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ORIGINAL ARTICLE

Five Year Experience of Breast Cancer Surgeries

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ABSTRACT

Aim: To audit the breast cancer surgeries and to establish the age groups and stage at which breast cancer patients present in our institution.
Study design: Retrospective study
Place and duration of study: Department of Surgery, Jinnah Hospital, Lahore from January 1st 2017 to December 31st 2021.
Methodology: Four hundred and seventy-one breast cancer patients were sorted out. The data included the stage of presentation of breast cancer, age at presentation, year of presentation, gender and surgeries performed according to stage of carcinoma of breast.
Results: The patient of breast carcinoma usually presents for medical help in her forties (31%) while patients presented between 18 to 86 years of age. Most patients however presented in stage III. Frequent sentinel lymph node biopsies with breast conservation surgery. All stage III breast carcinoma patients were treated with MRM and level II axillary clearance. BCS with sentinel lymph node biopsy was done for early breast cancer.
Conclusion: Carcinoma of breast presents in earlier age in Pakistan as compared to West. Despite limited resources and non-compliant patient population, we are striving to provide standard treatment to all breast cancer patients. Increase in sentinel lymph node biopsies instead of axillary clearance shows this expedition.
Keywords: Breast conservation with sentinel biopsy, Stage, Age

INTRODUCTION

Female breasts are made up of lobes that may be twelve to twenty in number. The lobes contain smaller units called lobules. These lobes and lobules are connected to lactiferous ducts. The breast adipose tissue is comprised of fibrous connective tissue framework and ligaments. A rich matrix of blood and lymph vessels and nerves supply it[1].

Carcinoma breast is the most common cancer prevalent among women not only in Pakistan but also worldwide.[2] Pakistan ranks highest amongst all the Asian countries for age standardized incidence rate (ASIR) of breast cancer. The Karachi Cancer Registry (KCR) showed ASIR of 51.7/100,000 in 1995-1997. The GLOBOCAN 2012 estimates indicated an ASIR of 50.3/100,000. The population-based Punjab Cancer Registry (PCR), of Lahore district with a population of 15 million, has shown an ASIR of 47.6/100,000 for 2010-2012[3]. The incidence of breast cancer has risen over the past few years to one in every 9 women in Pakistan[4].

Breast cancer is of various types; in situ and invasive ductal, lobular, colloid, mucinous, inflammatory, metaplastic, medullary and tubular[1]. The staging of a disease provides the exact summary of the cancer at the time of diagnosis and/or surgery. It shows how much cancer is present, its location, and throws light on important tumor characteristics. It helps in effective communication among treating surgeon, oncologist and other team members. It provides a framework for assessing and communicating prognostic information which is based on the characteristics of the tumor and disease features[5].

In advanced breast cancer modified radical mastectomy with axillary dissection/ level II axillary clearance is treatment of choice.[4] We can also do breast conservation surgery with sentinel lymph node biopsy which is clinically safe in terms of overall survival.[6] After the 1990's there has been a switch from axillary dissection with high morbidity to sentinel lymph node biopsy with lesser post-operative problems[7]. The term sentinel lymph node refers to one or a group of first lymph nodes which receive regional lymphatics and are first to receive tumor metastasis. Sentinel lymph node biopsy can be done by injecting radioisotopes or blue dyes or their combination as tracer.[8] The reasons for preferring MRM may be due to lack of awareness of equal effectiveness of MRM and BCS, fear of radiation therapy, fear of recurrence and lack of involvement of the patient in making decision. MRM done for an early stage breast cancer instead of BCS, it is rendered over treatment. Most of the women have psychological trauma, depression and anxiety regarding their body image after MRM.[9] The main role of the surgeon is to explain the options available for treatment to patient. It is the right of the patient that she should be told about reconstructive options. The patient and her family are autonomous to decide the treatment to be given after thorough discussion. In some of the foreign countries, the law has been implemented which mandates upon surgeons to describe the treatment options to the patient and her family member[10].

