MORPHOLOGICAL REPORT OF BREAST CANCER OF FEMALE PATIENTS AT MMC & HOSPITAL MIRPURKHAS

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ABSTRACT: *Background: Breast cancer is still a leading cause of mortality among females in developing countries. This study was carried out to describe morphological features of breast cancer which would make a difference in the management of breast cancer in future. Methodology: This retrospective cross-sectional study was conducted in Department of Pathology, Muhammad Medical College, Mirpurkhas from January 2010 to January 2012. The entire mastectomy specimens who were come in the above mentioned duration were included in the study. The data of age, bilaterality, size of tumor, histological types and grading of tumor were recorded and analyzed. Results: Total 106 patients were studied ranging from 21-75 years with average age of 42.86 years. A most common age group year was 31-40 years with 39 cases (36.79). Infiltrating duct cell carcinoma was seen commonest pattern with 99 cases (93.39%) followed by colloid carcinoma, malignant phylloides, malignant fibrous histiocytoma, lobular carcinoma, papillary carcinoma, scirrhous carcinoma in 1 case (0.94%). There were 16 (15.09%) cases of grade I, 57 (53.77%) cases of grade II and 33 (31.13%) cases of grade III disease. Conclusion: Breast cancer is still a common problem usually presents in a middle age group. Early detection and screening along with awareness can cure such patients at early stage.*

Keywords: Stroma, Breast Cancer, Mastectomy, Tumor, Age group.

INTRODUCTION

The breasts are made up of milk-producing glands, lobules, milk ducts, and connective tissue so called stroma. Women milk is produced by cells in the lobules and moves from these sacs, through the mammary ducts, to the nipple. Most breast cancers originate in mammary ducts [1]. Blood and lymphatic vessels are found within the stroma surrounding the lobules and ducts. Blood vessels are part of the circulatory system. They supply oxygen and nutrients to and remove waste from the cells of the breast. Lymphatic vessels are part of a large network termed the lymphatic system. These vessels collect and carry fluid and cells from the tissues of the body. There are several different kinds of breast cancer. However, the majority of breast cancer cases are classified as either in situ or invasive. Both cancer types are described below. Carcinoma In Situ Lobular (LCIS) in milk-producing glands (lobules) of the breast. Tumors classified as LCIS are made up of small uniform cells that are similar to cells found in breast lobules. That also includes atypical lobular hyperplasia[1.] Lobular carcinoma in situ is most commonly found in pre-menopausal women between the ages 40 and 50 [1]. Ductal carcinoma in situ describes breast cancer that is confined to the milk ducts of the breast. Invasive lobular carcinoma develops in the milk-producing glands, lobules of the breast. ILC has the ability to spread to other parts of the body, commonly in bone, brain, liver, and lungs. Invasive ductal carcinoma is the most common type of invasive breast cancer, responsible for almost 85% of cases. IDC starts in the milk ducts and invades the surrounding tissue. Breast cancer is the most frequent malignant tumor in women. It is the leading cause of death among females. The rates of breast cancer are increasing in developed and developing countries [1]. It affects 1 in 8 women with an estimated 207,090 new cases of invasive breast cancer in U.S [2]. Globally breast carcinoma ranks first among the malignant tumors affecting females and worldwide 1 in 10 women is affected by breast cancer during their life time [3]. In Saudi Arabia breast cancer affects about 14/100,000 Saudi females [4]. In India breast cancer accounts for 19-34% of all cancer cases among women [5]. According to the Karachi Cancer Registry (KCR) breast is the commonest site of cancer accounting for one third of female cancers in Karachi, Pakistan[6]. Similarly in Lahore, breast cancer is the most common female cancer[7]. Every woman is at risk of developing breast cancer regardless of their racial or ethnic origin. The major risk factors are effect of genetics and environment, the reproductive experience, the effect of hormones and the change in immune status and host vulnerability [8]. Breast cancer is more common in nulliparous women. In western countries this disease is more common in women who have high socioeconomic status while women with low socioeconomic class present with late stage of the disease [9]. Breast tumors arise from terminal ductal lobular units and comprise of two common morphological types: ductal and lobular neoplasia. Rare types include tubuloductal, comedo, medullary and mucinous[10]. Breast cancer is a public health problem worldwide; therefore, it is difficult in prevention and early detection everywhere. Main problem is the lack of awareness about the disease and limitations in breast examination and screening programs. About 54% of the women are diagnosed in stage II, while only 16% are diagnosed in stage 1[11]. Several clinical and morphological parameters such as age, histological type, and grade of tumor, lymphatic involvement, and bilaterality have been established as the predictors of tumor behavior in patients of breast cancer. Decisions about treatment are being taken up by the clinicians based on these factors [12]. The present study was carried out to describe morphological patterns of breast cancer which would make a difference in the management of breast cancer in future.

