Clinical Profile of Male Patients Presenting with Breast Cancer in Kashmir Valley

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Abstract

Introduction Breast cancer is a rare disease in males with unknown etiology and variable rate of incidence among different ethnic and geographical groups.

Objectives This article studies the clinical profile of male breast cancer in Kashmir Valley of India

Materials and Methods This study was a retrospective study conducted at a super-specialty hospital (Government Medical College Srinagar) in the department of medical oncology over a period of 4 years from January 2017 to October 2021. All male patients who presented with a histopathology-proven diagnosis of breast cancer were included and studied.

Results A total of 8 male patients with breast cancer were studied. The median age at diagnosis was 55 years. Most of the patients were from rural background. The most common presenting symptom was breast lump followed by ulceration. The most common location of the tumor was retroareolar. Infiltrating ductal carcinoma (100%) was the only subtype present in our patients. Locally advanced disease accounted for most of the cases. Among stage IV patients two had bone as the metastatic site and one patient had in addition lung metastasis. Immunohistochemistry analysis revealed that all patients (100%) were hormone receptor positive with only one patient being triple positive (12.5%). None of the patients had triple negative disease in our study. In our study 6 patients were treated with multimodalities (surgery, chemo, radiation, and targeted agents).

Conclusion Male breast cancer is a well-recognized entity and the gender gap of disease need to be abolished. Awareness among masses and training of general practitioners is needed to pick cases at early stage.

Keywords
- male breast cancer
- triple negative
- ductal carcinoma
- lung metastasis

Introduction

Male breast cancer is a rare disease occurring in the breast tissue of men and is uncommonly encountered in routine practice by an oncologist. Breast cancer is considered as the disease of female breast due to its high incidence in females, but breast cancer does occur in men. The disease can occur at any age, but most commonly seen in elderly population. Male breast cancer accounts for less than 1% of all cancers in men

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and less than 1% of all diagnosed breast cancers.[1] The low incidence rate of breast cancers in men compared with female account to lesser amount of their breast tissue and associated difference in hormonal effect. Even though the factors that influence the malignant changes are the same. The incidence of male breast cancer is variable in different ethnic and geographical groups[2,3]. In Europe it is approximately 1/100,000 as compared with < 0.5/100,000 in Japan[4] In Central African countries the breast cancer rate is $> 6\%$ in men,[3,5] which could be due to hyperestrogenism caused by endemic hepatic infectious disease.[3,6] The etiology of male breast cancer is unknown, although many factors have been implicated in the risk factors of male breast cancer, but in clinical practice, increased age is the only factor to have strong association.[7]

Positive family history plays a role in the risk of male breast cancer more so in metastatic stage, approximately 15 to 20% cases.[6] Both BRCA1 and BRCA2 mutations are implicated, more so BRCA.[2,8] Males with Klinefelter's syndrome carry XXY chromosomal anomaly and have approximately 20- to 50-fold increased lifetime risk of breast cancer.[3,5] Occupational exposures such as blast furnaces, steel works,[6] and men working with soap and perfume petrol[9,10] have been associated with increased risk of breast cancer. Other occupational exposures have also been implicated but conclusive evidence is lacking. Radiation exposure has been also implicated with a dose relationship to disease. Low radiation dose exposure has not been found to be causative, but higher dose exposure as used in the treatment of gynecomastia and survivors of atomic bomb exposure have been found to have increased relative risk of developing breast cancer.[12,13]

Endocrine imbalance (estrogen/testosterone) tip the male to increased risk of breast cancer and conditions with increased estrogen level like diseases affecting the testis.[14] Obesity[14,15] and exogenous estrogen use in cancer prostate in the past[16] also have increased risk. Male breast cancer cases are especially from rural and low socioeconomic status and present late with an advanced stage. Although male breast cancer is not more aggressive than female breast cancer and have better prognosis due to its biology (most are hormone receptor positive) when compared with same age and stage female breast cancer. Despite this, it is an unfortunate scenario that elderly male patients shy away to approach health care for treatment till they present with huge fungating growth. Due to relative rarity of male breast cancer, prospective randomized trials are lacking and most information on breast cancer in men is collected from retrospective studies of several decades and treatment recommendations have been extrapolated from results of trails in female patients.[14,17]

Material and Methods

The current study was a retrospective study conducted at a superspecialty hospital (an associated hospital of Government Medical College Srinagar) in the department of medical oncology, over a period of 4 years from January 2017 to October 2021. All male patients who presented with a histopathology-proven diagnosis of cancer breast were included and studied. Patients who presented with cytological diagnosis and no histopathology-proven confirmation were excluded from the study. Detailed history with focus on risk factors and clinical features were retrieved from departmental records of all patients, staging workup including core biopsy with immunohistochemistry (IHC) (ER, PR, Her2, Ki67) and if bilateral mammography had been performed. Contrast-enhanced computed tomography chest and abdomen and bone scan had been performed as and when required, also TNM staging and magnetic resonance imaging breasts had been done in patients who presented as axillary swelling without a primary breast swelling. Histopathological profile with focus on grade of tumor, receptor status, type of tumor, and lymphovascular invasion had been taken into consideration. Different modalities of treatment availed by patients were analyzed. The data was analyzed for various clinicopathological features and acceptance to different modalities of treatments of male breast cancer.

