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Original Research Paper

Medical Science

STUDY OF HISTOMORPHOLOGICAL SPECTRUM OF BREAST DISEASES IN A TERTIARY CARE CENTRE OF MUMBAI

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ABSTRACT

Introduction: Breast Cancer is the most common cancer in women worldwide, comprising 16% of all female cancers.[1] In India, cancer of breast has overtaken cancer of cervix. [2] The mortality rates for breast cancer in India are high in comparision to its incidence rates. A poor survival may be largely explained by the lack of or limited access to the early detection services and treatment. [3]

Objective: The present study endeavours to analyse histomorphology of various breast diseases over a decade retrospectively as well as prospectively in all age groups at a tertiary care centre in Mumbai.

Materials & Methods : All the breast tissue specimens received in surgical pathology section of the Pathology department over a 10 year 10 month period were included in this study. Retrospectively, the information and data from clinical records was collected and analysed. Prospectively received breast tissue specimens were processed, stained and evaluated for histomorphology. Gross features and clinical data were also noted.

Results: Breast lesions constituted 1.66% of all the surgical pathology specimens over a period of 10 years 10 months. Majority of the tumors, 68.3% were benign. Fibroadenomas was the commonest breast lesion followed by carcinomas (31.7%). Inflammatory lesions were the second most common benign breast lesions (10.3%). Gynaecomastia was the commonest breast lesion in males. Carcinomas in our study presented at younger age as compared to that in the western literature.

Conclusion: Breast carcinomas in our population presents as locally advanced cancer, with predominance of higher histological grade and higher stage in view of lack of or limited access to the early detection services and treatment.

KEYWORDS : Breast Cancer, Histomorphology.

INTRODUCTION

Breast tissue is a modified sweat gland which exhibits a wide spectrum of pathological lesions, usually presenting as palpable masses ranging from inflammatory, non-inflammatory, non-neoplastic and neoplastic lesions.[4] Breast carcinoma ranks first amongst the malignant tumors affecting females in various parts of the world.[5] In India, cancer of breast is the most common cancer among women. The mortality rates for breast cancer in India are high in comparision to its incidence rates.[3] Pathological examination is necessary to establish the diagnosis and differentiate benign from malignant lesions in view of differing prognosis.[6]

AIMS & OBJECTIVES

This study aimed to classify various types of breast lesions and thus analyse the spectrum of breast diseases. It also aimed to study the frequency of breast diseases in different age groups and genders. Thus, the changing trends of breast lesions can be assessed using the data studied.

MATERIALS & METHODS

This study was performed in the department of pathology in a general teaching hospital & tertiary referral healthcare centre in Mumbai. This study was conducted for the period of 10 years & 9 months. It was a prospective and retrospective study. All types of breast tissue specimens ranging from core biopsies to lumpectomies to mastectomies were included in this study. The clinical data recorded was age, sex, site of lesion, size of tumor, duration of disease etc. The gross findings recorded were size, circumscription, encapsulation, extent of lesion,appearance on cut surface i.e solid or cystic nature , presence of areas of hemorrhage or necrosis and enlarged lymphnodes. Microscopically, histomorphologic evaluation was done as regards type of lesion, histologic grade, lymphnode status etc. All the above assimilated data was collected and analysed to find the incidence and frequency of lesions.

Table 1: Sex Distribution of Breast Lesions.

	Females	Males	Total
Benign	624	29	653
Malignant	300	04	304
Total	924	33	957

Table 2: Spectrum of Benign Breast Lesions

Benign Lesions of Breast	Total cases	% of total cases	% of benign lesions
Fibroadenoma	453	44.61	63
Inflammatory Lesions	99	10.34	12.26
Phyllodes(Benign & Intermediate)	24+12= 36	3.76	5.73
Gynaecomastia	29	3.03	4.6
Fibrocystic Disease	24	2.5	3.8
Hamartoma	11	1.14	1.75
Duct Ectasia	10	1.04	1.59
Intraductal Papilloma	7	0.73	1.11
Tubular Adenoma	7	0.73	1.11
Sclerosing Adenosis	6	0.62	0.95
Virginal Hypertrophy	5	0.52	0.79
Fibroadenomatoid Mastopathy	4	0.41	0.63
Galactocele	4	0.41	0.63
Fat necrosis	4	0.41	0.63
Adenomyoepithelioma	3	0.31	0.48
Blunt Duct Adenosis	2	0.2	0.31
Benign Spindle cell Neoplasm	1	0.1	0.15
Lipoma	1	0.1	0.15
Accessory Breast	1	0.1	0.15
Columnar cell change	1	0.1	0.15
Total	653	68.3	100

Table 3: Maximum incidence of a Benign breast lesion in a particular age group.

