

Histopathological Patterns of Breast Lesions - A Hospital-Based Study

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ABSTRACT

BACKGROUND

The breast tissue consists of both specialised epithelial cells and stroma. It is a site of a broad array of pathological alterations. Both benign and malignant lesions can occur in the breast. Breast cancer is the most commonly diagnosed female cancer accounting for 20 % of female malignancies globally.

METHODS

The study was carried out to evaluate the histopathological patterns of 589 breast lesions whose biopsied breast tissues were presented at the Pathology department of Tezpur Medical College and Hospital, Tezpur, Assam, for a period of three (03) years from January 01, 2017 to December 31, 2019.

RESULTS

Out of 589 cases of breast lesions, 418 were benign breast lesions (70.97 %) and 171 were malignant (29.03 %) with a benign and malignant ratio of 2.44:1. Fibroadenoma breast was the most common benign breast disease were 264 out of 418 (63.15 %) and infiltrating duct carcinoma was the commonest malignant breast lesions, in this study there were 123 out of 171 (71.93 %). Among 123 cases of infiltrating duct carcinoma, 93 (75.61 %) were grade III ;27 (21.95 %) were grade II and 03 (2.44 %) were grade I as per Nottingham histologic score system in the study group. Metastatic lymph nodes were 89 (52.05 %) were seen in the malignant cases. Early presentation (stage 0, I and II) constituted 77 (45.45 %) while late presentation (stage III and VI) accounted for 94 (54.97 %) in the breast malignancy in the study.

CONCLUSIONS

Histopathological study plays very important role in the diagnosis, treatment and prognosis of breast lesions. This study highlighted the distinct incidences and pathological characteristics of wide range of breast diseases and affirmed that breast cancers in developing countries like India are characterised by late presentation.

KEYWORDS

Fibroadenoma, Duct Papilloma, Lipoma, Infiltrating Duct Carcinoma, Ductal Ca in Situ, Invasive Lobular Carcinoma, Lobular Carcinoma in situ, Medullary Carcinoma, Mucinous Carcinoma, Malignant Phyllodes

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BACKGROUND

The breast tissue consists of specialised epithelial cells and stroma. The breast is a site of a broad array of pathological alterations. Breast lesions are heterogeneous diseases that consist of several entities with remarkably different characteristic features. Both benign and malignant lesions can occur in the breast. Advances in imaging techniques and increased use of fine-needle aspiration cytology have greatly assisted the preoperative evaluation of breast lesions. However, in a large proportion of cases, differentiation between benign and malignant lesions still rests on histopathological examination. Therefore, histopathology plays an important role in the diagnosis of breast lesions. Histopathological patterns of breast lesions are the main criteria to assess the adequacy of treatment modalities and are a necessary component in the diagnosis, treatment and prognosis of breast lesions.¹ Moreover, diseases of the breast account for a significant proportion of general surgery workload globally making breast one of the most commonly biopsied tissues currently.

A breast lesion, whether benign or malignant, is a cause of anxiety to patients. But it is fortunate that majority of the breast lesions, proved to be benign.² The term benign breast diseases include a wide variety of breast lesions like developmental anomalies, inflammatory lesions, epithelial and stromal proliferative lesions and various neoplasms. The incidence of benign breast disease is common in the age group of 21 - 40 years.³

Breast cancer is a disease of antiquity. In about 1550 B.C., breast cancer was first documented in the Ebers papyrus of the ancient Egyptians as cited by S.M. Arab in medicine in ancient Egypt.⁴ Until date, breast cancer still remains the most commonly diagnosed female cancer accounting 20 % of female malignancies globally.^{5,6} This doesn't mean that breast cancer doesn't occur in males and children as quite a number of cases have been reported world-wide.⁷

Globally, there are significant geographical, racial and ethnical variations in the incidence of breast cancer.⁸ Reports suggest that breast cancer incidence and mortality rate is higher in developed communities when compared with developing communities.⁹

