Spectrum of Breast Diseases Following a Population Based Breast Cancer Survey

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Abstract: *Breast diseases constitute a wide spectrum of disorders and the pattern varies across countries and ethnic groups. A diagnosis of breast cancer is usually associated with anxiety among women, with the result that those who actually have it, present late leading to increased adverse outcome. Most studies on breast disease spectrum in our environment are hospital based. We therefore sought to establish the true pattern of breast diseases from our community based survey. This was a cross sectional prospective study of all women who presented for breast cancer screening between May 2009 and April 2010 at the Taimako Breast and Cervical Screening Centre, Lafia. All lumps discovered were subjected to biopsy and specimens were obtained either by needle core or following lumpectomy. All data was entered into a questionnaire and analysed using Epi info 3:5:1 software. There were two thousand and eighty five subjects who presented for screening over the period. All were females. The mean age was 34 $\pm$ 12 years with an age range of 12 to 90 years. 1900 had normal breast screening while abnormalities were detected in 185 (8.9%). Of the abnormal findings, 156 (84.3%) were benign while 29 (15.7%) were malignant. Fibroadenoma was the most frequent diagnosis in 33 (17.8%) subjects. The mean age of those with fibroadenoma was 24.6 $\pm$ 7.1 years, that of patients with breast cancer was 47.1 $\pm$ 16.4 years while that of paitents with mastitis was 28.4 $\pm$ 7.9 years. Majority of subjects who presented for screening did not have any breast disease. Of those with breast diseases, majority were benign, with fibroadenoma being the most common breast disease even though breast diseases encompassed a wide spectrum of disorders.*

Keywords: *Breast disease, Benign breast disease, Breast cancer, Common, Fibroadenoma*

I.   Introduction

Breast diseases constitute a significant proportion of surgical cases seen in both developing and developed countries making the breast one of the most commonly biopsied tissues currently(1). There is a rising trend in breast diseases worldwide, with an annual incidence of 200, 000 (2). A wide variation exist in the spectrum of breast diseases and the epidemiology of breast cancer across various countries or ethnic groups (3).Broadly speaking breast diseases may be categorized as benign or malignant. Benign breast diseases (BBD) as a group are more common than malignant disorders accounting for 90% of breast lesions worldwide (1). Breast cancer is the commonest malignancy of women in western countries and second most common in developing countries after cervical cancer (5) Breast cancer is also the most common cause of cancer mortality in women (6). Most of the studies on spectrum of breast diseases in our *environment* are hospital based. In developing countries financial constraints prevent patients from presenting to the hospital and therefore hospital based studies may not reflect the true incidence and pattern of breast diseases.We therefore sought to conduct a community based survey of breast diseases using a community based breast cancer screening program.

II.   Subjects and methods

This was a cross sectional study conducted between May 2009 and April 2010 at the Taimako Breast and cervical cancer screening centre, Lafia, Nassarawa State, North central Nigeria. Women of all age groups who presented to our centre following an initial community mobilization and sensitization on breast cancer were the subjects of our study. Informed written consent was taken from the subjects to participate in the study. The study was approved by the health and ethics committee of the Jos University Teaching Hospital. A structured questionnaire was administered to all women who presented to the screening centre to obtain demographic data, following which patients were subjected to triple assessment. All subjects had a clinical breast Examination (CBE) Those below 35 years of age had ultrasound examination of the breast while those above 35 had mammography. Where a lump was found clinically or by imaging it was subjected to biopsy. All specimen were subjected to histology. All the data was entered and analyzed on the Epi info 3:5.1 software. Frequency and percentage were evaluated for categorical data. Mean and standard deviation were evaluated for continuous data.

III.   Results

There were two thousand and ninety five subjects in the one year period who presented to our Breast Cancer Screening Centre, data was complete for two thousand and eighty five. All were females. The mean age was 34 $\pm$ 12 years with an age range of 12 to 90 years. One thousand nine hundred subjects had normal breast screening while abnormalities were detected in 185 (8.9%). Of the abnormal findings, 156(84.3%) were benign while 29(15.7%) were malignant. All malignant diseases were adenocarcinomas of the breast.   Fibroadenoma was the most frequent diagnosis in 33 (17.8%) subjects followed by mastitis in 29 (15.7%) and breast abscess in 25 (13.5%). Breast cancers tended to occur in older women (mean age 47.1 $\pm$ 16.4 years) while the most common benign disease occured in younger women (mean age 24.6$\pm$7.1). The rest are as depicted in table 1.

