



Incidence and Clinical Presentation of Male Breast Cancer at Regional Cancer Center of India

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Abstract

Background: Breast cancer in male is a rare malignancy with an incidence of less than 1% of all breast cancer. It is commonly seen in elderly men of 60 to 70 years. Most the patients present with advanced stage and prognosis is worst as compared to female breast cancer. This study was aimed to analyse the incidence and clinical presentation of male breast cancer at regional centre of India.

Material and Method: A retrospective study for all patients who were referred and diagnosed with male breast cancer at our centre was under taken over last 10 years (Jan 2008 – Dec 2017) period. Patients details, from archived medical records were explored for clinical history, clinical findings, stage of disease, histo- pathological report and hormonal status.

Results: During the study periods 16 cases of male breast cancer were found with ages of patients ranged from 41 to 80 years and with mean age of presentation as 63.5 years. Most of the patients were diagnosed in advanced stage. Aggressive pattern of disease was found with lymphovascular invasion, high node positivity with perineural spread. Concluding that there is need for educating the people about this disease and to increase awareness regarding associated risk factors.

Keyword: Male breast cancer, Invasive ductal carcinoma, Lymphovascular invasion.

Introduction

Breast cancer in male is a rare malignancy, accounting 0.5-1.0% of all breast cancer cases and 0.5% of all malignancies in men^[1,2]. It is usually a disease of elderly men and seen in 60 to 70 yrs of age. The risk increases progressively with increasing age. Most of the patients present with advanced stage and prognosis is worst as compared to the breast cancer in females. The incidence of male breast cancer is higher in North

America and Europe as compared to other Asian countries. The incidence of male breast cancer has been considered as stable for long. However recent data shows that the incidence is slowly rising^[3,4]. Because of its low incidence and rarity of disease the epidemiological data regarding male breast cancer is little as compared to female counterpart. In India only few studies are available regarding incidence, presentation, course and prognosis of male breast cancer^[5-7].

This study was aimed to analyse incidence and clinical presentation of male breast cancer at regional cancer center of India.

Material and Methods

This is a retrospective pilot study, in which all the registered diagnosed cases of male breast cancer, who were treated either by surgery (Modified radical mastectomy +Axillary dissection) or chemo radiation, during 10 year period (Jan 2008 to Dec 2017) in the Dept of General surgery, Indira Gandhi institute of medical science, Patna were included. Data were collected regarding the clinical history, clinical finding, stage of disease, histo- pathological report and hormonal status were evaluated. Inclusion criteria were right or left side involvement, positive family history, perception of pain, mass lesion in breast, retraction and nipple discharge. In this study male breast cancer staging was done according to standard TNM staging. In Histo-pathological report we had included types of carcinoma (ductal or lobular), lymphovascular invasion, perineural spread, and nodal involvement. In hormonal study we had evaluated regarding positivity of ER/PR status and HER-2/ neu status. All patients were treated as per standard guideline either surgery and chemoradiation or only chemotherapy and radiation therapy. Modified radical mastectomy and Axillary dissection, was done as surgical therapy.

Results

A total 1564 patients with carcinoma of breast were registered during 10 year of study period. Out of which 16 cases of male breast cancer were identified. In our study male breast cancer accounted for 1.02% of the total breast cancer cases. Median age of presentation was 63.5 years. Age of Male patients with breast cancer ranges from 41 to 80 years (table -1). There were 9 cases in which tumor localized to left side as compare to 7 cases in which tumor had involved right side of breast (table-2).

We have found that, among 16 patients with male breast cancer most common presentation was mass lesion detected. Along with mass lesion, one patient presented with pain and another one presented with nipple retraction and discharge (table-3). No any family history of breast cancer or any other malignancy was found in study. Most of the cases presented to us was in advanced stage. 2 cases were presented in stage I (12.5%) and stage II (12.5%), 9 cases in stage III (56.25%), while 3 cases in stage IV (18.75%) (table -4). 3 cases who presented in stage IV had bony and visceral metastasis.