In India, breast cancer is the second common malignancy in women after cervical cancer and is detected 20 per 100,000 women.^{10,11} As per population-based cancer registry data, location wise, Bengaluru (also called Bangalore) ranks the top in India (age adjusted incidence rate or AAA per 100,000 population being 36.6 %) and in the North-East region, Aizawl recorded maximum number of cases (30.3 %).¹² Breast cancer is one of the most common causes of cancer deaths among women. In India, the incidence of breast cancer has increased by more than 20 % while mortality has increased by 145 % due to rapid urbanisation, changes in lifestyles and increased life expectancy. The risk factors for breast cancer include low parity, high age at first child birth, late menopause etc. Certain benign breast diseases are important risk factors for breast cancers.¹³ The common symptoms associated with breast cancer are breast pain, nipple discharge, palpable

masses, nipple deformities and axillary (lymph node) swelling.^{14,15} The incidence of breast cancer is highest in the age group of 41 - 60 years.

As Tezpur Medical College and Hospital, Tezpur, Assam, is a tertiary care hospital in North Assam, it occupies an important place in the field of health sector in North Assam and neighbouring states of North Eastern India and the hospital receives patients from all over these areas. No data regarding breast lesions in this region is available as yet. Therefore, we have made humble endeavour for a study in the department of Pathology of this hospital to estimate the prevalence of different histopathological patterns of breast lesions in patients attending this hospital for a period of three (03) years from January 01, 2017 to December 31, 2019.

The objective of the study was to estimate the prevalence of different histopathological patterns of breast lesions in the Pathology Department of Tezpur Medical College and Hospital, Tezpur, Assam, for a period of three (03) years from January 01, 2017 to December 31, 2019.

METHODS

The study was carried out on 589 patients of breast lesions whose biopsied breast tissues were presented at Pathology Department of Tezpur Medical College and Hospital, Tezpur, Assam, for histopathological evaluation during the period of three (03) years from January 01, 2017 to December 31, 2019. Patients with breast lesions of all age groups and both sexes were included in the study. Data regarding the clinical profile of patients was collected from the Surgery Department of Tezpur Medical College and Hospital, Tezpur, Assam. Findings and observations of various workers were compared with the present institution based descriptive study.

A total of 589 patients of breast lesions underwent biopsy interpretation in the Pathology Department of Tezpur Medical College and Hospital, Tezpur, Assam, during the study period. The breast biopsy tissues included excision biopsies, incision biopsies, core needle biopsies, lumpectomy and mastectomy tissues. The breast biopsy tissues collected for the study were sent by the Surgery Department of Tezpur Medical College and Hospital, Tezpur, Assam, fixed in 10 % buffered formalin. The breast biopsy tissues were observed grossly in the histopathology section of Pathology Department of Tezpur Medical College and Hospital, Tezpur, Assam and findings were noted in the note sheet. The biopsied breast tissues were then sectioned and processed in the conventional manner as described in the "Theory and Practice of Histological Techniques", 5th edition, 2002, edited by J D Bancroft and Marilyn Gamble. After completion of the processing, they were made in paraffin blocks and sectioned in rotatory microtome of about 3 - 5-micron thickness. The sections were stained by conventional haematoxylin and eosin staining, mounted in dibutylphthalate polystyrene xylene (DPX) and examined under microscope. Their special histopathological features were noted, and a histopathological diagnosis of the breast lesions was done

based on the World Health Organization (WHO) classification of tumours of breast.

