

Clinico-pathological profile of breast lesions at a tertiary care centre in Karachi, Pakistan

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Abstract

Objective: To conduct four-year audit of breast pathology at a tertiary care center in Karachi, Pakistan.

Material and Methods: This was a retrospective study of all breast pathology specimens received over a four-year period from January 2015 to December 2018 at the Department of Pathology, Dow Medical College, Dow University of Health Sciences (DUHS), Karachi, Pakistan. A total of 257 breast specimens were received during the study period. Their reports were retrieved and data was collected, entered and analyzed using SPSS version 24.0.

Rhesults: Out of 257 patients, 246 (95.7%) patients were female and 11 (4.3%) were male. Out of 257 breast specimens, 211 (82.1%) biopsies were reported as benign and 46 (17.9%) as malignant. The commonest benign lesion was fibroadenoma, comprising 151 (58.75%) cases. Fifteen of these were bilateral. The second common benign lesion was abscess, The commonest malignancy was infiltrating ductal carcinoma, comprising 84.8% of all malignancies.

Conclusion: Our findings were similar to the findings of other studies done in the Indo-Pak subcontinent. Further studies are required to identify epidemiology of breast disease in Pakistan so that appropriate health services and policies may be planned and executed.

Keywords: Fibroadenoma, infiltrating ductal carcinoma, gynaecomastia, mastitis, breast abscess

Introduction:

Breast diseases are very common in medical practice. Breast is a target of many benign and malignant diseases, including cancer.¹ The epidemiology and pattern of breast diseases vary from country to country and from center to center.

The proximity of the breast to the outside world lends itself to early detection of disease, but unfortunately, this is not always the case. Widespread screening programs and awareness campaigns have significantly improved disease detection. Diseases affecting the breast may be classified as benign and malignant. Benign diseases include inflammatory, epithelial and stromal proliferations, neoplastic lesions and developmental abnormalities.¹ Globally, the majority of breast lesions fall into the benign category.²

Breast cancer is the most frequently diagnosed cancer in women globally³ and its incidence is increasing worldwide.⁴

The aim of this study was to conduct an audit of breast diseases at our center to compare this with other local and western studies.

Material and Methods:

Histopathology reports of all breast samples received at Histopathology Department of Dow University of Health Sciences (DUHS), Karachi, Pakistan, during the four year study period from January 2015 to December 2018 were retrieved. These included trucut biopsies, excision biopsies and mastectomies. Samples that were inadequate, autolysed or lacking relevant clinical information were excluded from the study. A total of 257 cases were found eligible to be part of

Received

Date: 7th February, 2019

Accepted

Date: 18th November, 2019

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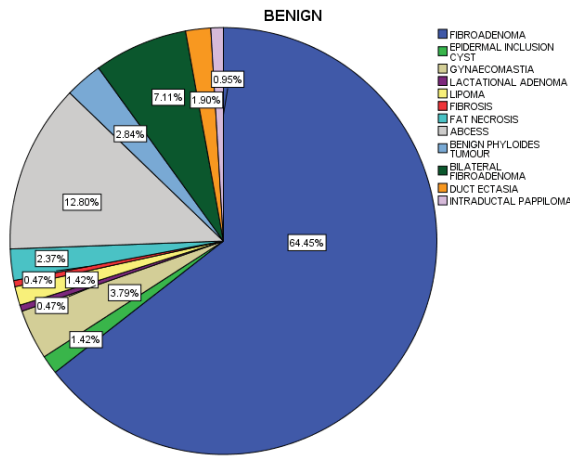


Figure 1: Distribution of benign breast disease in the biopsy specimens from both genders (n=211)

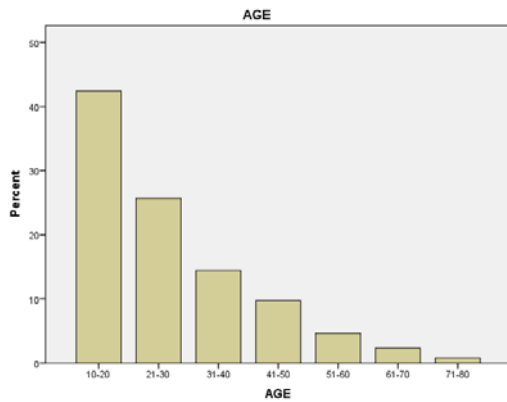


Figure 2: Age distribution of breast disease in both genders (n=257)

