

Breast Cancer – ‘a man problem too’

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Introduction

Male breast cancer (MBC) and female breast cancer (FBC), though apparently similar, are quite different underneath. The incidence of both has increased in recent years, but MBC still accounts for less than 1% of cancers among males in Western countries [1]. Higher incidence rates have been reported in African and Asian countries [2]. Also, unlike the FBC, the etiopathogenesis of MBC is still not well evaluated, and hormonal, environmental or genetic factors probably play a role [3]. However, most risk factors, unlike FBC, have remained understudied. The most common histological subtype reported in MBC is invasive ductal carcinoma [4].

A large majority of MBC, up to 90%, express estrogen receptors [ER], while 81% express progesterone receptors [PR]. These rates of hormonal receptor expression are higher than in the FBC [4,5]. Lower rates of HER2–neu receptor expression have been reported than in FBC [6,7]. [Figures 1 and 2] Currently, the protocols of management for MBC and FBC are the same.

We aim to analyse the clinical profile of patients presenting with MBC.

Methodology

We reviewed the records of MBC cases that were reported to our surgery unit from December 2016 to December 2022, in accordance with ethical guidelines. We aim to analyse the clinical profile of patients presenting with MBC to identify associated risk factors. All patients who could be contacted and who consented to participate in the study were included. A total of 18 patients were included in the study. Results were subjected to descriptive analysis and the chi-square test, where applicable, with p-values less than 0.05 considered significant. The last patient completed 06 months of follow-up.

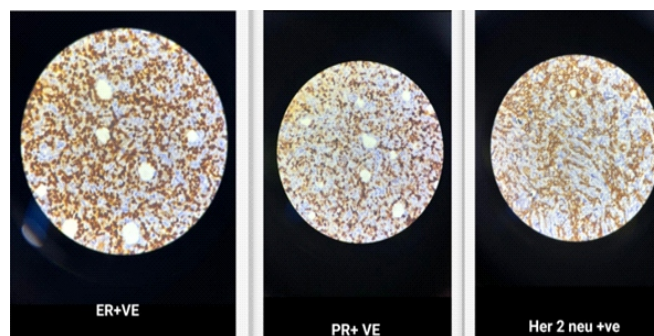


Figure 2: Hormonal receptor status male carcinoma breast

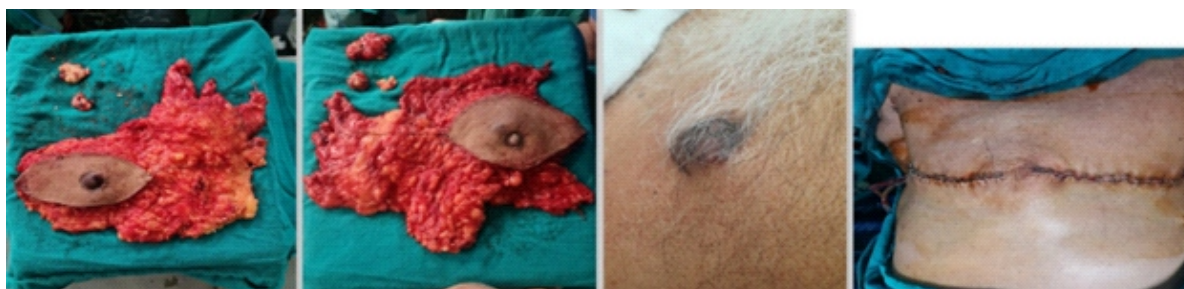


Figure 1: Male carcinoma breast

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Table 1: Patient characteristics