Tumour size (T), lymph node status (N), and distant metastasis (M) (TNM) staging was done for all 171 patients having malignant breast lesions in our study by collecting the clinical data from the Surgery Department of Tezpur Medical College and Hospital, Tezpur, Assam. The TNM Staging of the studied breast malignancies was done as stage 0, stage I, stage II, stage III and stage IV with their subtypes depending on the size of the malignant tumour (T), involvement of lymph node (N) and distant metastasis (M). Stage 0: all the in situ breast cancers; stage IA: very small invasive breast tumour with no lymph node involvement; stage IB: no breast tumour or tumour smaller than 20 mm and lymph node involved in between 0.2 - 2 mm, stage IIA: either no breast tumour but 1 to 3 axillary lymph node or breast tumour smaller than 20 mm plus 1 to 3 axillary lymph node involved or breast tumour larger than 20 mm but no lymph node involved; stage IIB: breast tumour size 20 -50 mm plus 1 to 3 axillary lymph node involved or tumour larger than 50 mm but no lymph node involved; stage IIIA: any sized breast tumour but 4 to 9 same sided axillary lymph node involved; stage IIIB: any size breast tumour but chest involved; stage IIIC: any size breast tumour and any 10 or more lymph node involved; stage IV: breast tumour has distant metastasis.

Histopathological grading of all 123 infiltrating duct carcinoma in the study group was done using the Nottingham histologic score system (also termed "the Elston-Ellis Modification of Scarff-Bloom Richardson Grading System"). In this scoring system, three histopathological factors of the breast cancer were taken for consideration - (1) the amount of gland formation (differentiation or how well the tumour cells are trying to recreate normal glands), (2) the nuclear features (the degree of nuclear pleomorphism), (3) the mitotic activity. Each of the features were scored from 1 to 3 and then scores were added and the final total score was used to determine the histopathological grade of the breast cancer as Grade I - tumours having a total score of 3 to 5, Grade II - tumours having a total score of 6 to 7 and Grade III - tumours having a total score of 8 to 9.

RESULTS

The study included a total of 589 patients of breast lesions, the biopsied breast tissues of which were presented for histopathological evaluation at histopathology section of Pathology Department of Tezpur Medical College and Hospital, Tezpur, Assam during the study period. The biopsied breast tissues included incisional biopsies, excisional biopsies, core needle biopsies, lumpectomy and mastectomy tissues. Patients with breast lesions of all age groups and both sexes were included in the study.

Table 1 shows the age and sex distribution of patients with breast lesions in the study group. The youngest patient in the study was a 14-years-aged girl diagnosed as fibroadenoma breast and the oldest patient in the study was a 72-years-aged female diagnosed as infiltrating duct

carcinoma. Maximum patients with breast lesions, irrespective of sex was in the age group of 21 - 40 years (n=307; 52.12 %) in the study group.

Age Group (Yrs)	Male (Number & Frequency %)	Female (Number & Frequency %)	Total (Number & Frequency %)
11 - 20	00 (0.00 %)	25 (4.25 %)	25 (4.25 %)
21 - 30	00 (0.00 %)	166 (28.18 %)	166 (28.18 %)
31 - 40	00 (0.00 %)	141 (23.94 %)	141 (23.94 %)
41 - 50	01 (0.17 %)	125 (21.22 %)	126 (21.39 %)
51 - 60	00 (0.00 %)	101 (17.15 %)	101 (17.15 %)
61 - 70	01 (0.17 %)	23 (3.90 %)	24 (4.07 %)
70 +	00 (0.00 %)	06 (1.02 %)	06 (1.02 %)
Total	02 (0.34 %)	587 (99.66 %)	589 (100 %)

Table 1. Age and Sex Distribution of Patients with Breast Lesions in the Study Group

Out of 589 breast lesions, 587 (99.96 %) were female breast lesions and only 02 (0.34 %) were male breast lesions with a male female ratio of 1:293.5 (Table 1) in the study group. Out of the 02 male breast lesions of the study group, 01 was infiltrating duct carcinoma and the other was lipoma.

Out of 589 breast lesions in the study group, majority were seen in left breast in 299 patients (50.76 %), especially in upper and outer quadrant, whereas right breast was seen in 261 (44.31 %) breast lesions and bilateral were seen in 29 (4.93 %) breast lesions.

Table 2 shows that most of the patients of breast lesions in the study group, clinically presented as breast lumps, were 577 (97.96 %). Other common presenting complaints were as follows: axillary lymph node swelling was seen in 89 (15.11 %), breast pain in 60 (10.19 %), skin changes in 43 (7.30 %), ulceration in 40 (6.79 %), nipple deformity in 54 (9.17 %) and nipple discharge in 48 (8.15 %). Few complained more than one presentation (like breast lump with skin changes, breast ulceration with axillary swelling, etc.) in the study.

