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HISTO PATHOLOGICAL SPECTRUM OF BREAST LESIONS IN A TERTIARY HOSPITAL, SOUTH INDIA

Pathology

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ABSTRACT

The aim is to analyze and categorise the breast lesions, their distribution , histo pathological features along with Grading and Staging of malignancies of Breast.

There were 1037 breast lesions with the incidence as 5.9% of the total biopsies. The Benign lesions were 47.2% , malignancies 35.4% and non neoplastic lesions 12.3%. Females predominated by 97% and males were 3% . In the males, the incidence of gynaecomastia were 79.2% whereas malignancies were 14.3%. Infiltrating ductal carcinoma- not otherwise specified (IDC- NOS) represented 277 cases (82.3%) .TNM staging for 248 malignancies showed majority falling in Stage II A(32.7%). Grading revealed majority presenting as Grade II(59.3%). Her 2/neu positivity was 35.96% which correlated with the Grade and ER/ PR status thereby affecting the survival.

KEYWORDS

Breast lesions, Category, Staging and Grading ,Malignancies

INTRODUCTION:

Studying the disease patterns will prepare the medical community for the emerging and potential challenges.

Globally, breast carcinoma ranks first among the cancers affecting women. In India, Carcinoma Breast is the second most common malignancy after Carcinoma cervix . India reports roughly 100,000 new cases of Breast Carcinoma annually facing a potential threat over the next decade. Differences in the incidence, pathology, distribution, associated precursor lesions and mortality of breast cancer may be related to genetic background, socioeconomic status, life style, and so on.

AIMS:

The main purpose of the study is to analyze the histo pathological spectrum of breast lesions , their distribution along with the Grading and Staging of malignancies.

MATERIALS & METHODS:

A retrospective hospital record based study was adopted and all histopathology records were analyzed. The core material comprised 1037 breast lesions reported during a two year period from January 2008 to December 2009 in the Institute of Pathology. Type of specimens included 96 Trucut, 29 wedge and 20 incisional biopsies , 26 lumpectomies , 20 Simple mastectomies, 261 Modified Radical mastectomies (MRM), 3 bilateral MRM cases and 4 revision MRM cases.

Data regarding the type of specimen, age, laterality of lesions, distribution of male breast lesions and macroscopic features were studied.

Surgical specimens were subjected to meticulous gross and microscopic examinations.

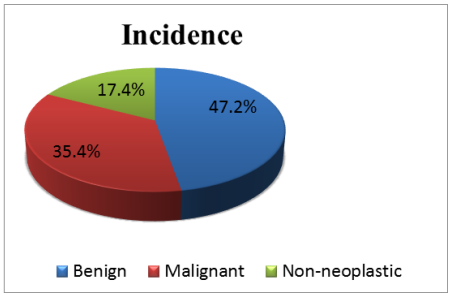
The specimens were fixed in 10% neutral buffered formaldehyde. Extensive sampling was done followed by processing and paraffin blocks (number of blocks depending on the size of the tumor) were made. Histologic Sections (5 to 6 µm) were stained with Hematoxylin and Eosin and features such as tumor size, tumor type, tumor grade, lymph node status, Stage at diagnosis, ER and progesterone receptor (PR), and HER2 neu receptor status were analyzed.

Ethical clearance for conducting this study was obtained from the Institutional ethics committee. Microsoft excel was used for the statistical analysis.

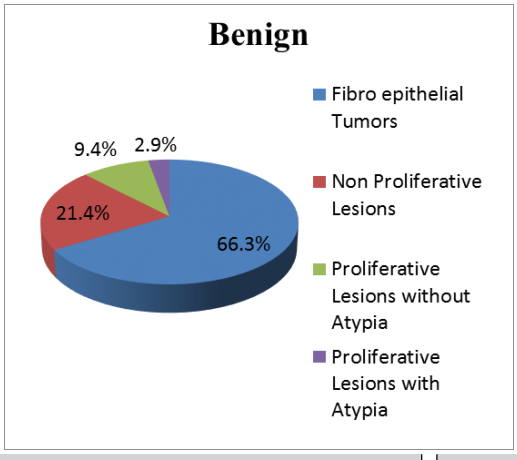
Pathology type was based on the 2012 WHO classification of tumors of the Breast. Histology grade was based on the Nottingham Combined Histologic Grade, known as Elton-Ellis modification of Scarff-Bloom-Richardson grading system. Clinical staging of breast cancer was done according to the TNM Staging.

