Male Breast Cancer in India: Series from a Cancer Research Centre

Deepak Sundriyal^{1,3} · Sumedha Kotwal² · Ramesh Dawar² · K. M. Parthasarathy¹

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Abstract Male breast cancer (MBC) is an uncommon malignancy. The scarcity of cases has reduced the focus of research in this area as compared with female breast cancer. The incidence of breast cancer in males is slowly rising and it becomes important to study the biology of this uncommon illness. Aim of the present work was to study the clinico-pathological behaviour of male breast cancer at a cancer research institute in India. 18 cases of MBC were identified out of 1752 cases of breast cancer registered during a 10 year period. Clinical parameters and histopathological data were analysed. MBC comprised of 1.03 % of total breast cancer cases. Median age of presentation was 60 years. Most of the patients presented to us in advanced stage. Aggressive pattern of disease was recognised with high node positivity, more perineural spread and lymphovascular invasion. Most of the cases were positive for hormone receptors. Breast cancer is seen at a relatively early age in Indian males. Disease is aggressive in nature with high hormone receptor positivity.

Keywords Male breast cancer · Invasive ductal carcinoma · Estrogen receptor/Progesterone receptor · Clinico-pathological characteristics

✉ Deepak Sundriyal
drdeepaksundriyal@gmail.com

Sumedha Kotwal
sumedhaahal@gmail.com

Ramesh Dawar
rameshdawar@hotmail.com

K. M. Parthasarathy
dparth@gmail.com

¹ Department of Medical Oncology, Dharamshila Hospital & Research Centre, Vasundhara Enclave, New Delhi 110096, India

² Department of Pathology, Dharamshila Hospital & Research Centre, Vasundhara Enclave, New Delhi 110096, India

³ 79, Sector 12, Dwarka, New Delhi 110078, India

Introduction

Breast cancer in male is a rare malignancy with an estimated incidence rate of 0.5–1 % of all breast cancer cases [1, 2]. It is usually a disease of elderly men and seen in 6th or 7th decade. The risk increases progressively with increasing age. Most of the patients present in advanced stage and the prognosis is poor as compared to the disease in females. The incidence of MBC has been considered as stable for long. However, recent data show that the incidence is slowly rising [3, 4]. The epidemiological data regarding MBC is little as compared to female counterpart due to the rarity of this disease. This is more so in our country where only a few studies are available [5–7].

This study was aimed to analyse the clinico-pathological behaviour of male breast cancer at a cancer research institute in India.

Materials and Methods

This was a retrospective study. A total of 1752 patients with breast cancer were registered during a 10 year study period (January 2005 to December 2014). 18 cases of MBC were identified. Data regarding the clinical history, examination findings, performance status (PS) during presentation, stage of the disease, pathological characteristics and hormonal status were evaluated.

Results

MBC accounted for 1.03 % of the total breast cancer cases. Median age of presentation was 60 years ranging from 42 years to 70 years. Tumour was localized to right side in

10 patients and to the left in 8 patients. Most common presentation was mass lesion detected incidentally. Along with mass lesion, 2 patients presented with pain and another presented with retraction of and discharge from nipple. None of the patient had a family history of breast cancer or any other malignancy. On histopathological examination (HPE), all patients had invasive ductal carcinoma (IDC). Most of the patient presented to us in advanced stage. 2 patients presented in stage II, 5 in stage III while 11 patients presented with distant metastasis. 10 out of 11 patients, who presented in stage IV disease, had bony metastasis along with visceral metastasis. Although 16 patients presented to us in advanced stage, all of them had good PS; 10 patients had a PS of 0 and 2 patients had a PS of 1 on Eastern Cooperative Oncology Group (ECOG) scale.

Estrogen and progesterone (ER/PR) hormone receptor and HER-2/neu status were available for 17 patients. 16 patients had positive ER/PR status on immunohistochemistry. HER-2/neu receptor positivity was seen in 2 patients. 1 patient was found to have triple negative disease. 7 patients underwent modified radical mastectomy (MRM) as part of their treatment. On HPE, 5 patients had node positive disease. pN3 stage was seen in 4 patients while 1 had pN1 stage as per TNM staging. Lymphovascular invasion was identified in 4 out of 7 patients who underwent surgery while 2 patients had perineural spread (Table 1).

Discussion

The incidence of MBC in our series is 1.03 % which is consistent with the worldwide incidence. However, the 3 studies of male breast cancer available from India have variably reported the incidence. Chikaraddi SB et al. have reported an incidence rate of 0.4 % of all breast cancer. A study done by Rai B et al. from north India, revealed the incidence of male breast cancer as 0.5 % while Shah P et al. have reported a relatively high incidence of 4.1 % from Kashmir [5–7].

Breast cancer in males is usually seen in elderly population. Women usually have a younger age at diagnosis.[8] However, the data available from India have shown that disease is usually seen in younger age group. The median age at presentation in our study is 60 years which is almost a decade earlier than what is being reported in the west [5–8].

Positive family history of breast cancer has been associated with increased risk of MBC which is similar to the pattern observed in female breast cancer. However, we did not find positive family history in any of our patient. Most of our patients presented to us with palpable lump. Nipple involvement was seen in only one patient. Previous studies have shown nipple involvement as an early event in a substantial number of patients [5, 9, 10]. The discordant results may be due to the smaller number of patients in our study.

Table 1 Clinicopathological characteristics of male patients with carcinoma breast. ECOG: Eastern Cooperative Oncology Group; IDC: Invasive Ductal Carcinoma; ER/PR: Estrogen Receptor/Progesterone Receptor; HPE: Histo-pathological Examination

Clinicopathological characteristics	No of patients(<i>n</i> = 18)
Median Age	60 years(42–70)
Laterality	Right - 10; Left -8
Presentation	
Mass lesion	15
Retraction & discharge from nipple	1
Pain	2
Family History	None
Performance Status(ECOG)	
0	16
1	2
Stage of the disease	
I	0
II	2
III	5
IV	11
Histology	
IDC	18
Hormonal status(<i>n</i> = 17); not available for 1 patient	
ER/PR	16
HER-2/neu status	2
Triple negative	1
Treatment	
Surgery	7
Chemotherapy	11
Post surgical HPE(<i>n</i> = 7)	
Node involvement	5 (pN3 = 4; pN1 = 1)
Lymphovascular invasion	4
Perineural spread	2

Similar to the histology in females, most of the MBCs are IDC. We found the histologic subtype as IDC in all patients. Most of our patients presented to us in advanced stage of disease. High node positivity, lymphovascular invasion and perinodal spread all indicated advanced stage of disease. This is usually due to the poor awareness of early signs of the disease and lack of early detection by mammography. Male breast cancer is more likely to be node-positive with more frequent lymphovascular invasion as seen in various other studies [11, 12].

MBC has a high hormone (ER/PR) positive receptor status as compared to female counterpart. Results from the National Cancer Institute's Surveillance, epidemiology, and End Results (SEER) database have shown that more than 90 % of the male breast cancers are ER positive [13]. Similar results have been shown in Indian studies with an ER/PR positivity rate of around 80 % [5, 7]. ER/PR status was available for 17

out of 18 patients in our study and all of them had positive results.

Less number of cases is the drawback of our series. This is mainly attributed to the rarity of the disease as well as a single centre experience.

Conclusion

Breast cancer in Indian males is seen at a relatively early age and the disease is aggressive in nature. Most of them have positive ER/PR status. A comprehensive multi-institutional study is required to exactly delineate the behaviour of the disease and to better understand the clinical spectrum.

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