Presenting Complaints	Number	Frequency (%)
Breast lumps	577	97.96 %
Axillary (lymph node) swelling	89	15.11 %
Breast pain	60	10.19 %
Skin changes	43	7.30 %
Ulceration	40	6.79 %
Nipple deformity	54	9.17 %
Nipple discharge	48	8.15 %

Table 2. Presenting Complaints of Breast Lesions in the Study Group

Histopathology	Number	Frequency (%)
Benign breast diseases	418	70.97 %
Fibroadenoma	264	44.82 %
Fibrocystic diseases	80	13.58 %
Benign proliferative lesions	59	10.02 %
Benign phyllodes	05	0.85 %
Duct papilloma	06	1.02 %
Lipoma	04	0.68 %
Malignant neoplasms	171	29.03 %
Infiltrating duct carcinoma	123	20.88 %
Ductal carcinoma in situ	14	2.37 %
Lobular carcinoma in situ	12	2.04 %
Invasive lobular carcinoma	15	2.55 %
Medullary carcinoma	02	0.34 %
Mucinous carcinoma	03	0.51 %
Malignant phyllodes	02	0.34 %
Total	589	100 %

Table 3. Distribution of Histopathological Patterns of Breast Lesions in the Study Group

Depending on the histopathological features, histopathological reporting of 589 breast lesions in the study group were classified into two groups: benign breast

diseases and malignant neoplasms. Out of 589 breast lesions, 418 (70.97 %) were benign breast diseases and 171 (29.03 %) were malignant neoplasms with a ratio of 2.44:1. Table 3 shows different histopathological patterns of the breast lesions in the study group.

In our study, the smallest size of the benign breast lesion was 0.75 cm X 0.55 cm and the largest size of the benign breast lesion was 12.5 cm X 10.5 cm. Table 3 shows different histopathological patterns of benign breast diseases in the study group. Out of the benign breast diseases of 418 (100 %) in the study group, fibroadenoma breast was seen in 264 (63.15 %) which was the most significant lesion observed. Fibrocystic diseases of breast were seen in 80 (19.14 %) which was the second common benign breast disease in the study. Other benign breast diseases were benign proliferative lesions in 59 lesions (14.11 %), benign phyllodes in 05 (1.20 %), duct papilloma in 06 (1.44 %) and lipoma in 04 (0.96 %) in the study group. The only benign male breast lesion in the study group was lipoma.

Amongst the benign breast diseases of 418 (100 %), 298 (71.29 %), were in the age group maximum number of cases were in the age group of 21 - 40 years. Table 4 shows the age distribution of patients with different histopathological benign breast diseases in the study group. In the present study, fibroadenoma breast was more common in the age group 21 - 30 years which was seen in 154 out of 264 (58.33 %).

In our study, the smallest size of the malignant neoplasm was 3.0 cm X 2.5 cm and the largest size of the malignant neoplasm was 11.0 cm X 10.5 cm. Table 3 shows different histopathological patterns of malignant neoplasms in the study group. Out of the malignant neoplasms, 171 (100 %) in the study group, infiltrating duct carcinoma was the most common breast malignancy (n = 123; 71.93 %). The only malignant male breast lesion in the study group was

infiltrating duct carcinoma. Invasive lobular carcinoma came a distant second accounting for 15 lesions (8.80 %). Other malignant neoplasms in the study group were ductal carcinoma in situ in 14 lesions (8.19 %), lobular carcinoma in situ in 12 (7.02 %), medullary carcinoma in 02 (1.16 %), mucinous carcinoma in 03 (1.74 %) and malignant phyllodes in 02 (1.16 %).