MATERIALS AND METHODS:

A retrospective, hospital record based cross-sectional study design was done to achieve the study's objective in Department of Pathology, Muhammad Medical College, Mirpurkhas from January 2010 to January 2012. Total 106 patients of breast cancer were studied. The mastectomy

specimens obtained were fixed in 10% formalin and were examined both grossly and microscopically. The microscopically sections were embedded in paraffin wax and stained with Haematoxylline and Eosin stain. Procedure: Inclusion criteria: The entire mastectomy specimens who were come in the above mentioned duration were included in the study. Exclusion criteria*:* Those patients having metastasis in breast with primary tumor outside the breast and those cases where mastectomy specimen shows autolytic changes were excluded from the study. *Data collection method:* All histopathology records and available histopathology slides from mastectomies of female patients were reviewed using a structured compilation form to collect data regarding macroscopic, microscopic, dominant histopathological features, in addition the patient's data including age, bilaterality of lesion and clinical history was recorded. The malignancies were diagnosed according to the W.H.O nomenclature and microscopic grading was done according to the Modified Bloom Richardson Classification, in which tubular formation, nuclear pleomorphism and mitotic count were seen [13]. Data management and analysis: Data regarding age, bilaterality of the lesion, the size of tumor, prominent cellular morphology and grading were analyzed using SPSS version 11. Categorical data was expressed using proportions and percentages. Ethical consideration: Confidentiality of data was maintained throughout the study. Permissions were obtained from Muhammad Medical College hospital administration.

RESULTS:

A total of 106 cases were included during the study period. In present study, the average age of patients was 43.33± years and that ranges from 21 to 75 years. The commonest age group was 31- 40 with 39 (36.79%) followed by 20-30 years with 21 cases (19.81%), table 1.

Table-1

DISTRIBUTION OF CASES ACCORDING TO AGE (n = 106)		
Age group	**Number of Cases**	**Percentage**
21-30 years	21	19.81
31-40 years	39	36.79
41-50 years	19	17.92
51-60 years	17	16.03
61-70 years	9	8.4
Above 71 years	1	0.94
Total	106	100

Bilaterality: In present study out of 106 cases, 49 (43.39%) cases were found on the left side and 55 (51.88%) cases were found on the right side. Only 2(1.88%) cases presented with bilateral breast lump subsequently proven to be cancerous. Size of tumor: The tumor size ranged from 3 cm to 9.5 cm in the longest dimension with a median size of 6.5 cm, table 2.

Table-2: Size of Tumor (n: 106)

Tumor Size (cm)	No. of specimen	Percenage
3-4	23	21.69
5-6	20	18.86
7-8	28	26.41
9 and above	35	33.01
Total	106	100.00

Histo-morphological types: Various histological variants were observed in this study. The commonest types seen among 106 cases were invasive duct cell carcinoma (IDCC) with 99 cases (93.39%). Other morphological types found were Invasive duct cell carcinoma (comedo type) in 1 case (0.94%), colloid carcinoma in 1 case (0.94%), malignant phylloides in 1 case (0.94%), malignant fibrous histiocytoma in 1 case (0.94%), lobular carcinoma in 1 case (0.94%), papillary carcinoma in 1 case (0.94%) and scirrhous carcinoma in 1 case (0.94%), table 3.

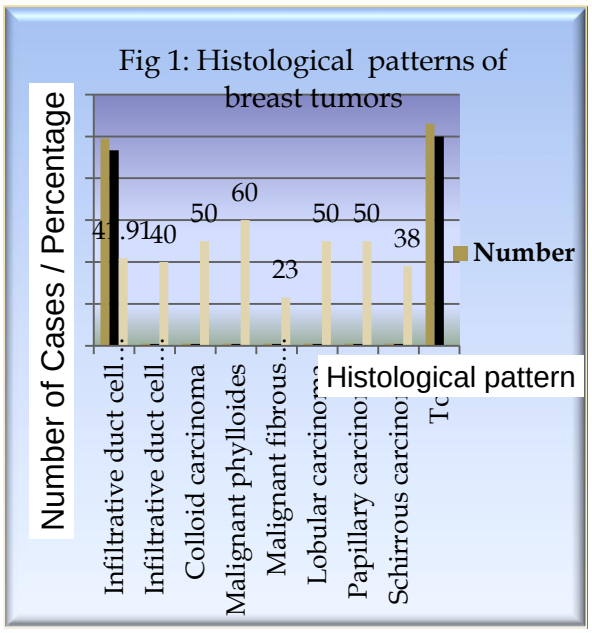
Table- 3: Histological patterns of breast tumors (n=106)