		Numbers	Percentage
Mean age in years		71±2.54 SD, C.I. 0.6	
BMI in kg/m ²	Less than 25	Mean 23.5±0.5 SD, C.I.0.35	11.1
	More than 25	Mean 35.5±3.0SD, C.I. 0.7	88.9
Residence	Urban	12	66.7
	Rural	6	33.3
Smoker	Yes	5	27.8
	No	13	72.2
Alcohol Use Disorder	Yes	14	77.8
	No	4	22.2
Family history of Breast cancer in 1* degree relative	Yes	3	16.7
	No	15	83.3
Family history of non-Breast cancer	Yes	4	22.2
	No	14	77.8
History of radiation to Head, Neck or chest	Yes	1	5.6
	No	17	94.4
Known history of gonadal carcinoma	Yes	-	-
	No	18	100
Known liver disorders	Yes	6	33.3
	No	12	66.7
Laterality	Right	7	38.8
	Left	10	55.5
	Bilateral	1	5.7
Histopathology	Intraductal	18	100
	Others	-	-
ER	Positive	15	83.3
	Negative	3	16.7
PR	Positive	13	72.2
	Negative	5	27.8
Her 2- neu	Positive	6	33.3
	Negative	12	66.7
T stage	T1	-	-
	T2	4	
	T3	5	
	T4	9	
Stage on presentation	I	-	-
	II	8	44.4
	III	6	33.3
	IV	4	22.3
Lymph nodal positivity on presentation	Yes	18	100
	No	-	-
Neo adjuvant chemotherapy received	Yes	10	55.5
	No	8	44.5
Upfront surgery		8	44.5
Average number of lymph nodes harvested		14	77.8
Average lymph node positivity per case (post- surgery)		4	28.6
Recurrence at 06 months post surgery		-	-

The mean age of patients in the study group was 71 years. The majority of patients were overweight, had alcohol use disorder and were from an urban background. 16.7% cases had a first-degree relative with breast cancer. 33.3% cases had a history of liver disorders (all tested positive for

hepatitis C viral infection) Moreover, the correlation was statistically significant ($p < 0.05$).

77.7% cases presented in stage II and III of the disease, and 100% cases had a positive axillary lymph node status on

presentation. 55.5% of cases received neoadjuvant chemotherapy. 83.3% and 72.2% of patients were positive for ER and PR, respectively. 33.3% of cases were positive for HER2/neu receptors. 100% cases had intraductal histopathology. Lymph node positivity in histopathology was 28.6%. None of the cases had recurrence at 06 months.

Discussion

MBC is a rare disease with poorly understood characteristics and etiopathogenesis. A delayed presentation and a dilemma in the treating physician's mind adversely affect the prognosis.

Giordano et al reported a mean age of 67 years in MBC cases. We observed a mean age of 71 years. The difference may be because of dissimilar populations at risk. They reported regional lymph node involvement in 37.7% cases, distant metastasis in 6.9% cases and breast localised disease in 41.7% cases. In our study, we had 100% involvement of ipsilateral axillary lymph nodes; hence, we did not have localised breast disease [8].

Majdouline el Fouhi et al reported a mean age of 67.7 years. They reported 40% of cases as T1/T2 and 60% as T3/T4.

They reported that 82.4% of cases had axillary lymph node involvement. We had 77.8% cases with the T3-T4 stage due to late presentation. They also reported hormonal positivity of 83%. We had ER and PR positivity of 83.3% and 72.2%, respectively [9].

Riberio et al concluded that more than 95% cases of intraductal carcinoma had the histopathological subtype. We had intraductal carcinoma in 100% of our cases [10].

Chhabra MK et al conducted a multicenter study from January 2010 to April 2017 to assess the efficacy of female breast cancer guidelines on male breast cancer patients and also assessed clinical features of MBC. They reported a median age of 59 years. In their population under study, 51% had Stage II, 25% had Stage III, 18% had stage I, 4% Stage 0, and 2% had Stage IV breast cancer. Infiltrating ductal carcinoma was the commonest histopathological subtype in their study. The differences from our study highlighted in Table 2 are perhaps due to differences in the study group's population resulting from geographical variations [11].

Gogia A et al., in their study, recorded a median age of 59 years. They found stage I in 2.6%, stage II in 13.1%, stage III in 59.3% and stage IV in 25%. Modified radical mastectomy

Table 2: Comparison of current study with published articles.