Amongst the malignant neoplasms in the study group (n = 171; 100 %), 134 (78.36 %) cases were in the group of 41 - 60 years. Table 5 shows the age distribution of patients with different histopathological malignant neoplasms in the study group. Interestingly most of the malignant cases were common above 40 years of age and all cases were female except one in adult male of 62 years age.

All the 123 cases of infiltrating duct carcinoma of the study group were histopathologically graded using the Nottingham histologic scores system (also termed "the Elston-Ellis modification of Scarff-Richardson grading system). Among these 123 cases of infiltrating duct carcinoma, 93 accounting for 75.61 % were Grade III, while 27 (21.95 %) were Grade II and 03 (2.44 %) were Grade I (Table 6).

In our study, the smallest size of the malignant neoplasm was 3.0 cm X 2.5 cm and the largest size of the malignant neoplasm was 11.0 cm X 10.5 cm. Metastatic lymph nodes were seen in 89 (52.05 %) of the malignant cases. Staging of 171 the malignant neoplasms at presentation were done. It showed (Table 6) 26 in Stage 0 (15.20 %), 12 in Stage IA (7.02 %), 14 in Stage IB (8.18 %), 13 in Stage IIA (7.60 %), 12 in Stage IIB (7.02 %), 22 in Stage IIIA (12.86 %), 20 in Stage IIIB (11.70 %), 18 in Stage IIIC (10.53 %) and 34 in Stage IV (19.88 %). In the study, early presentation of breast malignancy (Stage 0, I and II) constituted 77 lesions (45.03 %) while late presentation (Stage III and IV) accounted for 94 (54.97 %).

Histopathology	Age Distribution in Years							Total
	11 - 20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	70 +	
Fibroadenoma	24 (5.74 %)	154 (36.83 %)	72 (17.23 %)	13 (3.11 %)	01 (0.24 %)	00 (0.00 %)	00 (0.00 %)	264 (63.15 %)
Fibrocystic diseases	00 (0.00 %)	02 (0.48 %)	27 (6.46 %)	31 (7.41 %)	19 (4.55 %)	01 (0.24 %)	00 (0.00 %)	80 (19.14 %)
Benign proliferative lesions	01 (0.24 %)	05 (1.20 %)	24 (5.73 %)	18 (4.31 %)	10 (2.39 %)	01 (0.24 %)	00 (0.00 %)	59 (14.11 %)
Benign phyllodes	00 (0.00 %)	01 (0.24 %)	04 (0.96 %)	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	05 (1.20 %)
Duct papilloma	00 (0.00 %)	01 (0.24 %)	05 (1.20 %)	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	06 (1.44 %)
Lipoma	00 (0.00 %)	01 (0.24 %)	02 (0.48 %)	01 (0.24 %)	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	04 (0.96 %)
Total	25 (5.98 %)	164 (39.23 %)	134 (32.06 %)	63 (15.07 %)	30 (7.18 %)	02 (0.48 %)	00 (0.00 %)	418 (100.00 %)





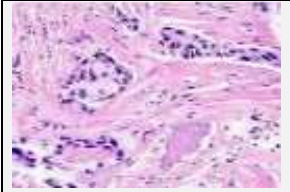
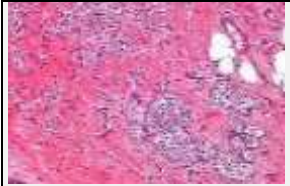
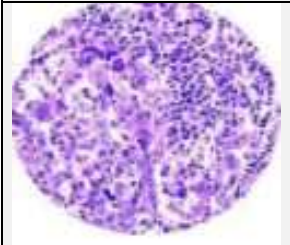
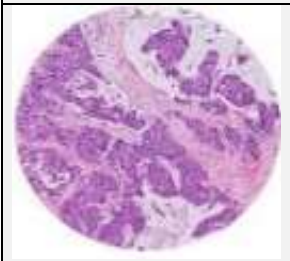
Table 4. Age Distribution of Patients with Different Histopathology of Benign Breast Diseases in the Study Group