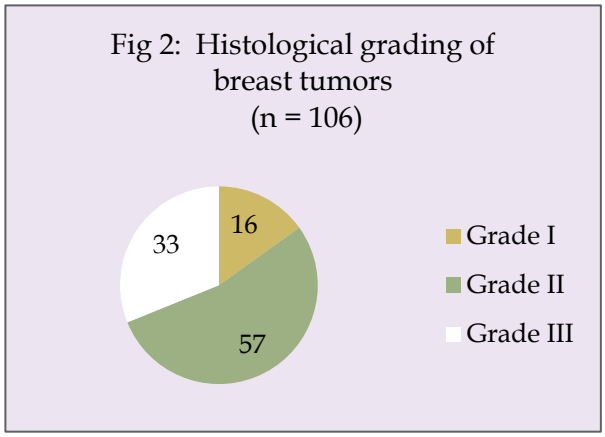
Histological pattern	Number	Percentage	Average age
Infiltrative duct cell carcinoma	99	93.39	41.91
Infiltrative duct cell carcinoma(comedo)	1	0.94	40
Colloid carcinoma	1	0.94	50
Malignant phylloides	1	0.94	60
Malignant fibrous histiocytoma	1	0.94	23
Lobular carcinoma	1	0.94	50
Papillary carcinoma	1	0.94	50
Scirrhous carcinoma	1	0.94	38
Total	106	100	

Tumor grading: Grading was done in all cases. There were 16 (15.09%) cases of grade I, 57 (53.77%) cases of grade II and 33 (31.13%) cases of grade III disease, table 4. Lymph node status: Lymph nodes were available in 38 cases out of 106 cases. Histomorphological confirmation of lymph node involvement was observed in 25 (65.78%) cases.

Table- 4

HISTOLOGICAL GRADING OF BREAST TUMORS (n = 106)		
Grade of tumor	**Number of cases**	**Percentage**
Grade I	16	15.09
Grade II	57	53.77
Grade III	33	31.13





DISCUSSION:

Breast cancer is the 2nd most common cancer in the world[14]. It is the 2nd leading cause of cancer related mortality in U.S.A, and is responsible for 13,000 death annually [15]. In Pakistan, one third of women suffer from breast cancer, and it is more common at young age in contrast to the western countries where it is more common in old age (after 60 years). This disparity could be due to increase life expectancy in the western countries. Some important etiological factors for breast cancer are hormonal, genetic and environmental factors. Age is an important factor for both tumor occurrence and management. Average age of breast cancer in Indian was found to be 46.8 years[2]. Another study conducted in Delhi hospital in India, the average age was 47.08 years. The average age of breast cancer in other studies was 47.08 years, 44.05 years, 48.08 years, 48 years [16]. In present study, the average age of breast cancer at presentation was found to be 42.86 years which seems to be earlier compared to other studies. The reason for early age of occurrence in Pakistan needs to be further studied. The most common age group was 31-40 years, followed by 21-30 years and then the above 71 years age group with 1 case. This is similar to a study conducted at another underdeveloped African subcontinent [17], likely the reason of this similarity is the same socioeconomic conditions and health awareness status. Usually, breast cancer presents with unilateral single hard lump as it was noticed in this study. About 95.27% patients presented with single unilateral brest lump[18-19]. Only 1.88% was bilateral in the present study similar to findings by other authors. Usually, the patients in our country present with a large tumor size due to delay in treatment. In present study, 21.69% patients had the tumor size of 3 cm and 33.01% had found the tumor size of 9 and above, which is almost similar to one study conducted in Pakistan [20] .The histological type, is an important prognostic factor. In our study, the common histological type found was infiltrating duct cell carcinoma. This observation is full accordance with other series reported in literature. No any author reported any other type of cancer to be more common than this one. Histological grades also have prognostic significance. Most of our tumors were found to be in grade II (53.77%) in this study and about 31.13% in grade III at presentation, which means that the disease is still presenting in a late stage and thus making treatment difficult. Other studies in Pakistan show the same results. Some Indian studies have also noticed thedisease in grade II and grade III [21-22]. The reasons of the high grade presentation could be due to lack of screening programs, awareness, fear of the disease and some psychological reasons. Many people try to ignore the disease.

CONCLUSION:

Breast cancer is still a common problem usually presents in a middle age group. Invasive duct cell carcinoma was found to be commonest histopathological type with a high grade presentation, due to lack of screening programs, which is the need of the hour. These problems can be covered by the implementation of different screening, detection and awareness programs in the country for early of tumor curative treatment.

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