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HISTOPATHOLOGICAL EVALUATION OF 105 FEMALE BREAST LESIONS

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ABSTRACT

Background: Among all the cancers affecting women today, breast cancer is the second commonest globally. Breast lumps are mostly benign but sometimes can be malignant. It is challenging for practitioners to determine if a breast lump is benign or malignant through clinical evaluation. The Triple Assessment criterion was developed to assist with the diagnosis, and it includes clinical examination, radiological approach i.e., mammography, and Cytopathology. **Objective:** The research aimed to analyze the histopathology of breast lumps. **Patients and Methodology:** This is a prospective study conducted at the Surgical Outpatient Department (OPD) and Pathology Department of Nishtar Medical University and Hospital Multan, for one year from February 2017 to February 2018. We randomly selected 105 patients presented with a breast lump to surgical OPD irrespective to their marital, occupational, educational, and social status. After taking informed consent, all patient underwent biopsy and sample sent to the Pathology department for histopathological evaluation. All biopsy smears were stained with Hematoxylin and Eosin stain. **Results:** A total of 105 breast tissue biopsy sample were collected, and histopathological examination was performed. Patient's age ranges from 15-75 years. The research participants were all females with a mean age of 30.4±5.9. Women between the ages of 36 years and 45 years had the highest prevalence of breast lumps at 34.2%. 82 (78%) breast lump samples were benign, only 15 cases (14.2%) were malignant. Histopathology was used for definitive diagnosis, and the results obtained showed that the benign lumps had a diagnosis of fibroadenoma in 40 (38%) 10 (9.5%) cases of duct ectasia, 8 (7.6%) cases of breast abscess and 15 (14.2%) cases of fibrocystic disease. Among cancerous lesions, 9 (8.5%) were diagnosed with invasive ductal carcinoma, 1 (0.9%) invasive lobular carcinoma, and 1 (0.9%) medullary carcinoma. **Conclusion:** We concluded that the majority of the breast lumps were benign. Fibroadenoma was the most common histopathological finding in our study. Among malignant Invasive Ductal Carcinoma was common. Benign lesions were common between 30 to 40 years and malignant lesion between 40 to 50 years.

KEYWORDS: Fibroadenoma, breast lump, histopathology, FNAC, Benign, Malignant.

INTRODUCTION

The breast tissue is made up of a specialized ductal system and stroma. It can be affected by both benign and malignant lesions. It has been observed that benign breast lesions are ten times more common than cancerous lesion.[1,2,3] Benign breast lesions are a heterogeneous group of lesions i.e., ductal abnormalities, epithelial or stromal proliferation, inflammatory lesions, and developmental abnormalities.[4,5] The common lesions responsible for benign breast lump are fibroadenoma and cystic lesion.[6] Globally, breast cancer is ranked second in women cancers with the highest mortality rate. According to the American Institute of Cancer Research (AICR), the incidence of breast cancer in the UK and US is 93.6/100000 and 84.9/100,000 respectively.[7] According to IARC (WHO), globally, 14.1 million cases of breast cancer emerged in 2012, in which almost 8 million cases were from developing countries like Pakistan. In another study done in Pakistan

2012, it was noted that the incidence of breast cancer was 23% and death rate 16.1%, so breast cancer is most frequently diagnosed in Pakistani females.[8] Through the analysis of different studies and clinical practice, we observed that in developing countries like Pakistan, India, etc. patients usually present in advanced age due to social taboo, illiteracy, and unawareness. This situation delays diagnosis and decreases the options for definitive treatment. The triple assessment criterion consisting of clinical evaluation, radiological, and histopathological assessment is needed to establish a proper diagnosis of breast lumps. Using histopathology for diagnosis is an easy and cheap method which is affordable to most women and has a high accuracy rate. While clinical evaluation provides information about the nature of the breast lump, histopathological biopsy assessment is crucial to affirm the diagnosis and ensure the most effective management of the lesion. Excisional biopsy was accepted practice in the past, but presently, needle

biopsy makes it possible to reduce surgical excision of benign breast lesions to a minimum. Fine needle aspiration is also crucial in the evaluation of a breast lump. It is cheap, accurate, and reliable. The study was performed to analyze the frequency of benign and malignant breast diseases in a tertiary care hospital for the purpose of awareness and future planning regarding breast care.

METHODOLOGY

It is a prospective study conducted at the Surgical Outpatient Department (OPD) and Pathology Department of Nishtar Medical University and Hospital Multan, for one year from February 2017 to February 2018. We randomly selected 105 patients presented with a breast lump to surgical OPD irrespective to their marital, occupational, educational, and social status. For patients with a palpable breast lump, a detailed history, and physical examination was done and entered in the proforma. Information about the procedure was provided to the patient, and they were able to give informed consent. Having approved, all the patients underwent biopsy and samples sent to the pathology department for histopathological evaluation. All types of tissue biopsies such as fine needle aspiration, lumpectomy, incisional and excisional biopsy, and mastectomy done under general or local anesthesia were included in this study. Patients with inflammatory, fatty necrosis and suppurative lesion were excluded from the study. The biopsy specimens were accurately labeled to avoid mistakes. The fixation was done using 10% Formalin. The tissue was prepared for histopathology by being made into blocks and cut into sections of 0.5-micron thickness and stained with hematoxylin and eosin. A pathologist was enrolled to analyze the slides. The results obtained were recorded in the database. Statistical analysis was performed using SPSS version 20. Continuous data was displayed as the mean ± SD, while the categorical and nominal data was presented as frequency and percentage.

