Research Article

A clinico-pathological study of malignant breast lump in a tertiary care hospital in Kosi region of Bihar, India

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ABSTRACT

Background: Breast cancer has captured attention of surgeons throughout the ages with its uncertain cause. Despite centuries of meandering and scientific enquiry, breast cancer is still one of the most dreaded human diseases. The breast is a complex structure and any unnatural change affects the body and psyche of the person. The aim of this study was to observe age distribution, clinical signs and symptoms and pathology of malignant breast lump and draw a correlation between clinical and histological diagnosis of patients presenting with breast lump.

Methods: Seventy six (76) cases of diagnosed malignant breast lump out of a total of 200 cases were included in this study. These cases were selected among patients visiting outdoor clinic of department of General Surgery in Katihar Medical College, Katihar. The selected cases belonged to different etiology, age group and sex.

Results: Maximum number of malignant tumours was encountered in the 5th decade of age group of patients, followed by in 4th decade. All cases studied were females except 2 cases which were male. The commonest sign and symptoms of presentation was painless lump in the breast followed by painful mass in the breast along with associated features of ulceration of the skin, retraction of nipple and nipple discharge. Histologically, malignant tumours were maximally observed as infiltrating scirrhous carcinoma, followed by medullary carcinoma & papillary carcinoma.

Conclusions: Breast cancer is a common cancer worldwide with varied presentation. Multimodality treatment approach is required for malignant breast lump which has shown improvement in both loco regional control and survival.

Keywords: Breast, Histopathology, Infiltrating carcinoma of breast, Malignancy, Surgery

INTRODUCTION

Breasts are an important feature of female anatomy and an integral part of reproductive system. It is a glandular organ influenced by hormones in females and composed of various structures giving rise to different types of lesions and lumps.¹ These lesions of breast can be of various types ranging from inflammatory to benign to malignant with some lesions being common in young females while other being common in elderly to older age

group. Of all the breast disorders, pain is the first common presentation with palpable breast lump being the second most common presentation.² Breast cancer is one of the commonest malignant tumours in the world and is one of the leading causes of death due to cancer in women.³ It is the leading cause of death in women aged between 35 to 54 years. One in eight women are diagnosed with breast cancer during their life time.⁴ In India the incidence of breast cancer is low but rising. India is a sub – continent with wide ethnic, cultural,

religious and economic diversity with variation in healthcare infrastructure. With rising incidence and awareness, breast cancer is the commonest cancer in urban Indian females and the second most commonest in rural Indian females.⁵ Over 100,000 new breast cancer patients are estimated to be diagnosed annually in India.⁶ As per ICMR –PBCR data, breast cancer is the commonest cancer among women in urban registries of Delhi, Mumbai, Ahmedabad, Kolkata and Trivandrum where it accounts for more than 30% of all cancers in females.⁷ It is also estimated that of all the reported cases of breast cancer, 50-70% of cases are advanced at presentation in India.⁸ If left untreated, the mean survival is about 3 years after clinical presentation and 5 year survival rate is less than 20%.⁹ This present study was undertaken with a view to see trends in various types of breast lump with special emphasis on malignant lesions in this part of Kosi region of Bihar for better understanding and comprehensive study of the disease in all parameters. The need of the hour in cases of breast cancer is health awareness, promotion of early detection by organizations in health sector and providing comprehensive multimodality approach in a protocol based manner. Also there is a need for providing support to breast cancer patients in their management as well as screening of the disease and rehabilitation of the patients.

METHODS

After prior approval from the Institutional Ethics Committee (IEC), a prospective clinico-pathological study on 200 cases of breast lump was carried out at the department of Surgery, Katihar Medical College & Hospital, Katihar over a period of three years. Out of which, 76 cases of malignant lump was found and included in this study whose diagnosis was confirmed histologically. Other benign and acute cases were excluded from the study.

Methods of collection of data:

1. Detailed history taking
2. Clinical Examination
3. Routine Laboratory investigations
4. Relevant special investigation
5. Histological examination of the tissue was undertaken & tissue was taken from the breast by biopsy, local excision of the lump or specimen from the mastectomies.

RESULTS

In this study, 76 cases of malignant breast lump were observed. In those 76 cases, majority was females 74 (97.37%) and number of males was 2 (2.63%). According to religion, number of Muslim patients was more than 40 (52.63%) as compared to Hindu patients 36 (47.37%).

Maximum no. of malignant cases was encountered in the age group of 41 – 50 yrs. (5th decade) i.e. 50%, and then

in 4th & 6th decades with percentage being 31.57% and 10.52% respectively (Table 1).

Table 1: Distribution of malignant breast tumours according to age.