Study	Cases (N)	Mean age (years)	Family history (%)	Laterality (%)			Stage (%)					Treatment (%)			Pathology (%)		Hormonal positivity (%)			
				R	L	B	0	1	2	3	4	MRM	BCS RM/ TM Lumpectomy	NACT/PCT	IDC	Others	ER	PR	Her 2 Neu	TNBC
Chhabra M. et al [11]	106	59	1.8	-	-	-	4	18	51	25	2	92	8	18	93	7	81	74	25	1.8
Gogia A et al [12]	76	59	9.2	44.7	55.2	-	-	2.6	13.1	59	25	60	1.3	5.3	96	4	22	25	28	19
Masci et al [13]	91	65	18.7	49.5	46	4.5	-	33	38	21.9	4.4	91	9		86	14	96.7	92.3	14.2	3.2
Ram D et al [14]	27	62.6	7	58.8	42.2	-	-	18.5	66.7	14.8		100			85.2	14.8	77.8	77.8	7.4	18.5
Mukherjee A [15]	33	60	6	63.6	36.4	-	-	6.1	21.2	57.6	12.1	69.6		69.7	93.9	6.1	54.5	54.5	9	21.2
Majumdar SK et al [16]	18	60	5.5	38.9	61.1	-	-	5.5	16.7	44.4	33.3	77.7	22.2	50	83.3	16.7	83.3	83.3	33.3	5.5
Current study	18	71	16.7	38.8	55.5	5.7	-		44.4	33.3	22.2	100	-	55.5	100	-	83.3	72.2	33.3	-

R- right, L- left, B- bilateral, MRM- modified radical mastectomy, RM- radical mastectomy, TM- toilet mastectomy, NACT- neo adjuvant chemotherapy, PCT- palliative chemotherapy, IDC- infiltrating ductal carcinoma, ER- estrogen receptor, PR- progesterone receptor, TNBC- triple negative breast cancer

was reported to be the surgical procedure of choice. Estrogen receptor, progesterone receptor, and HER2/neu positivity were reported at 80% and 28%, respectively. They found 19% cases to be triple negative breast cancer, whereas we did not have any TNBC [12].

Masci G. et al., in their study, reported 4.4% bilateral disease and found that ERs were positive in 88 lesions (96.7%) and PGRs in 84 (92.3%). Only 13 (14.2%) had HER-2-positive disease. Only 3 patients (3.2%) had triple-negative disease. 33.3% of cases in our study were positive for HER2/neu receptors. We did not have any triple-negative cases in our study [13].

Ram D et al. studied 27 patients, close to 50% of whom were from the national capital. They could not identify risk factors, and a family history was positive in only 7.4% of cases. This is in coherence with a general trend observed in other studies. Stage II was the most common stage at the time of presentation. 100% of their patients underwent modified radical mastectomy. 85.2% had Infiltrating ductal carcinoma. 77.8% were hormone receptor (HR) positive. This trend is observed in the current study as well. The 18.5% figure for triple-negative cases reported by them is higher than the values reported in other studies [14].

Mukherjee et al studied thirty-three male breast cancer patients. They observed a median age of sixty years [15]. Most of their patients (87.9%) presented with a lump in the breast or axilla and were found to have stage III (57.6%). They identified obesity and alcohol as the commonest risk factors. In the current study, we have also found an association with high BMI and alcohol intake.

Das Majumdar S et al reported 18 cases of MBC and concluded a median age of 60 years. Like most studies, they reported that IDC is the most common histopathological subtype and found a positive family history in 5.5% of cases. Most of the studies have reported a positive family history of less than 10 %; however, we report a positive family history in first-degree blood relations of 16.7 % [16]

We found high BMI, alcohol intake and chronic liver disease to be major risk factors for MBC. Alcohol intake was seen in 77.8% of our cases, while 33.3% cases had a chronic liver disease. There is a scarcity of newer studies evaluating the contribution of various risk factors in the literature. Guenel P et al. reported alcohol and exposure to electromagnetic waves as possible attributable factors [17]. All patients in our study

were associated with agriculture. Moreover, agriculture-affiliated labour occupation was noted, with no history of any occupational exposure; only one patient had a history of therapeutic irradiation to the head and neck region.

We call for broader, multicentric, longer follow-up studies to establish risk factors, evaluate clinical profiles and effectively plan preventive measures against the disease.

Conclusion

Male breast cancer is a rare cancer that is often diagnosed late due to a lack of awareness. Alcohol use disorder, obesity and chronic liver disease are known risk factors. Male breast cancers are largely intraductal in type and express estrogen and progesterone receptors. Management currently is on similar lines with female breast cancer.

Conflict of interest

Nil

Funding

Nil

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Learning Points:

- Clinicians should maintain high degree of suspicion in male breast swelling.
- Males should be included in breast cancer screening programs.
- Early detection is key to successful management.