4. RESULTS

A total of 105 breast tissue biopsy samples were collected, and histopathological examination was performed during the one year of study duration. Patient's age ranged from 15-75 years. All the respondents in our research were females with a mean age of 30.4±5.9. Patients between the ages of 36 and 45 years had the highest prevalence of breast lumps at 34.2 %. The prevalence of benign lesions was higher compared to the malignant ones, with 82 (78%) breast lump samples being benign, and only 15 cases (14.2%) cancerous. Benign to malignant ratio was 5.4:1. The age also differed for the different lesions with women aged between 36 and 45 years having a higher prevalence of benign lesions and those aged between 55 to 65 years showing similar results for malignant lesions. The histopathological diagnosis showing benign lesions including 40 (38%) cases of fibroadenoma, 10 (9.5%) cases of duct ectasia, 8 (7.6%) cases of breast abscess, 15 (14.2%) cases of fibrocystic disease, 2 (1.9%) cases of Phylloids tumor and 7 (6.6%) cases of Intraductal papilloma. The average age of the benign breast lesion was 29.1±3.3 years. Among cancerous lesions, 9 (8.5%) were diagnosed invasive ductal carcinoma, 1 (0.9%) invasive lobular carcinoma, 1 (0.9%) medullary carcinoma and 4 (3.8%) ductal carcinoma in-situ.

Table 1: Age distribution of patients of breast tissue smears (n=105).

Age group (in years)	Number of cases	Percentage
15-25	9	8.5%
26-35	28	26.61%
36-45	36	34.2%
46-55	18	17.1%
56-65	9	8.5%
66-75	7	6.6%
Total	105	100%

Table 2: Distribution of specimen according to nature of lesion.

Nature of lesion	Frequency	Percentage
Benign	82	78%
malignant	15	14.2%
Inadequate/ non-diagnostic/ Suspicious	8	7.6%
Total	105	100%

Table 3: Distribution of benign and malignant breast lesion by age (n=105).

Age group (in years)	Benign lesions	Malignant lesions	Suspicious/non-diagnostic/inadequate
15-25	8	0	1
26-35	25	1	2
36-45	31	3	2

46-55	13	4	1
56-65	4	5	0
66 and above	1	2	2
Total	82 (78%)	15 (14.2%)	8 (7.5%)

Table 4: Histopathological diagnosis of breast lump (n=105).

Histopathological Finding	Number of cases	Percentage
Fibroadenoma	40	38%
Duct ectasia	10	9.5%
Fibrocystic disease	15	14.28%
Phylloids tumor	2	1.9%
Breast abscess	8	7.6%
Intraductal papilloma	7	6.6%
Invasive ductal carcinoma	9	8.5%
Invasive lobular carcinoma	1	0.9%
Ductal carcinoma in-situ	4	3.8%
Medullary carcinoma	1	0.9%
Undiagnosed/ suspicious	8	7.6
Total	105	100%

DISCUSSION

Breast cancer is one of the most prevalent disease worldwide.[10] Benign tumors are the most common.[11] The benign to the malignant ratio in this study was 5.4:1, which is similar to a five years study by Mir Attaullah (5.7:1).[12] In the current study, we observed that peak incidence of benign and malignant breast lump was 36-45 years and 56-65 years, respectively, which is similar to results of some western countries.[13] In western countries, the malignancy is more common in women after menopause. But there are two studies done in the past in Pakistan reported that malignancy is more common in women less than 35 years.[14] In our research, the youngest patient presented with a breast lump was 15 years old girl, who was diagnosed fibroadenoma on a histopathological analysis similar to a study done in Nepal[15]. We found Fibroadenoma as most frequent benign lesion i.e., 38% followed by fibrocystic changes (14.28%), which is in line with research done by Khanna et al. from Banaras and Khalid et al. from Bangladesh16. Fibroadenoma is the commonest benign lesion in most of the available studies in this subject.[17,18] Total 10 cases of Duct ectasia, which is defined as inflammation and obstruction of lactiferous duct were reported in this study. It has a similar clinical presentation as cancer i.e., nipple retraction, tender swelling, and bloody nipple discharge. It is also considered as a precursor for malignancy. This breast lesion was fourth commonest lesion in our study and was seen more in the age group of 26-35 years, and Jeje et al. reported a similar result in his study.[19] Benign Phylloids tumor is rare and can reoccur after excision. In this study, there were 2 cases (1.9%) in the age group of 15-25 years showed Phylloids tumor on histopathology. Malignancy was detected in 14.2% on histopathology of 105 biopsy samples. This percentage of carcinoma is lower when compared to research done by Ellis and Cox (21%).[6] Invasive ductal carcinoma was the most common malignant lesion at 9 (8.5%). A study by Ali et al,[20] reported a higher incidence of invasive ductal carcinoma then our study. The mean age of breast malignancy was 50.3 years, which was similar to study done in Karachi (Bhugri et al. 2007) and study from India (Malik and Bharadwai 2003).[21] Role of BRCA and other genetic factors were not considered. It is challenging to diagnose and treat breast cancer in young women because they present with a breast lump at an advanced stage. There were eight biopsy samples which remained undiagnosed and suspicious in our study.

CONCLUSION

We concluded that the majority of the breast lumps were benign. Fibroadenoma was commonest histopathological finding in our study. Among malignant Invasive Ductal Carcinoma was common. Benign lesions were common between 30 to 40 years and malignant lesion between 40 to 50 years.

Authors declare no conflict of interests.

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