Histopathology	Age Distribution in Years							Total
	11 - 20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	70 +	
Infiltrating duct carcinoma	00 (0.00 %)	01 (0.58 %)	05 (2.94 %)	42 (24.52 %)	51 (29.83 %)	20 (11.72 %)	04 (2.34 %)	123 (71.93 %)
Ductal carcinoma in situ	00 (0.00 %)	01 (0.58 %)	01 (0.58 %)	06 (3.51 %)	05 (2.94 %)	01 (0.58 %)	00 (0.00 %)	14 (8.19 %)
Lobular carcinoma in situ	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	05 (2.94 %)	06 (3.50 %)	01 (0.58 %)	00 (0.00 %)	12 (7.02 %)
Invasive lobular carcinoma	00 (0.00 %)	00 (0.00 %)	01 (0.58 %)	07 (4.13 %)	06 (3.51 %)	01 (0.58 %)	00 (0.00 %)	15 (8.80 %)
Medullary carcinoma	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	01 (0.58 %)	01 (0.58 %)	00 (0.00 %)	00 (0.00 %)	02 (1.16 %)
Mucinous carcinoma	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	01 (0.58 %)	01 (0.58 %)	01 (0.58 %)	00 (0.00 %)	03 (1.74 %)
Malignant phyllodes	00 (0.00 %)	00 (0.00 %)	00 (0.00 %)	01 (0.58 %)	01 (0.58 %)	00 (0.00 %)	00 (0.00 %)	02 (1.16 %)
Total	00 (0.00 %)	02 (1.16 %)	07 (4.10 %)	63 (36.84 %)	71 (41.52 %)	24 (14.04 %)	04 (2.34 %)	171 (100 %)

Table 5. Age Distribution of Patients with Different Histopathology of Malignant Neoplasms in the Study Group

Stages	Number	Frequency (%)	Early and Late Presentation		HP Grades	Number	Frequency (%)
Stage 0	26	15.21 %	77 (45.03 %)	and	Grade I	03	2.44 %
Stage IA	12	7.02 %					
Stage IB	14	8.18 %					
Stage IIA	13	7.60 %					
Stage IIB	12	7.02 %	94 (54.97 %)	and	Grade II	27	21.95 %
Stage IIIA	22	12.86 %					
Stage IIIB	20	11.70 %					
Stage IIIC	18	10.53 %					
Stage IV	34	19.88 %	171 (100 %)		Grade III	93	75.61 %
Total	171	100 %			Total	123	100 %
Table 6. Staging at Presentation of Malignant Breast Lumps and HP Grading of Infiltrating Duct Carcinoma in the Study							

Table 6. Staging at Presentation of Malignant Breast Lumps and HP Grading of Infiltrating Duct Carcinoma in the Study

	<i>Fibroadenoma Breast</i>
	<i>Benign Phyllodes</i>
	<i>Ductal Carcinoma in Situ of Breast</i>
	<i>Lobular Carcinoma in Situ of Breast</i>
	<i>Infiltrating Duct Carcinoma of Breast</i>
	<i>Invasive Lobular Carcinoma of Breast</i>
	<i>Medullary Carcinoma of Breast</i>
	<i>Mucinous Carcinoma of Breast</i>
Figure 1. Photomicrograph Showing HPE of Different Breast Lesions in the Study Group (H & E Stain)	

DISCUSSION

A breast lesion is the most common reason for seeking surgical consultation among patients with breast complaints. Its discovery is often associated with heightened anxiety due to the increased awareness of breast cancer in the general population.¹⁶ Tissue histopathological diagnosis is an important adjunct in breast lesion management. The breast tissues may be obtained for histopathological examination by excision biopsies, incision biopsies, core needle biopsies, lumpectomies and mastectomies. A thorough histopathological evaluation of these biopsy tissues of breast lesions are necessary for proper management and follow up of patients with breast lesions. Therefore, we carried the present study for histopathological patterns of total 589 biopsy tissues of breast lesions presented at histopathology section of the Pathology Department of Tezpur Medical College, Tezpur, Assam, during the study period as excisional biopsies, incisional biopsies, core needle biopsies, lumpectomy and mastectomy tissues. Patients with breast lesions of all age groups and both sexes were included in the study.