Despite the recent advances and changes in diagnostic and treatment modalities of breast cancer worldwide, it is difficult to follow standard international guidelines due to limited resources in Pakistan. The objective of this study was to audit surgeries performed on breast cancer patients and come up with a strategy to elevate the treatment standard to keep pace with modern world.

MATERIALS AND METHODS

This cross-sectional retrospective study was carried out at Department of Surgery, Jinnah Hospital Lahore. Data was scrutinized from the records of operation theatre from 1st January 2017 to 31st December 2021 after approval from institutional Ethical Review Board and head of institution. Sample size of 139 was calculated using OPENEPI software at 95% CI after taking frequency of anticipated analysis factor as prevalence of breast cancer one in nine[3]. Sampling was done by non-probability consecutive sampling. All breast cancer patients operated of all ages and stages were included. Patients whose data was incomplete were excluded. The data included stage of presentation of breast cancer, age at presentation, year of presentation, gender and surgeries performed at different stages. All data was analyzed with SPSS software 18. Chi-square test was applied. A p-value of ≤0.05 was considered as statistically significant. This study was approved by the hospital Ethical Review Board.

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RESULTS

The mean age was 46±12 years with range of 18 to 82 years. The patients were grouped into seven groups according to age. 1.1% patients were less than 20 years or in 81-90 years age group. 7.9% patients were aged between 71-90 years, 11.9% were aged between 21-30 years, 25.7% patients were in 31-40 years age group, 20.8% patients were 51 to 60 years old and 31.4% patients were in 41-50 years age group (Fig. 1).

The majority of patients presented in the stage III (85%), 11% in stage II, the rest 4% patients were in stage III and IV (Fig. 2).

The following table shows procedures done in past five years. 90 breast cancer surgeries were done in 2017, 115 in 2018, 102 in 2019, 82 in 2020 and 2021. Thirty two sentinel lymph node biopsies were done between 2017 and 2021 along with breast conservation surgery.Thirty fiveBCS were done in past five years (Table 1).The age of breast cancer patients was statistically significantly associated with breast cancer stage they present (p = 0.038). The maximum number of patients was in 41-50 years and presenting with stage III of breast cancer (Table 2).

The stage of breast cancer was also significantly associated with treatment given to breast cancer (p=0.000). MRM was done in stage III while BCS and BCS with SLNB were done in stage I and II (Table 3).

Table 1: Year-wise treatment given to breast cancer patients (n=471)

Year	BCS	BCS with SLN biopsy	MRM	Total
2017	9	7	74	90
2018	8	7	100	115
2019	12	6	84	102
2020	3	4	75	82
2021	3	8	71	82
Total	35	32	404	471

Table 2: Comparison of stage of breast cancer according to age

Age	Stage of Breast Cancer				Total
	I	II	III	IV	
<20	1	1	3	-	5
21-30	4	9	42	1	56
31-40	8	21	91	1	121
41-50	2	13	132	1	148
51-60	1	2	93	2	98
71-80	1	4	31	1	37
81-90	-	-	5	-	5
Total	17	50	398	6	471

Table 3: Comparison of stage of breast cancer according to treatment

Stage	Treatment given cancer patients			Total
	BCS	BCS with SLN biopsy	MRM	
I	14	3	-	17
II	21	29	-	50
III	-	-	398	398
IV	-	-	6	6
Total	35	32	404	471