Results

A total of 8 patients were diagnosed as male breast cancer and reported to the department of medical oncology of this hospital during the study period of 4 years. The youngest patient was 42 years old and the oldest was 83 years old. The median age at diagnosis was 55 years. Six (75%) patients were more than 55 years and 2 (25%) were less than 55 years of age. Most of the patients (6, 75%) were from rural background. Left side lesions (6 out of 8, 75%) were more common than right side lesions (2 out of 8, 25%). The most common presenting symptom was breast lump (75%), skin ulceration (25%), and axillary lump (25%). None of the patients had any association with known risk factors except age. The most common location of the tumor was retroareolar (70%). Infiltrating ductal carcinoma (100%) was the only subtype present in our patients. The tumor was mostly low (grade 1) 50% and moderate (grade 2) 37.5%, only 12.5% had high (grade 3) tumor.

In our study, locally advanced disease accounts to (6 out of 8) 75% which was equally distributed between stage II and stage III (3) 37.5% each and (2) 25% were in stage IV disease, respectively. Among stage IV patients both had bone as the metastatic site and one patient in addition had lung metastasis. IHC analysis revealed that all patients (100%) were hormone receptor positive with only one patient being triple positive (12.5%). None of the patients had triple negative disease in our study. All 6 patients in our study with locally advanced disease had been worked up for complete staging and had been treated with multimodalities (surgery, chemotherapy, radiation, and targeted agents [hormonal, trastuzumab [1]]). Both (2) stage IV patients received only hormonal treatment and denied any surgical intervention (toilet mastectomy) plus palliative radiation to bone. These 2 stage IV patients expired on follow-up. All 6 patients with locally advanced disease have been on follow-up till date (►**Table 1**). All 6 patients with locally advanced disease received four cycles of AC (doxorubicin plus cyclophosphamide) followed by 12 weekly doses of paclitaxel chemotherapy.

Table 1 Clinicopathological characteristics of patients

Parameters	Number (*n*)		Percentage
Age	< 55 y	6	75
	> 55 y	2	25
Demographics	Rural	6	75
	Urban	2	25
Presentation	Breast lump	6	75
	Axillary lump	2	25
	Skin ulceration	2	25
Histopathology	Infiltrating ductal carcinoma	8	100
	Other histological subtypes	0	
Family history and association with other risk factors	Present	0	0
	Absent	8	100
Tumor grade	G-1	4	50
	G-2	3	37.5
	G-3	1	12.5
Stage	I	0	0
	II	3	37.5
	III	3	37.5
	IV	2	25
IHC	Hormone receptor positive	8	100
	Triple positive	1	12.5
	Triple negative	0	0
Site of metastasis	Bone	2	100
	Bone and lungs	1	50
	Liver, brain, and soft tissue	0	0

Abbreviation: IHC, immunohistochemistry.

Discussion

The prevalence of male breast cancer increases with age and is rarely seen before the age of 40 years. The median age observed in our study was 55 years at the time of diagnosis. It is similar as reported in the literature. It has been observed that almost in all studies male breast cancers are diagnosed at 5th to 7th decades of life.[3,4] In our study, the most common symptom was breast lump (75%).[18] In our study, an isolated axillary lump was a significant presentation and this finding needs more extensive studies. Positive family history and associated risk factor have been involved in increased risk of developing male breast cancer but none of our patients had any such association. All 8 (100%) patients in our study had infiltrating ductal carcinoma in histopathological exam which is in accordance with as reported in other studies.[19]

Most of the patients 4 (50%) in our study had grade 1 tumors unlike other studies reporting grade 2 tumors as the common.[20] Out of 8 patients 6 (75%) were in stage II and III (37.5%) each, while other studies report majority with stage II disease.[21] This variation may be attributed to small sample size and other geographical and ethnic factors and needs further study. In our study, all 8 (100%) patients were hormone receptor (ER, PR) positive, only 1 (12.5%) patient was triple positive and none was triple negative. Male breast cancer receptor status of our study has almost similar findings with others studies.[21,22] In our study, high grade and advanced stage tumors present with distant metastasis to the bone (100%), and bone and lung in 50% patients in males > 75years of age.[23]

As far as the treatment part of male breast cancer is concerned, multimodality treatments are available. Hormone treatment is an important part of all male breast cancer treatment as all are hormone receptor positive. Surgery in the form of modified radical mastectomy is done for stage I to III, radiotherapy is given in high-grade and locally advanced tumors.

Conclusion

Male breast cancer is an uncommon disease but is a well-recognized entity. Breast cancer has always been considered as a disease of female gender. The gender gap of the disease needs to be abolished. Younger males because of awareness

present at an early stage and are eager to get treatment. Hence, younger males fare well in their disease course. Elderly males especially from rural background present at an advanced stage due to delayed presentation. Elderly male population lacks awareness and also shies away from the disease, resulting in their reluctance for treatment. To raise awareness among masses about the disease is required and general practitioners also need to be educated so that cases are picked at early stage for better outcome. However, large sample studies are the need of the hour to draw more conclusions regarding modalities of treatment.

Patient Consent
None declared.

Conflict of Interest
None declared.

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