

Frequency of Benign and Malignant Breast Growth Among Women of Different Age Groups in Larkana Population

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ABSTRACT

Objective: To determine the most common histopathologic variants of benign and malignant breast growths in women of different age groups of Larkana population

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Pathology, Chandka Medical College, Larkana from March 2021 to March 2023.

Materials and Methods: 210 women were recruited by purposeful sampling techniques all of whom presented with a growth in either breast or had an indication of trucut biopsy. Information regarding patient characteristics was collected in OPD. Biopsy specimens were processed and examined by a histopathologist. Various types of breast lesions were confirmed on histopathological examination and data was analyzed.

Results: Benign breast lesions were far more common than malignant ones. The most common benign lesion was found to be fibroadenoma followed by phyllodes tumor. These lesions were more common in young women below 30 years of age. Malignant tumors were more common in women above 40 years of age. The most common malignant breast tumor was found to be invasive ductal carcinoma.

Conclusion: Our findings suggest that malignant tumors are more commonly found in women above 40 years of age in Larkana population. Thus, we recommend screening programs for breast cancer in this age group.

Key Words: Breast cancer histopathology; Larkana population; Screening program

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INTRODUCTION

Breast cancer is at the moment, the most commonly occur cancer in the world. It accounts for 12.5% of all newly diagnosed cancers. In the US alone, over 287850 new cases of invasive breast tumors were diagnosed in 2022.¹ The mortality rate for breast cancer varies between 1.8 to 3.4 percent; being higher in developing countries.^{2,3}

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Unfortunately, this data in Pakistan is found to be thin far and between. Whatever the reason, this lack of data along with poor literacy and below standard health facilities indicated far greater morbidity and mortality rates.⁴ However, the little bit of research done in this regard in our country indicates the increasing burden of the disease on our health system.⁵ Recent studies have also emphasized on the importance of screening for malignant breast lesions in our society.⁶ Most studies carried out on breast cancer in Pakistan have focused on large cities.⁷⁻⁹

The stage of diagnosis of breast cancer, as in other cancers is of crucial importance.^{10,11} According to reports, approximately 35000 new cases of breast cancer are reported in Pakistan annually.¹² Unfortunately, due to multiple social, economic and literacy factors, around 89% cases of breast cancer are diagnosed at a later stage, thus increasing the mortality rate.^{13,14}

The risk of breast cancer significantly increases if a first degree relative like mother or sister have been diagnosed with breast cancer.¹⁵ Although breast cancer can also occur in males, the most significant risk factors for breast cancer however, are being a woman and getting older.¹⁶ Thus, screening has an intricate role in improving prognosis of the disease.¹⁷

In our study, we have attempted to bring data of breast diseases (malignant and non-malignant) from a small city of Pakistan which may help in focused and purposeful screening of breast lesions.

MATERIALS AND METHODS

Inclusion Criteria: Women of any age group with abnormal growth in breast

Exclusion Criteria:

- Women receiving hormone replacement therapy.
- Women with previous breast surgery
- Pregnant women

A total of 210 ladies with signs of abnormal growth in the breast were selected for the study by purposive sampling technique. All clinical information like age of patient, site of growth and clinical presentation was noted down on a proforma. Samples were obtained by trucut biopsy and preserved in 10% formaldehyde solution. After gross examination by histopathologist, the tissues were dehydrated in increasing concentration of alcohol up to 100% followed by clearing with xylene and embedding in paraffin. 0.4 μ m thick sections were taken on a glass slide and stained with standard hematoxylin and eosin staining protocol. Finally, mounting was done using DPX. Each slide was then reviewed by a histopathologist and classified in accordance with WHO classification of breast tumors. All data was analyzed using Microsoft Excel 2019.

RESULTS

Table No. 1: Distribution of Benign and Malignant Tumors by Age Groups (n = 210)

Age Group (Year)	Benign	Malignant	Total
Up to 20	21 (11.05)	0	21 (10)
21-30	59 (31.05)	1 (5)	60 (28.57)
31-40	44 (23.15)	4 (20)	48 (22.85)
41-50	36 (18.94)	11 (55)	47 (22.38)
51-60	19 (10)	3 (15)	22 (10.47)
>60	11 (5.78)	1 (5)	12 (5.71)
Total	190 (100)	20 (100)	210 (100)