RESULTS:

The incidence of Breast lesions were 5.9% of all the total biopsies received . The Benign breast lesions were 47.2% , malignancies were 367 cases(35.4%) and non neoplastic lesions were 17.4 % .



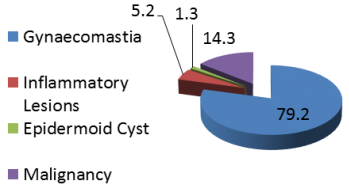
Of the Benign lesions, Fibro epithelial tumors constituted 325 cases (66.3%). Fibroadenoma was the commonly encountered lesion 276 cases (56.3%) , Phylloides tumors constituted 10%(benign 41 cases and borderline 8 cases) and fibro cystic disease(FCD) were 73 cases. FCD presented with adenosis in 17 cases, with papilloma in one case, with usual ductal hyperplasia in 7 cases and along with fibro adenoma in 19 cases. Sclerosing adenosis was seen in one case. Non proliferative lesions were 105 cases (21.4%), proliferative lesions with out atypia were 46 cases (9.4%) and proliferative lesions with atypia were 14 cases (2.9%). Inflammatory lesions were 66 cases (17 abscesses, 10 cases of Granulomatous mastitis, 29 cases of Non specific mastitis, 9 cases of foreign body granuloma and 1 case of Cysticercosis



Regarding distribution of Breast lesions, females predominated by 356 cases(97%) and males by 11 cases (3%).

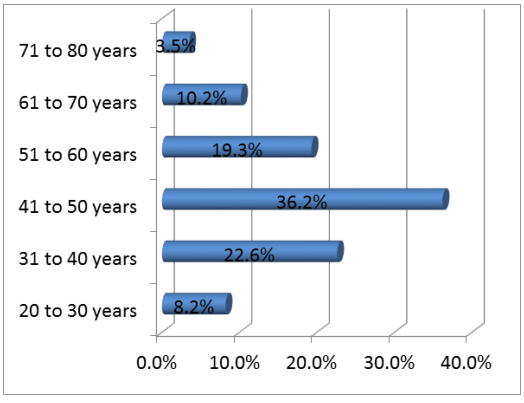
In the males, gynaecomastia contributed to a maximum of 79.2%, inflammatory lesions were 5.2%, epidermoid cyst was seen in a patient (1.3%) whereas malignancies were 14.3%.

MALE LESIONS

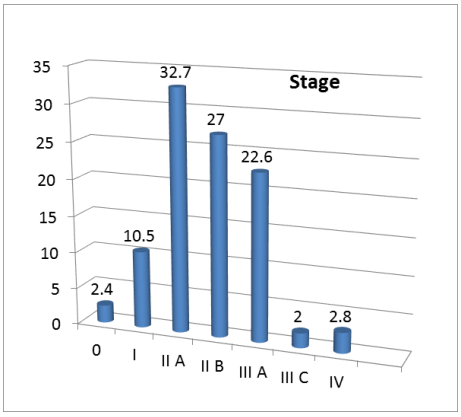


IDC – NOS was the most common malignancy occurring between 23 to 80 years with the peak incidence in the fifth decade as 36.2%. The incidence varied from 8.2% in third decade to 3.5% in the eighth decade. TNM staging for 248 malignancies showed majority in Stage II A(32.7%). Stage II B were 27% and Stage IIIA constituted 22.6%.

Fine Needle Aspiration Cytology were done and revealed positive correlations in 83.2% and negative for 16.8%. 24 malignant lesions were under diagnosed as benign in FNAC.



AGE DISTRIBUTION - MALIGNANCIES- BREAST



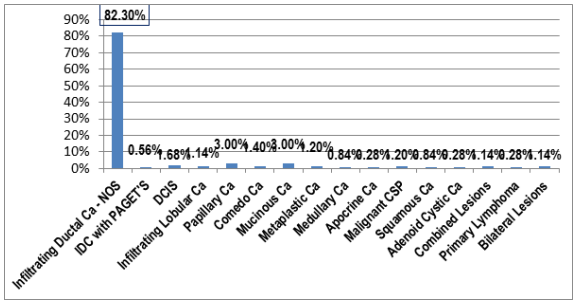
STAGING - CARCINOMA BREAST

Malignancies : Infiltrating ductal carcinoma not otherwise specified (IDC- NOS) represented 277 cases (82.3%) with recurrences and residual disease accounting for 11 and 14 cases respectively .The tumour size was 2.5cm in 57% cases, more than 5cm in 24% of cases and less than 2cm in 19% of cases.

