - A Morphological Review of 150 Cases

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## Abstract

**Objective:** This study was carried out to observe the prevalence breast diseases of males in our setup.

**Method:** All cases of male breast disease diagnosed from 1991 -97.

**Results:** One hundred and fifty (150) cases of male breast diseases were diagnosed. Age of the patients ranged from 4 to 90 years, with mean age 38.75 years (median = 33 years). Gynecomastia was the most common pathological abnormality of the male breast (58.66%). Most of the patients presented in the 3rd decade of life. Amongst the malignant conditions, infiltrating ductal carcinoma was most prevalent (82%). Most of the patients with malignancy presented in the 5th and 6th decades of life.

**Conclusion:** Gynecomastia was the most prevalent male breast disorder, followed by infiltrating ductal carcinoma. Our findings correspond with that of world literature (JPMA 50:177, 2000).

## Introduction

The male breast develops in a manner similar to that of the female until puberty. Owing to absence of pen-pubertal estrogen stimulation, male breast development ceases at this stage. Thus normal adult male breast mimics immature female breast<sup>1</sup>. Lesions of the breast are preponderantly confined to the female. Breast cancer in males is a relatively uncommon disease. A wide variation in its incidence has been noted in different geographic regions of the world, ranging from 3.4 cases per 100,000 man-years to 0.1 per 100,000<sup>2</sup>. In Pakistan, much less information is available regarding male breast disorders. This study was conducted to observe the prevalence of breast diseases of males in our setup.

## Materials and Methods

A retrospective review was performed on 150 cases of male breast diseases diagnosed in the Department of Pathology, the Aga Khan University Hospital (AKUH), Karachi, during a seven-year period (1991-97). Parameters observed included, age at presentation, site of breast involved, histological diagnosis and tumor size (where applicable). Complete information was not available for all features of each case. The specimens were fixed in 10% buffered formalin and paraffin embedded sections stained with routine Hematoxylin and Eosin stains. PAS (Periodic Acid schiff), Reticulin and Massons Fontana stains were performed where necessary. Immunohistochemical staining by PAP (Peroxidase-Anti-Peroxidase) was also done where indicated. The immunomarkers included Cytokeratin, Vimentin, Actin, Desmin, S-100 protein and HMB-45. All of these monoclonal antibodies are commercially available and were obtained from DAKO, Denmark.

## Results

One hundred and fifty cases of male breast diseases were diagnosed during the study period (1991-97). Age of the patients ranged from 4 to 90 years, with mean age of 38.7 years (median 33 years). Majority (74%) of the specimens were various benign conditions (Table 1),

**Table 1. Benign conditions (n=111).**

Histologic type	No. of cases	Percentage
Gynecomastia	88	79.3
Duct Ectasia	11	9.9
Non-specific inflammation	6	5.4
Fibroadenoma	2	1.8
Hemangioma	2	1.8
Gynecomastia + Duct Ectasia	1	0.9
Benign Blue Cell Nevus	1	0.9

the most common being gynecomastia (88 cases out of 111). Patients with gynecomastia revealed a slight predominance (40%) of right breast involvement, however both breasts were affected in about 25% of the cases. More than half (51.72%) of these patients presented during the 3rd decade of life. Other benign conditions included duct ectasia (11 cases), non-specific inflammation (6 cases), fibroadenoma and hemangioma (2 cases each) and a single case of benign blue cell nevus. Malignant tumors comprised 26% (39 cases) of the total male breast disorders, most common (82%) being infiltrating ductal carcinoma (Table 2).

**Table 2. Malignant conditions (n=39).**

Histologic type	No. of cases	Percentage
Infiltrating ductal carcinoma	32	82.0
Carcinoma (unclassified)	3	7.7
Infiltrating Papillary Carcinoma	2	5.1
Malignant Fibrous Histiocytoma	1	2.6
Undifferentiated Large Cell Tumor	1	2.6

There were three cases of carcinoma, unclassified, two cases of infiltrating papillary carcinoma and one case of malignant fibrous histiocytoma. In one case the tumor was of undifferentiated large cell type of histology. Most (68.4%) of the patients with malignancy presented in 5th, 6th and 7th decade of life. The age range was 30 to 78 years and mean age was 52.6 years. Side of breast involvement was known in 32 cases, approximately two thirds (65.6%) affecting the right breast. Tumor size was recorded in 34 cases. It ranged from 0.3 cm to 10 cm, with mean tumor size of 3.43 cm. Estrogen receptor status was known in three patients only, one of these was Estrogen receptor positive.

## Discussion

The rudimentary male breast is relatively free from pathological involvement. Only two processes occur with sufficient frequency to merit consideration. Gynaecomastia could be an outcome of a number of causes, the common pathophysiologic feature being relative excess in estrogenic activity, decrease in androgenic activity, or both<sup>3,4</sup>. Clinically, it may be unilateral (with a predominant left breast involvement) or bilateral<sup>5</sup>. However, in our study a slight predominance of right breast involvement was noted. Bilateral breast involvement was seen in one fourth of the cases. This is consistent with 20-30% bilaterality reported in literature<sup>6</sup>.

Breast carcinoma in males is infrequent, affecting only 1000 men each year in United States<sup>2</sup>. Most of the Western studies reveal that breast cancer in males has a unimodal age distribution, a later age at onset and poor prognosis compared with their female counterpart<sup>7-10</sup>. In this study majority of the patients presenting with breast cancer were between 51-70 years of age, with the highest number being in the 6th decade. This is at least one decade older than that of Pakistani females<sup>11,12</sup>. In contrast to the left sided laterality noted by authors<sup>13-15</sup> in the current study tumors arose in the right breast slightly more often than in the left breast.

The size of the primary tumor was more than 3 centimeters in the majority (60%) of cases. This is greater as compared with that of the Western population<sup>16</sup>. It has been suggested that late stage presentation because of a delay in seeking medical advice contribute to larger tumor masses seen in both male and female population of Pakistan<sup>11-15</sup>. Grossly and microscopically, there do not appear to be any difference between breast cancer in men and women<sup>17</sup>. Invasive ductal carcinomas dominated in our study, but special histologic variants (like papillary carcinoma) also were represented. Lobular carcinoma was not found, but other series has reported lobular carcinoma in men<sup>13,14,18</sup>.

This study attempted to observe the prevalence of male breast disorders and it is hoped that it will help remind conditions of these unusual problems, because earlier diagnosis of male breast cancer has clearly shown an improved prognosis<sup>19,20</sup>.

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