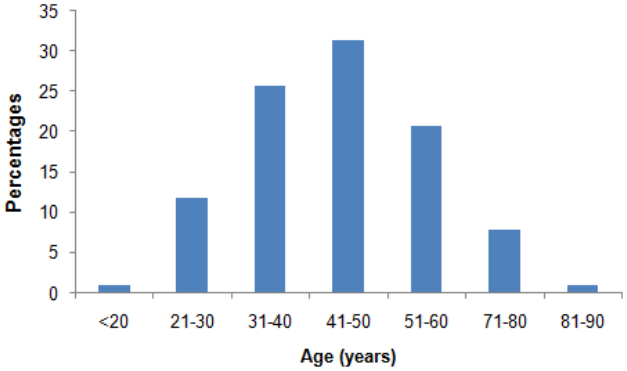

Fig. 1: Frequency of breast cancer patients according to age

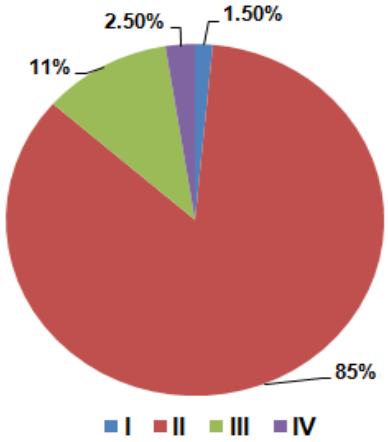

Fig. 2: Stage of breast cancer

DISCUSSION

Carcinoma of breast is a common cancer in Pakistani women; almost 99000 cases are diagnosed annually. It is also a leading cause of death in Pakistani.[4,11] Hence early identification and management can decrease this death rate caused by this disease. By rule screening should be done earlier than the age at which it presents. In West screening is done at 40 years for breast cancer as their peak age of presentation is in fifth decade of life.[12] In our population the peak age of presentation is fourth decade so screening should start at 35 years of age. The study shows patients mostly present in the forties to attain medical attention (31%) while patients presented between 18 to 86 years of age. The peak age is consistent with some previous Pakistani studies like Somroo et al[6]. This shows the effectiveness of breast awareness campaigns in past years. This finding however is inconsistent with SEER data from the West which shows fifth decade of life mostly vulnerable for breast cancer. Our finding is also inconsistent with Khaliq et al[11] in a previous Pakistani study according to which breast cancer patients of younger age group showed delayed presentation because breast pathologies are not considered malignant in younger women.

Most patients presented in stage III almost 85%.This is consistent with Khaliq et al[11] however proportion being higher than those mentionedin Ethiopia also, due to similar financial constraints the patients present in late stage.[13] This later stage presentation can be attributed to individual, socio-cultural and structural factors. The individual factors include ignorance, healing by spiritual methods and reluctance to accept support by social groups. Socio-cultural barriers include feminine sensitivity, fear of stigma and aversion to get examined by male doctors. Structural fears comprise financial constraints and apathy of medical services[14].

A downward trend can be seen in 2020 and 2021 in total number of cases itself due to surge in COVID-19 cases. This trend was also seen in USA shown by study of Smith et al[15] however it was overcame slowly later on by development f local policies. Our this study showed frequent sentinel lymph nodes biopsies with breast conservation surgery; 32 in past five years, which conflicts Waqar et al[4]which showed no sentinel lymph node biopsy was done from 1999 to 2010.However this increasing trend of sentinel lymph node biopsy is consistent with Brazilian study which shows similar trend. This trend was to decrease the post operative lymphedema which is troublesome complication of axillary lymph node dissection[16].

The morbidity is lower while quality of life is better in patients who undergo sentinel lymph node biopsy as compared to axillary lymph node dissection. ACOSOG ZOO11 trial shows axillary node dissection does not give advantage over sentinel lymph node biopsy in patients with more than two lymph node involvement

provided they have adjuvant therapy and breast irradiation.[7] So this study shows evolving trends of surgical practice in breast oncological surgery. This shows our endeavours towards advanced treatment strategy for breast cancer patients.

CONCLUSION

Breast cancer in our country presents in earlier age as compared to West. Despite limited resources and non-compliant patient population, we are striving to provide standard treatment to all breast cancer patients. Increase in sentinel lymph node biopsies instead of axillary clearance shows this expedition.

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