Estrogen and progesterone (ER/PR) hormone receptor and HER-2/neu status were available for 14 patients. 12 patients had positive ER receptor while 11 patients were positive PR receptor on Immuno-histochemistry. HER-2/neu receptor positivity was seen in 1 patients. 2 patients were found have triple negative disease (table-5). 13 patients underwent modified radical mastectomy with axillary clearance as part of their treatment (table-6). On histo-pathological report all patients had invasive ductal carcinoma. Lymphovascular invasion was identified in 6 out of 13 patients who underwent surgery. 2 patients had perineural spread out of 11 patients who had axillary node positive (table-7).

Table -1 shows Age group of male breast cancer.

Age groups	No. of patients	Percentage (%)
41-50	2	12.5
51-60	4	25.0
61-70	8	50.0
71-80	2	12.5

Table -2 shows Laterality of male breast cancer.

Laterality	No. of patients	Percentage (%)
Right	07	43.75
Left	09	56.25

Table -3 shows clinical presentation

Clinical presentation	No. of pts	Percentage (%)
Mass lesion	14	87.5
Retraction and nipple discharge	01	6.25
Perception of pain	01	6.25

Table -4 shows stages of disease (TNM staging).

TNM staging	No. of pts	Percentage (%)
I	2	12.5
II	2	12.5
III	9	56.2
IV	3	18.7

Table -5 shows Immunohistochemistry of male breast cancer.

Hormonal status	No. of patients (n=14); 2 pts not available	Percentage (%)
ER status	12	85.7
PR status	11	78.5
HER-2/neu status	01	7.1
Triple negative	02	14.2

Table -6 shows Treatment modality.

Surgery + chemo radiation	13
Chemotherapy and radiation therapy only	03

Table -7 shows post surgical HPE report.

Histo pathological report	No. of patients	Percentage (%)
Invasive ductal carcinoma	16	100
Lymphovascular invasion	06	46.1
Peri neural spread	02	18.1
Nodal involvement	11	84.6

Discussion

In our study the incidence of male breast cancer was found to be 1.02% which is similar with worldwide incidence. In India few studies of male breast cancer are available which reported variable incidence. Chikaraddi SB et al^[5] have reported an incidence rate of 0.4% of all breast cancer. Another study Rai B et al [6] 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 2.8% of total resected breast specimen^[7].

Male breast cancer is usually seen in elderly population as compare to female breast cancer which is usually diagnosed at younger age. The median age at presentation in our study is 63.5 years while a median age of approximately 68 years was reported by other studies^[8]. A lower

mean age can be possibly due to the low life expectancy of our society.

In males, most cases of breast cancer are sporadic, but a familial form exist where an increased risk of developing breast cancer is seen in both men and women. However we did not find positive family history in any of our patients^[9].

Mostly, patients of male breast cancer present with a unilateral firm slightly irregular, painless, minimally tender sub-areolar mass. Nipple involvement is rare and there is a slight left side predilection with a left to right ratio of 1.07 :1^[10]. In our study most cases present with breast lump (87.5%) with left side involvement seen in 56.2% of patients.

In males, breast cancer tends to present in advanced stages than females^[11]. In our study, 56.2% of patients presented in stage III and 18.7% were in stage IV. It means most of our patients were in advanced stage of disease and this shows the need for greater attention and awareness for risk identification to ensure detection of cases. There is always delay in diagnosis in male patients since the first symptom develops and they seek medical advice, which result in an advanced stage of disease presentation. It may be because breast cancer is considered primarily a disease of females, and its diagnosis in a male is often met with a sense of disbelief^[12].

Similar to histopathology in females, most of the male breast cancer were infiltrating ductal carcinoma. In our study histopathology shows infiltrating ductal carcinoma in all patients. High node positivity, lymphovascular invasion and perinodal spread all indicated advanced stage of disease. Male breast cancer is more likely to be node positive with more frequent lymphovascular invasion as seen in various studies^[13,14].