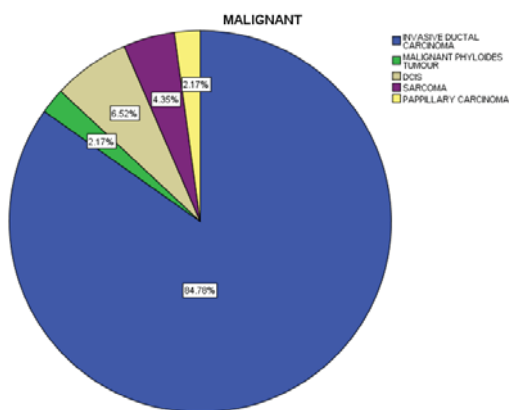


Figure 3: Distribution of malignant breast disease in both genders (n=46)

the study. Demographic data was recorded from the histopathology request forms. Breast biopsy samples were categorized as benign or malignant and further subcategorized as per specific diagnosis. Data was then entered into Statistical

Program for Social Sciences (SPSS) version 24, and analyzed.

Results:

During the 4-year study period, 257 breast specimens were received and reported at our department. Out of these, 246 (95.7%) patients were from female and 11 (4.3%) from male patients. Out of 257 cases, 211 (82.1%) biopsies showed benign lesions, and 46 (17.9%) malignant. The commonest benign lesion was fibroadenoma, comprising 151 (58.75%) all cases and 71.56% of all benign lesions. 15 of these were bilateral. The second common benign lesion was abscess, which accounted for 12.8% of benign cases, followed by gynaecomastia, which was observed in 8 (3.8%) of benign lesions (figure 1). The commonest age group affected was the second decade of life (42.4%). The incidence declined in a stepwise manner as the age rose with only 2 patients (0.89%) in the 71-80 year age group (figure 2). Of the malignant lesions, infiltrating ductal carcinoma (IDC) was the commonest, with 39 (15.2%) patients affected. There were 3-patients with Ductal Carcinoma in Situ (DCIS), two with sarcoma and only 1-each with malignant phyllodes tumor and papillary carcinoma (figure 3).

Discussion:

Few studies have been done in Pakistan regarding the spectrum of breast diseases on biopsy specimens. Two Pakistani studies, one by Aslam et al¹ and the other by Malik et al⁵ found benign breast diseases to be the commonest lesions affecting the breast. American and African studies have similar findings, which concur with our findings.^{3,6}

Our study found fibroadenoma to be the commonest lesion over all (151 cases; 58.75%). This is more or less similar to that reported in studies from Turkey, Iraq and Nigeria.⁷⁻⁹ In our study, fibroadenoma comprised 71.5% of benign breast disease. Other studies also reported similar figures regarding the proportion of fibroadenoma as a proportion of total benign breast disease. Figures of 71.3%¹ and 77.62%¹⁰ have been reported by Pakistani and Indian studies, respec-

tively. A large Pakistani study done by Siddiqui et al at one of the largest tertiary care centers in Karachi found fibroadenoma to be the second commonest lesion overall and comprising 88% of all benign tumors.¹¹ Study done in sub-Saharan Africa also reported fibroadenoma as being the commonest benign breast lesion.^{2,9}

Both Siddiqui et al and Ssemmanda et al have cited references noting predominance in frequency of fibroadenoma in Pakistani and African populations, respectively, as compared to European populations.^{10,2} This may indicate a racial predilection of the breast lesions for certain populations.