Breast lesions are more prevalent amongst females as compared to males. In our present study, out of 589 breast lesions, we found 587 (99.66 %) female breast lesions and only 02 (0.34 %) male breast lesions. Out of the 02 male breast lesions, 01 was infiltrating duct carcinoma and the other was lipoma.

In our study, the left breast with upper outer quadrant was the most commonly affected anatomical site accounting for 299 lesions (50.76 %) closely followed by right breast accounting for 261 (44.31 %) and least common was bilateral in 29 (4.93 %) breast lesions. From this observation, unilateral breast lesions constituted 560 (95.07 %). This is almost similar to other studies done by Saxena et al., 2005⁶ in India and Ekanem and Aligba, 2006¹⁷ in Berlin, where unilateral breast lumps accounted for 99.0 % and 99.2 % respectively. This is also similar to work carried out by other researchers locally and globally.

As per many previous studies, the incidence of benign breast disease is more than that of malignant breast neoplasm. In our study, we found 418 (70.97 %) as benign breast diseases and 171 (29.03 %) as malignant neoplasms. Ugiagbe E.E et al., 2011¹⁸ reported 72.5 % benign breast lesions in their study. A similar result was found by Malik R et al. 2003¹⁹ (Benign 72.97 % and malignant 27.03 %). In our study we found benign and malignant breast lesion ratio as 2.44:1, which is almost same with the study report of Choudhury M et al. 1995²⁰ conducted at Kolkata (3:1), where benign was 74.75 % and malignant was 25.25 %. Among the benign breast lesions in the study group, the commonest lesion was fibroadenoma breast in 264 out of 418 (63.15 %) which is comparable to other studies like Mansoor I (2001),²¹ Kulkarni S et al. 2009,²² UR Sing et al. 2000,²³ Malik R et al. 2003¹⁹ and Khanna R et al. 1998.²⁴

The fibrocystic disease of breast was second common benign breast disease condition, in our study 80 out of 418 (19.14 %) and majority of them belonged to fourth and fifth decade of life. The fibrocystic disease of breast occurs during ovulation and just before menstruation due to hormonal

changes, which causes the breast cells to retain fluid and to develop cyst. Though the incidence of fibrocystic breast diseases varies geographically, it is the second most common benign breast lesions in many studies from Pakistan and India (Khanzada et al., 2009 and Abdullah et al., 1999).^{25,26} Benign phyllodes represented 05 out of 418 (1.20 %) amongst benign breast lesions in our study, which is similar to that reported by Akhator, 2007.²⁷

In our study, malignant breast neoplasms were predominantly seen at the age of 41 - 60 years which are in concordance with previous study by Jack et al. 2012,²⁸ Abdul Rashid et al. 2014²⁹ and Mayun et al. 2008.³⁰ The present study clearly shows increasing age and female gender as the risk factors for breast cancer as shown by Smith MA et al., 2000.³¹

Histomorphological patterns of breast cancer as an important prognostic factor have been well documented. Studies have shown that patients with infiltrating duct carcinoma of no special type (NST) have a poorer prognosis when compared with other types of breast cancers. In our study, infiltrating duct carcinoma was the most prevalent malignant breast lesion. This encountered 123 out of 171 (71.23 %) which was the most prevalent histopathologically encountered. This accounted for 71.93 % of all breast malignancies. This finding is similar with the finding of Sangeeta K and Ila MV, 2009. Ekanem and Aligba, 2006¹⁷ in Benin City reported that infiltrating duct carcinoma constituted 75.0 % of breast cancer. Similarly, Dauda et al., 2011³² reported that 78.8 % of all breast cancers was infiltrating duct carcinoma. Majority of the 123 cases of infiltrating duct carcinoma of the study group were histopathologically Grade III which was seen in 93 (75.61 %), while Grade II in 27 (21.95 %) and Grade I in 03 (2.44 %) as per the Nottingham histologic score system (also termed "the Elston-Ellis Modification of Scarff-Richardson grading system). The histopathologic grade of a breast cancer is said to correlate with 5-years survival rate and higher histopathologic grades are associated with poorer survival rate.³³ The combination of moderate-to-high grade lesions in our studied infiltrating duct carcinoma and larger size of tumours means that the morbidity and mortality of breast cancer patients will be high in our environment, though no study on mortality of breast disease patients have been done locally.