Lesion	Maximum distribution in Age range
Fibroadenoma	350 cases in age range of 11-30 years
Inflammatory lesions	71 cases in age range of 21-40 years
Phyllodes Tumor	23 cases in age range of 31-50 years
Gynaecomastia	24 cases in age range of 11-30 years
Virginal Hypertrophy	5 cases in age range of 11-20 years

Table 4: Distribution of malignant breast lesions.

Histological type	Number of cases	% of total cases	% of malignant lesions
Invasive duct carcinoma	246	25.7	80.27
Invasive Papillary carcinoma	31	3.23	10.54
Lobular carcinoma	12	1.25	1.36
Mucinous carcinoma	4	0.41	1.0
Malignant Phyllodes	3	0.31	0.68
DCIS with Microinvasion	2	0.2	0.68
Poorly differentiated carcinoma	2	0.2	0.68
Metaplastic carcinoma	2	0.2	0.68
Invasive micropapillary carcinoma with large intraductal component	1	0.1	0.34
Paget's Disease	1	0.1	0.34
Total	304	31.7	100

Table 5: Maximum incidence of a Malignant breast lesion in a particular age group.

Lesion	Maximum distribution in Age Range
Invasive ductal carcinoma	129 cases in age range of 41-60 years
Invasive papillary carcinoma	17 cases in age range of 51 to 70 years
Invasive Lobular carcinoma	5 cases in age range of 51-60 years

OBSERVATIONS & RESULTS

Total 957 breast lesions were received in the department of pathology over the study period which accounted for 1.66% of the total specimen received for histopathological examination. Of these benign breast lesions were 653(68.3%) and malignant breast lesions were 304(31.7%). Study by Chaudhari et al over a period of 10 years found incidence of benign breast lesions was 74.1% and malignant breast lesions was 24.44%. [7] We received 282 mastectomy specimens(29.46%), 596 lumpectomy specimens(62.27%) and 79 tissues(8.25%) labelled as core biopsies, abscess wall scrapings of paraffin blocks for review. Male patients accounted for 4% of all breast lesions, remaining breast specimens were of female patients (96%). 4 % of lesions in male breast were malignant. Fibroadenoma was the most common breast lesion comprising 44.6% of total breast lesions and 63% of all benign breast lesions similar to the findings in a study done by Chaudhari et al. (7). Majority of fibroadenomas were seen in the age range of 11-30 years with few cases in the age range of 31-50 years and none in the age of 10 years & below and 51 years and above. It is a very common benign breast lesion occurring in patients between 20-35 years of age.[8]. Majority cases of phyllodes tumor were seen in the age range of 31- 50 years with few cases in the age of 11- 30 years. Phyllodes tumors account for 0.3 to 1% of all primary breast tumors and 2.5 % of fibroepithelial breast lesions.[9] Gynaecomastia was seen in young males in age range of 11- 30 years. All cases of virginal hypertrophy were in the age range of 11-20 years. Inflammatory lesions were seen in patients below 50 years of age. The incidence of malignant breast lesions in our study was 31.7%which was similar to the incidence(30.01%) in a study conducted by Naseer Ahmed et al. [10] The commonest malignant breast lesions encountered were Invasive duct carcinoma(246 cases i.e 25.7%) similar to the incidence (29.3%) in a study bf Naseer Ahmed et al.[10]. This was followed by Invasive papillary carcinoma and Lobular carcinoma. 3 cases of malignant phyllodes and 2 cases of metaplastic carcinoma were identified. Malignant lesions were commonly encountered in 3rd to 6th decades of life. Majority of IDC's were seen in 4th decade of life. Invasive papillary carcinomas were seen more in 5th decade of life, Invasive lobular carcinomas were seen more commonly in the elderly i.e 6th decade of life. Majority of the Invasive duct carcinomas were of NOS(not otherwise specified types(226 out of 246). Majority cases of IDC grade I&II were seen in age group of 41-50 years while majority cases of IDC grade 3 were seen in the age group of 31-40 years. Majority of the tumors were in the size range of 2-5 cms. Tumor location was more common in the upper outer quadrant (35.1%) and least common in the lower inner quadrant. Nipple discharge was seen in 14 malignant conditions and 11 benign breast lesions. Benign lesions with nipple discharge included 5 cases of Intraductal papilloma. Other causes included chronic granulomatous mastitis, Duct Ectasia, Fibrocystic change, Adenosis tumor etc. Lymphovascular emboli were seen in 86 cases and lymphnode metastasis was seen in 47 cases.