Age in years	No. Of cases	Percentage
20 – 30	6	7.89
31 – 40	24	31.57
41 – 50	38	50.00
51 – 60	8	10.52
61 & above	-	-
Total	76	100.00

According to duration, maximum number of cases, 42.11% was of duration between 6 months to 1 year, followed by tumours of less than 6 months duration (36.84%). Least number of cases i.e. 7.89% was seen in those whose duration was between 1.5 to 2 years (Table 2).

Table 2: Distribution of malignant lump according to duration of illness.

Duration	Malignant tumours
<6 months	28(36.84%)
6 months – 1 year	32(42.11%)
1 year – 1.5 years	10(13.16%)
1.5 years – 2 years	6(7.89%)

Painless mass was the most common symptom found in maximum number of patients i.e. 62 (60.78%) of cases. Painful mass was present in 14 (13.73%) patients. Ulceration, retraction and nipple discharge was present in 15 (14.71%), 7 (6.86%) and 4 (3.92%) patients respectively. Some patients presented with more than one symptom, the percentage of which are as follows (Table 3).

According to parity, 36 patients (47.37%) who had more than 3 up to 6 children presented with malignant breast lump followed by 28 patients (36.84%) who had up to 3 children. Least number of cases, 4 (5.26%) were present in those who had no children (Table 4).

Table 3: Frequency of various modes of presentation of malignant breast lump.

Signs & Symptoms	Number of cases
Painless mass in breast	62(60.78%)
Ulceration	15(14.71%)
Painful mass	14(13.73%)
Retraction	7(6.86%)
Nipple discharge	4(3.92%)

Table 4: Distribution of malignant breast lump according to parity.

Parity	Malignant tumours
No children	4(5.26%)
Up to 3 children	28(36.84%)
>3 up to 6 children	36(47.37%)
>6 children	8(10.53%)

Table 5: Distribution of lump according to side and quadrant.

Site & Quadrant	Right Breast	Left Breast
UOQ	16(21.05%)	20(26.31%)
LOQ	8(10.53%)	2(2.63%)
UIQ	8(10.53%)	8(10.53%)
LIQ	-	2(2.63%)
Central	4(5.26%)	8(10.53%)
Total	36(47.37%)	40(52.63%)

UOQ – upper outer quadrant; LOQ – lower outer quadrant; UIQ – upper inner quadrant; LIQ – lower inner quadrant

According to side and quadrant, more lesions were seen in Left breast 40 (52.63%) as compared to Right breast 36 (47.37%). In both of the breast, upper outer quadrant was the most common side involved (Table 5).

Table 6: Histopathological examination showing types of malignant lump.

Lesions	Number of cases
Scirrhus	60(78.94%)
Medullary	8(10.53%)
Colloid	4(5.26%)
Papillary	4(5.26%)

According to histopathological report, most common type of malignancy observed was scirrhus carcinoma i.e. 78.94%, followed by medullary carcinoma i.e. 10.52%. Colloid and Papillary variant of breast carcinoma was present in 5.26% of cases each (Table 6).

Also, according to size, 40 patients had size of lump more than 5cm (52.63%), 34 patients had size of lump between 2.5cm up to 5cm (44.74%) and 2 patients had size of lump less than 2.5cm (2.63%). Lymph node involvement was seen in 32 cases (42.11%), out of which axillary lymph node involvement was seen in 28 cases (36.84%) and supraclavicular lymph node involvement was seen in 4 cases (5.26%). No lymph node involvement was seen in 44 cases (57.89%).

DISCUSSION

Breast cancer management has been a major challenge to surgeons in developing countries, principally due to the lack of advanced technology and late presentation of patients to the hospital.¹⁰ The incidence of malignant

growth amongst the breast lesions is fairly common with more number of cases being detected in recent years and so it warrants the need for detecting out the morbid pattern of the tumour. Breast cancer kills 376000 women a year worldwide and there are about 900000 new case annually with increasing incidence in most parts of the world and especially developing country where it is almost as common as cervical cancer, the leading female cancer in developing world.¹¹ Out of 76 cases of malignant breast lump, 74 (97.37%) were females and 2 (2.63%) were males. Numbers of Muslim patients were more than the Hindu patients in the present study in cases of malignant lump. No other religions reported any cases. But religion does not seem to have any bearing on any other clinical and pathological variables of breast cancer patients.¹²

Figure 1: Malignant breast lump with ulceration and fungation. **Figure 2: Malignant breast lump with Peau d' orange appearance of skin.**