In the present study, invasive lobular carcinoma came a distant second accounting for 15 out of 171 (8.80 %). It is almost same as per Bane AL et al., 2005³⁴ that reported incidence of invasive lobular carcinoma ranges 0.6 to 20 %. This again, indeed is comparable with similar reports by Dauda et al., 2005³² and Nggada et al., 2008³⁵ where it constituted 6.7 % and 6.6 % respectively.

Ductal carcinoma in situ has become a formidable clinical challenge due to its increasing incidence. In this study ductal carcinoma in situ accounted for 14 (8.19 %) of all breast cancer cases. Similar report by Nggada et al. 2008³⁵ in Maiduguri, North Eastern Nigeria and Kene et al. 2010³⁶ in Zaria, North-Western Nigeria revealed that ductal carcinoma in situ constituted 6.0 % and 3.0 % respectively. For several decades it has been accepted that ductal carcinoma in situ constitutes a non-obligate precursor of infiltrating duct

carcinoma.³⁷ High grade ductal carcinoma in situ is often of solid architecture and doesn't show polarisation of cells. Usually there may be central (comedo type) necrosis with or without associated micro calcification.³⁸ We observed similar histopathological features in our studied ductal carcinoma in situ breast lesions without calcification.

Incidence of medullary carcinoma breast in our study were 02 (1.16 %) compared to 0.7 % of study by Park I Kim J et al., 2013.³⁹ A predominantly syncytial growth pattern in more than 75 % of the tumour area, circumscription with pushing margin, moderate to marked lymphocytic infiltration was the observation made in this study, typical of medullary carcinoma breast.

In our study, we found the smallest size of the malignant neoplasm was 3.0 cm X 2.5 cm and the largest size of the malignant neoplasm was 11.0 cm X 10.05 cm. Metastatic lymph nodes were present in 89 (52.05 %) of the malignant cases. As indicated by the size of the malignant breast lesions in the result, most patients presented with large sized tumours and metastatic lymph nodes, may indicate an advanced stage of disease in most breast cancer cases. Our study showed that late presentation (stage III and IV) accounted for 94 (54.97 %) of breast malignancies. This finding is almost similar to other researchers like Osima and Dongo et al., 2012⁴⁰ and Anyanwu et al., 2011⁴¹ reported 67.0 % and 64.0 % respectively. The reason for the late presentation of breast cancer in our study was partly attributed to poverty, ignorance, alternative treatments and psychological fear that mastectomy may interfere with their womanhood.

CONCLUSIONS

We studied 589 cases of breast lesions histopathologically. Histopathological study of breast lesions plays an important role in diagnosis, treatment and prognosis of breast lesions. This article highlighted the distinct incidences and histopathological characteristics of wide range of breast diseases. The study emphasizes the importance to recognise and treat benign breast lesions at an early stage and distinguish them from in situ and invasive breast cancers. All breast lesions should be seriously examined. Identification of benign breast lesions like duct ectasia, sclerosing adenosis and granulomatous mastitis is important as they further develop into malignant lesions. The study also affirms that breast cancers in developing countries like India are characterised by the late presentation. In our environment most breast cancer cases present late due to poverty, lack of awareness, alternative treatments and psychological fear that mastectomy may interfere with their womanhood. As this was a hospital-based study, it might not reflect the exact scenario of the population at large. The need of hour is to conduct breast cancer screening programs and basic training and motivation of the woman to report to doctors at an early stage in case any breast lump is noticed on palpation which, in turn, can reduce the morbidity and mortality associated with breast cancers.

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