A total of 210 females coming to the Breast OPD of Chandka Medical Hospital were recruited by purposeful sampling technique for the study from 10th March 2021 to 31st March 2023. Out of these 190 had lesions (90.5 %) of benign nature, whereas 20 (9.5%) were found to be malignant on histopathology. The highest number of benign lesions (N=59 – 31.05%) were found in young ladies aged between 21-30 years of age. When observed collectively, more than 50% of benign lesions were observed in ladies between 21 to 40 years of age. (Table No. 1)

Malignant growths were found to be most common in the ladies of age group 41-50 years. Collectively, 75% of malignant tumors were found to be in ladies of age groups 31-50 years. (Table No. 1)

Table No. 2: Distribution of Breast tumors according to the laterality (n = 210)

Distribution of cases by diagnosis	Right	Left	Bilateral	Total n = 210
	n (%)	n (%)	n (%)	n
Benign	78 (42.16)	86 (46.48)	21 (11.35)	185
Malignant	14 (56)	11 (44)	0	25
Total	92	97	21	210

It was observed that a slightly higher percentage of benign growths were found on the left (46.48%) as compared to the right (42.16%) while only a small number of them were bilateral (11.35%) While examining malignant breast tumors, a marked difference was observed between the two sides with the right breast being more involved (56%) than the left (44%). (Table No. 2)

Table No. 3: Histopathological Range of neoplasms in female Breast

Benign	185 (88.09)
Fibroadenoma	99 (47.14)
Benign Phyllodes tumor	57 (27.14)
Lactating adenoma	29 (13.80)
Malignant	25 (11.90)
Invasive Ductal Carcinoma NOS	13 (6.19)
Invasive Lobular Carcinoma	8 (3.80)
Mixed invasive lobular carcinoma with invasive Carcinoma NOS	3 (1.42)
Mixed Lobular carcinoma with variants	1 (0.47)
Total	210 (100)

Finally, we examined the different histopathological type of growths. We observed that the most common type of breast growth in women from Larkana was found to be fibroadenoma (47.14%) followed by phyllodes tumor (27.14%). The least common type of benign growth was lactating adenoma (29%) However, the frequency of benign growth heavily outweighed the number of malignant growths. Moreover, either of the benign tumors was more frequent than any of the malignant tumors. (Table No. 3)

In malignant breast growths, invasive ductal carcinoma NOS stands out as the most common type. It accounts for more than half of malignant lesions alone. The second most common variety of malignant breast neoplasms in this population was observed to be invasive lobular carcinoma, followed by mixed invasive lobular carcinoma with invasive carcinoma NOS and mixed lobular carcinoma with variants. (Table No. 3)

DISCUSSION

The incidence of breast cancer is ever increasing not just globally but also in Asian population.^{18,19} There is recommendation that the management and screening of breast cancer from other benign lesions should be based on data that varies from country to country. We thus

carried out this study in the city of Larkana, Sindh-Pakistan whose data regarding breast diseases is very scanty.

In our study, we first observed that the frequency of benign breast lesions is far greater than that of malignant ones. The age group most frequently developing benign lesions was quite young (21-30 years). These results are similar to studies carried out in other cities of Pakistan.^{20,21} We also observed that the commonest of benign breast growth was fibroadenoma which accounts for nearly half of all tumors of the breast in this region. Also, the second most common breast tumor in our study was phyllodes tumor. This finding is also similar to most of the regions in the world.²²

Malignant growth however were most common in middle aged women and the age group most commonly affected was between 41-50 years. Also, 75% of all malignant breast growth were found in ladies above 40 years of age. The most common malignant tumor was invasive ductal carcinoma of not otherwise specified type. This finding of ours was contrary to a study carried out in India in which the population developing malignant breast lesions was less than 40 years old on average.²³ However, our findings are similar to the US population.²⁴ The fact that we found middle aged women to be more prone to carcinoma formation may be explained by the fact that this group is also perimenopausal and the hormonal imbalance that occur in this age may well be attributed to increased risk of carcinoma formation. We thus strongly recommend screening ladies above 40 years in this population for early detection of breast carcinoma which may eventually improve survival rates.

We next observed the site and laterality of the tumors and found no significant differences between benign and malignant growths on this basis. However, there was much greater incidence of bilateral benign lesions with no bilateral malignant lesion observed. There was just one such study we found in US population which yielded results similar to ours.²⁵

CONCLUSION

From our findings we suggest that in Larkana population most benign breast growths occur in young women below 40 years of age. Whereas malignant breast lesion occurs most frequently in women above 40. We thus recommend regular screening of women above 40 years of age in this population.

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