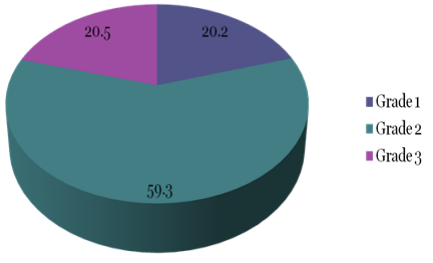
Papillary and mucinous carcinoma contributed to 11 cases (3%) each. Other variants included Lobular carcinoma 4 cases (1.14%), Comedo carcinoma 1case (4%), Metaplastic carcinoma 1.2%, Medullary carcinoma 0.8%,Apocrine carcinoma 0.3%,Adenoid cystic carcinoma 0.28%, Squamous cell carcinoma 0.84%, Malignant phylloides 1,2%, and Ductal carcinoma in situ 1.68%.

Bilateral and combined malignancies accounted for 1.14 % each. There were 3 cases of Combined IDC and ILC and a case of Combined IDC and Mucinous Carcinoma contributing to a total of 4 cases (1.12%). Malignancies in both the breasts were 4 cases (1.12%) namely., 1 case of Apocrine Carcinoma and Comedo carcinoma, 2 cases of Bilateral IDC and 1 case of Bilateral Lymphoma.

Malignancies in male breasts were 14.3% of which IDC- NOS were 7 cases (63.3%) mucinous carcinoma (9.1%) and Squamous cell carcinoma 27.3%.



Malignancy	n =	%	Female	Male
1. DCIS	6	1.67%	6	-
2. IDC with PAGET s	2	0.56%	2	-
3. IDC – NOS with 11 recurrences and 14 residual tumors	295	82.3%	295	7 (63.9 %)
4. ILC	4	1.12%	4	-
5. Papillary Carcinoma	11	3.1%	11	-
6. Adenoid cystic Ca	1	0.28%	1	-
7. Comedo Ca	5	1.4%	5	-
8. Mucinous Ca	11	3%	10	1 (9.1%)
9. Apocrine Ca	1	0.28%	1	-
10. Metaplastic Ca	5	1.4%	5	-
11. Medullary Ca	3	0.84%	3	-
12. Malignant Phylloides	5	1.4%	5	-
13. Primary Lymphoma	1	2.8%	1	-
14. Bilateral malignancies	4	1.12%	4	-
15.Combined malignancies	4	1.12%	4	-
16. Squamous Cell Carcinoma	3		-	3 (27.3%)
TOTAL	367 (356 + 11)	-	-	



GRADING

The malignant tumors were graded and Grade I was 20.2%, Grade II as 59. 3% and Grade III were 20.5%. Recurrences and residual tumors after neo adjuvant chemo therapy were in Grade II(58.3%).

Lymph node positivity was observed in 115 cases out of 367 cases (31.3%)with 4 or more positive nodes occurring in 13.89 % cases.

Associated lesions commonly encountered in malignancies were fibro cystic disease 66.2%, Ductal carcinoma in situ 47 cases(30%), 2 cases of LCIS and atypical ductal hyperplasia each with fibro cystic disease contributing 104 cases.

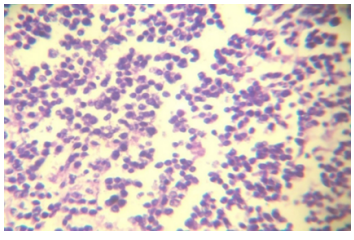
Study	n	Duration (years)	Males %	Females %	Benign %	Malignancy%
Kulkarni	176	3	2.84	97.16	80.70	19.30
Malik	1824	20	5.48	94.52	72.97	27.08
Bauer	71	10	43.66	56.34	95	5
Desai	212	7	_	_	81.3	18.87
Jeyalakshmi	1037	2	3 n=11	97.0 n= 356	47.2	35.4
Tarek	969	7	-	_	60.1	21.4

Immunohistochemistry done for 64 cases showed strong Her2neu positivity in 35.96% and ER and PR were positive in 39.06%. Her2neu was positive in 29.68% of ER and PR negative cases, majority contributed by Grade II and Grade III.