Male breast cancer have high rates of hormone receptor expression. According to national cancer institute surveillance, epidemiology, and end results (SEER) database approximately 90% of male breast cancer expresses estrogen receptor and 81% expresses progesterone receptor^[15]. In our study, among the patients analyzed for ER/PR

(14 patients), ER was positive in 85.7% (12 patients) and PR in 78.5% (11 patients). In a recent study, only 5% patients of male breast cancer expressed her 2-neu proto-oncogene^[16,17]. In our study one patient was positive for her 2-neu proto-oncogene, accounting for 7.14% positivity.

Conclusion

Breast cancer in male is rare disease and occurs in elderly people. Most of the patients present at advanced stages with aggressive course. This is due to delayed reporting at health care center after having initial symptom. Most of the patients presents with positive ER/PR status with high node positivity, lymph vascular invasion and perineural spread. Thus emphasizing the fact that there is need for educating the people about this disease and to increase awareness regarding associated risk factor.

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References

- 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;85:629-639.
- Jemal A, Tiwari RC, Murray T, Ghafoor A, Samuel A, Ward E, et al. (2004) cancer statistics, 2004. *CA Cancer J Clin* 54(1): 8-29.
- Speirs V, Shaaban AM (2009) The rising incidence of male breast cancer. *Breast Cancer Res Treat* 115(2):429-430.
- Hodgkon NC, Button JH, Franceschi D, Moffat FL, Livingstone AS (2004) Male breast cancer: is the incidence increasing? *Ann Surg Oncol* 11(8): 751-755.
- Chikaraddi SB, Krishnappa R, Deshmane V (2012) Male breast cancer in indian patients: is it the same? *Indian J cancer* 49(3):272-276.
- Rai B, Ghoshal S, Sharma SC. Breast Cancer in males: a pgrimer experience. *J Cancer Res Ther* 2005;1(1):31-33.
- Shah P, Robbani I, Shah O (2009) Clinicopathological study of male breast carcinoma: 24 years of experience. *Ann Saudi med* 29(4):288-293.
- Miao H, Verkooijen HM, Chia KS, Bouchardy C, Pukkala E, Larongingen S et al. Incidence and outcome of male breast cancer: an international population-based study. *J Clin oncol* 2011;29(33):4381-4386.
- Moore MP, Harris JR, Lippman ME, Morrow M. *Diseases of the breast*. Philadelphia: Lippincott-Raven;1996.p. 859-63.
- Donegan WL, Redlich PN, Lang PJ, Gall MT. Carcinoma of the breast in males: A multiinstitutional survey. *Cancer* 1998;83:498-509.
- Rudan I, Rudan N, Basic V, Rudan D, Jambrisak Z. Differences between male and female breast cancer. III. Prognostic features. *Acta Med Croatica* 1997;51:135-41.
- Iradale R, Brain K, Williams B, France E, Gray J. The experiences of men with breast cancer in the United kingdom. *Eur J Cancer* 2006;42:334-41.
- Joshi MG, Lee AK, Loda M, Camus MG, Pedersen C, Heatley GJ, et al. (1996) male breast carcinoma: an evaluation of prognostic factors contributing to a poorer outcome. *Cancer* 77(3):490-498.
- McLachlan SA, Erlichman C, Liu FF, Miller N, Pintilie M (1996) Male breast cancer: an 11year review of 66 patients. *Breast cancer Res Treat* 40(3):225-230.
- Anderson WF, Jatoi I, Tse J, Rosenberg PS (2010) Male breast cancer: a population-based comparison with female breast cancer. *J Clin Oncol* 28(2):232-239.
- Bloom KJ, Govil H, Gattuso P, Reddy V, Francescatti D. Status of HER-2 in male

and female breast carcinoma. Am J Surg
2001;182:389-92.

17. Muir D, Kanthan R, Kanthan SC. Male versus female breast cancers. A population based comparative immunohistochemical analysis. Arch Pathol Lab Med 2003;127:36-41.