Demographic data and pattern of breast diseases

Diagnosis	Frequency	Percentage	Mean age ±Sd	
Abscess	25	13.5%	26.8±8.9	
Cyst	21	11.4%	31.1±12.4	
Ectasia	2	1.1%	41.5±6.4	
Fibroadenoma	33	17.8%	24.6±7.1	
Fibrocystic Change	22	11.9%	26.7±10.0	
Invasive Cancer	29	15.7%	47.1±16.4	
Mastalgia	10	5.4%	29.9±9.4	
Mastitis	29	15.7%	28.4±7.9	

IV.   Discussion

In our study, benign breast diseases were the most common breast lesions accounting for 84.3%, the vast majority of breast lesions were therefore benign. This was similar to the findings of previous studies which showed benign breast diseases to be the commonest (7,8,9,10) There has been a lot of attention on breast cancer and many women view every breast complain as due to cancer. These results should help correct this wrong perception. Amongst the benign breast diseases fibroadenoma was the most frequent diagnosis (17.8%). Although most studies show fibroadenoma to be the most common benign breast disease (11,12,13) the reported percentage is higher in these studies when compared to ours. This disparity in the proportion of fibroadenomas may be explained by the large sample size and the fact that it is a community based study. Most patients diagnosed with fibroadenoma were in the 2nd and 3rd decades of life. This finding is consistent with other studies (14,15). Mastitis (15.7%) and breast abscess (13.5%) were the second and third most common breast lesions with breast cancer (15.7%) being as equally common as mastitis. Inflammatory breast lesions are important differential diagnosis of breast cancer (16) and were relatively more common in our study as compared to others (9,10). This may reflect the young age of the study population and the high fertility rate amongst them leading to high frequency of breast pathologies associated with lactation. The high rate of inflammatory breast conditions seen at a breast cancer screening centre like this underscores the prevalence of poverty in our environment, since these patients should be in hospital receiving care. Breast cancer constituted a small percentage (15.7%) of all the breast lesions in our study. Some hospital based studies suggest that breast cancer accounts for up to a third of breast diseases (17,18) while others quote figures as high as 40% (19,20). There is scarcity of data on community based pattern of breast diseases in this environment. The apparently higher percentage may be due to the selection bias of hospital studies. There is so much negative emotional reaction towards breast cancer among women in this environment (21). The fears that breast complaints might be diagnosed as breast cancer may be allayed by our findings, as our results indicate that majority of such diseases are in fact benign. This is in keeping with findings from other studies in different environments (7,8,9,10). The mean age of diagnosis of breast cancer in our study is 47years. This is less than the mean age reported in western countries which is in the sixth decade (22). The younger age of presentation of breast cancer in our study is in keeping with studies in these environment which show that breast cancer tend to occur at a younger age in Nigerian women (23, 24). Fibrocystic disease is the most common lesion in studies from UK (25), this is in contrast to our study, in which fibrocystic diseases comprised 11.9% and was the fifth common lesion. However, some studies in Nigeria showed fibrocystic change to be the second most common benign breast disease (17,26). Mastalgia comprised 5.4% of breast lesions, which was less than most other studies. The low rate of mastalgia in this study may be due to the high rate of patronage of patent medical stores for analgesics that relieve pain. Other diseases were of much smaller frequencies. (Table 1). The pattern of breast diseases in our study which was community based differs in some aspects from hospital based studies, but both studies show that benign breast diseases account for the majority.

V.   Conclusion

We conclude therefore that breast diseases encompass a wide spectrum of disorders and that majority are benign. We encourage breast cancer screening and early presentation following discovery of any breast

anomaly. It should be of some comfort that most breast diseases are benign, and for the malignant ones, early presentation greatly enhances the prospects of cure.

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