In the present series, the maximum incidence of malignant tumour were observed in the age group of 41 – 50 yrs. (50%) which is an agreement with the observation of Hankey BF et al.¹³ The mean age of the patients in this series was 46.6 years, a similar finding to the observation of Mabula JB et al where the mean age of breast cancer patients was 45 years.¹⁴ This is lower than the age reported in western countries where the median age at diagnosis is in the sixth decade of life.^{3,15,16} This shows that there is a difference in mean age of patients of breast carcinoma in developed and the developing nation. In the present study, maximum no. of patient of

malignant tumour reported within a year i.e. 42.11% of patients reported within 6 months to 1 year of onset of symptoms followed by 36.84% of patients who presented within 6 months from onset of symptoms. Only 7.89% of patients presented late between 1.5 to 2 years. Even Bloom HJG in his series of 250 patients observed that according to duration of symptoms, maximum patients in that series i.e. 28.8% reported within one year of onset of symptoms followed by 26.4% within 1 to 2 years. This early reporting in case of malignant breast lump clearly suggests increasing awareness of patients about the disease in the developing nation over the period of time.¹⁷

In the present study, by far the most common presenting feature was painless mass in the breast (60.78%) followed by painful mass (13.73%) and associated features like ulceration of the skin, retraction of nipple and nipple discharge.

In the present series, the brunt of the breast lump was observed in the ladies having children between 3 to 6. Out of 76 patients having malignant breast tumour, maximum no. 47.37% of patients had more than 3 up to 6 children followed by up to 3 children (36.84%) and 5.26% had no children while 10.53% had more than 6 children. It has been known since longtime, that marriage and sexual function had tremendous influence in the development of the breast cancer. Macmohan B et al reported higher incidence of breast cancer in nulliparous women but an inverse correlation of breast cancer incidence with increasing parity has been repeatedly demonstrated.¹⁸ The most acceptable explanation for higher incidence of breast cancer in multipara is the fact that women of this part of country marry early & become mother early and only a very few cases are sterile. However, this observation warrants further study of this nature.

Out of 76 patients of carcinoma of the breast, 40 (52.63%), patients had left breast involvement whereas 36 (47.37%) patients had right breast involvement. This observation fully confirms to the observations of Agrawal GP et al and Tulinius H et al who also observed increased incidence of breast cancer on left side with the latter reporting 13% increased incidence of carcinoma breast to left side.^{19, 20} Out of 76 malignant breast tumours in present study, 36 cases (47.36%) were seen in upper outer quadrant followed by upper inner quadrant 16 cases (21.06%), lower outer quadrant 10 cases (13.15%) & central region 12 cases (10.52%), in that order. This data is similar to the data obtained by Muqtadir et al and Mudholkar et al who reported 53.03% and 42.05% of involvement of upper outer quadrant of breast.^{21,22} Maximal involvement of upper outer quadrant as observed in the present study was also in agreement with the results reported by Darbre.²³ The explanation for the predilection for the cancer in the upper outer quadrant lies in the fact that lymphatic drainage of the breast in this region is poor because of inadequate support and greater amount of target epithelial tissue in that region.

In the present series all cases of malignant growth were of carcinoma of the breast. Infiltrative carcinoma with fibrosis (scirrhous) was the commonest variety constituting 78.94% of the malignant lesions. Usually designated as scirrhous, it showed varying degree of fibrosis & infiltration with cords or groups of polyhedral or spindle cells with hyperchromatic nuclei. An incidence of more than 75% of scirrhous carcinoma had been reported in the recent study by Muqtadir et al and Mudholkar et al who reported 78.79% and 88% of involvement as scirrhous carcinoma.^{21,22}

10.53% of cases belonged to medullary carcinoma group in which fibrous tissue was scanty & groups of round or polyhedral cells with vesicular nuclei and abundant cytoplasm formed the characteristic picture of the lesion. An incidence of 8.6% of cases of medullary carcinoma was reported by Haque et al in cases of malignant breast lump. Also 4 cases of papillary carcinoma and colloid carcinoma (5.26%) was seen in the present study, in which there were papillary growths, cells showing considerable irregularity in, size & shape of the nuclei and hyper chromatic nuclei. Haque et al observed 1.1% incidence of papillary carcinoma which is slightly lower than the incidence in the present series.²⁴

The maximum number of lymph nodes involved was the axillary group of lymph nodes followed by two cases of right supraclavicular lymph nodes. This is in agreement with the observations of other workers.^{25,26} Axillary node is the commonest node to be involved in cases of malignant breast lump but involvement of supraclavicular lymph nodes or any other contralateral lymph nodes represents advanced nature of the disease.

CONCLUSION

Understanding the risk factors for the development of breast carcinoma is important as it provides clues to the pathogenesis and identifies patients likely to benefit from reduction of risk factors. Although breast cancer can develop in both genders, women are at greatly increased risk and breast cancer in men is uncommon. Staging of breast cancer is determined prior to any treatment to categorize patient into risk categories that defines prognosis and guides recommendations for treatment. Breast cancer treatment in modern era involves both local and regional control (surgery and radiation therapy) in addition to medical therapy for systemic manifestations.

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