The second common benign breast disease in our study was abscess and mastitis (found in 10.5% of the total and 12.8% of the benign diseases spectrum). It is important to note that studies done in the Indo-Pak subcontinent, in particular, have findings that concur with ours.^{1,5,10-12} This suggests that inflammatory/infective disease processes are still fairly common in under-resourced countries. Studies done in Uganda and Nigeria found slightly lower figures of 3.9% and 6.4%, respectively.^{2,9} The reported incidence of breast abscess/ mastitis may not be a true reflection of actual incidence, as many abscesses are drained or diagnosed on fine needle aspiration cytology and no biopsy is done.

Gynaecomastia was diagnosed in 8 of the 11 (72%) male patients. This constituted 3.1% of all breast pathology and 3.8% of benign breast disease. Gynaecomastia is the most frequent male breast complaint.¹³ Overall incidence of gynaecomastia is reported as being 32-40%¹⁴ with one study conducted in Bristol over a period of 10 years, reporting figures of 74%.¹⁵

Benign phyllodes tumor, fat necrosis, duct ectasia, lipoma, epidermal inclusion cysts and intraductal papilloma were some of the less prevalent benign lesions found in our study (in decreasing order of frequency).

Regarding malignant breast disease, the incidence of breast cancer is increasing globally.^{4,6}

This finding is particularly true for some African, Asian, European and Latin American populations.¹⁶⁻¹⁸ Pakistani population shows prevalence of breast malignancies that is 2½ times higher than its neighbours India and Iran.¹⁹ In fact, Pakistan has the highest incidence of breast cancer in south east Asia.²⁰ The increasing trends may be attributed to changing lifestyles with more sedentary habits and increasing obesity due to lack of exercise, increased consumption of fast food and use of processed food. Also in Pakistan, newly diagnosed breast cancers are often already at an advanced stage.²⁰ The reasons for this may be lack of awareness and education regarding breast cancers, lack of access to hospital services and trained health workers specially for rural populations, no proper screening program and the last, but not the least, cultural issues like feelings of embarrassment at accessing medical care for “feminine” health issues. There is also a reliance on traditional healers and alternative medicines which delays hospital presentation.

In our study, 46 out of 257 (17.9%) cases were malignant. The majority of these were the usual type of infiltrating ductal carcinoma (IDC) (84.8%). Three cases of Ductal Carcinoma in Situ (DCIS) (6.5%), 2-cases of sarcoma (4.3%), and 1-case each of Papillary Carcinoma and malignant phyllodestumour (2.2%) were also observed. IDC has also been reported as the commonest breast cancer type by various other Pakistani, African and European studies.^{1,2,21,22}

We found 2-cases of sarcoma (4.3%) in our series. Primary soft tissue sarcomas are extremely rare, representing less than 1% of primary breast malignancies and less than 5% of all soft tissue sarcomas.²³

Phyllodes tumors are also rare tumors and account for 0.3%-1% of all breast tumors.²⁴ They are classified as benign, borderline and malignant, with the majority being benign. In our study, we found 1-benign and 1-malignant phyllodes tumors.

In our study, we found 3 (6.5%) cases of DCIS. Similar figures were reported by Malik et al's

study conducted in northern Pakistan.⁵

American figures show a marked increase in the incidence of DCIS in the past few decades, so much so, that about a fifth of all breast cancers diagnosed in the United States are DCIS.²⁵ There are no recent studies in Pakistan, so it is difficult to compare. However, due to improved screening techniques, it is quite likely that the incidence of DCIS is increasing here too.

Conclusion:

Our findings concur with those of other studies done in the region and worldwide. However, more studies are needed especially with regard to malignant breast disease, as breast cancer rates are increasing at an alarming rate and contribute significantly to female cancer mortality. Further studies will help in planning health care services and policies. Implementation of screening programs which are accessible to both urban and rural populations are urgently required.

Conflict of interest: None

Funding source: None

Role and contribution of authors:

Dr. Shaima Sultana Memon, conception and designing, collection and analysis of data, primary drafting of the paper.

Dr. Pushpa VALIRAM, conception and designing, collection and analysis of data, primary drafting of the paper, critical review and final approval of the manuscript.

Dr. M. Saleh Memon, conception and designing, collection and analysis of data, primary drafting of the paper.

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