Summary & Conclusion

Breast lesions were more common in females than males. Benign breast lesions are more common than malignant breast lesions. Fibroadenomas were usually seen in the young and child bearing age group. Phyllodes tumor was more common in middle aged(31-40 years) females. However, one case of fibroadenoma was seen in fourth decade while one case of phyllodes was seen as early as second decade of life. Carcinomas were the second most common breast lesions. Infiltrating duct carcinoma is the most common breast malignancy. Grade II IDC's were more common than grade I & grade III IDC's. Majority of breast malignancies presented when they were in size range of 2-5 cms thus signifying that breast cancers were bulky and presented at an advanced stage in our population. Gynaecomastia was the commonest male breast lesion. It was encountered in the second decade of life more commonly. The incidence of malignancy in male breast is uncommon with Invasive papillary carcinoma being the most common histological variant. In our study the age at presentation for carcinomas is found to be younger as compared to that in the western literature. We found a higher incidence of locally advanced, higher stage and higher histological grade breast cancers in our study population.

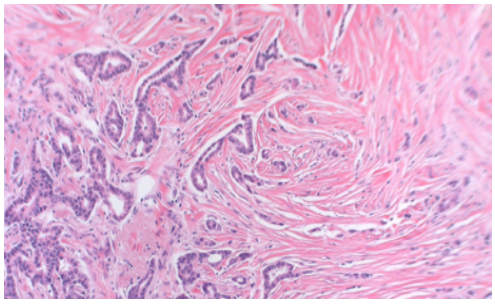


Image 1- Grade 1 IDC: Tubule formation > 75%

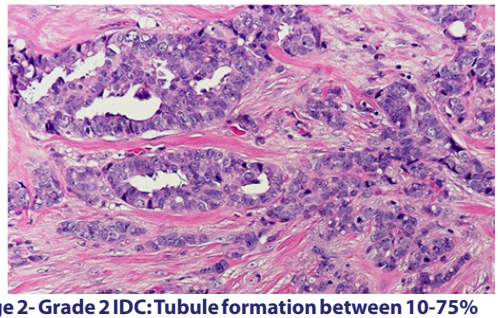
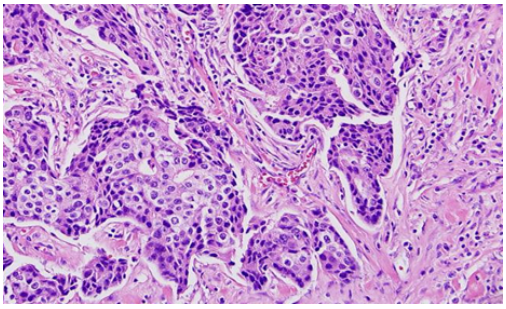


Image 2- Grade 2 IDC: Tubule formation between 10-75%



Grade 3 IDC: Tubule formation < 10%

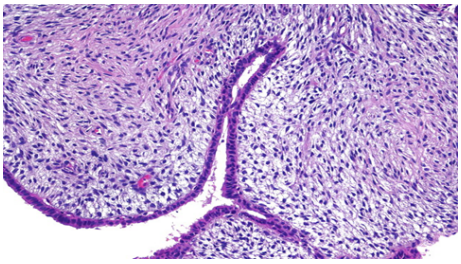


Image 4- Benign Phyllodes Tumor

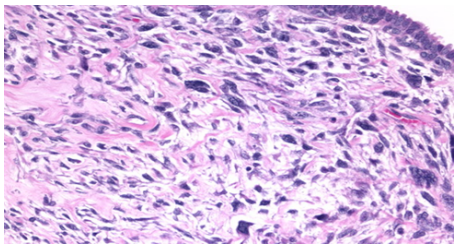


Image 5-Malignant Phyllodes tumor

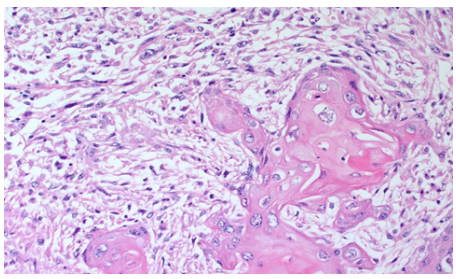


Image 6- Metaplastic Carcinoma

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