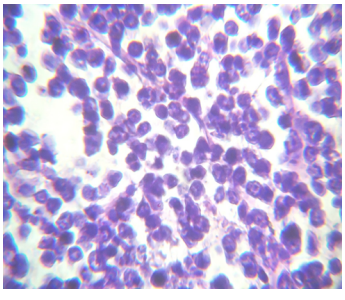
RARE CASES include:

1. 26/F _ Cysticercosis. Right Breast sent as Lipoma breast
2. 38/F _ Pseudo Angiomatous Stromal Hyperplasia (PASH), sent as Fibro adenoma
3. 25/F - HIV positive, Bilateral Primary Lymphoma Breast- NHL - Diffuse Large B cell Lymphoma, CD 20 positive, CD79a focal positive, LCA positive, CD 10 Positive
4. 60/F - Bilateral Malignancies- Right Breast– Apocrine Carcinoma, 3cm in size, Her2 neu 3+ positivity and Left Breast - IDC-NOS

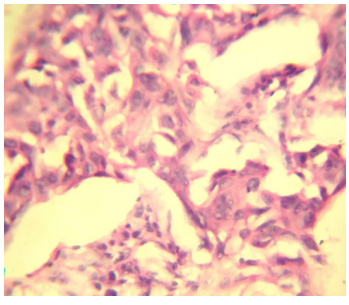
LYMPHOMA- GROSS - NODULAR MASS – 13X 11X 8 CM



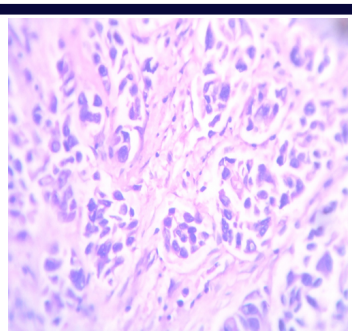
DIFFUSE LARGE CELL LYMPHOMA - 10x10



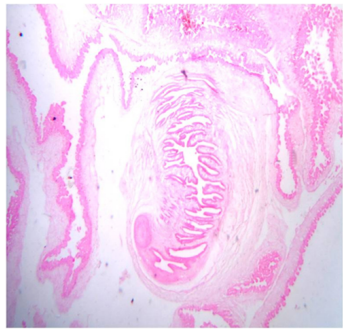
DIFFUSE LARGE CELL LYMPHOMA 10 x 100



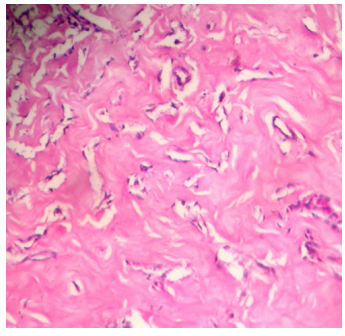
APOCRINE CARCINOMA-10X40



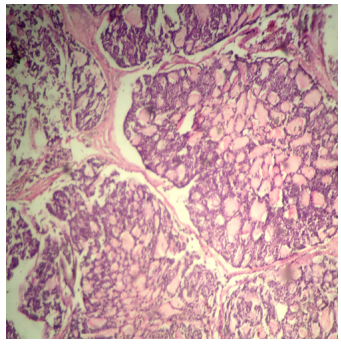
INFILTRATING DUCTAL CA GRADE II 10X40



CYSTICERCOSIS 10X10



PSEUDO ANGIOMATOUS STROMAL HYPERPLASIA (PASH) 10X40



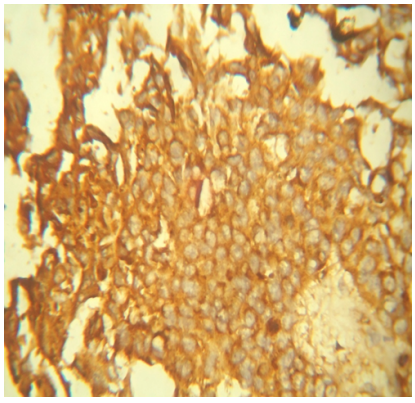
ADENOID CYSTIC CARCINOMA 10X10

DISCUSSION :

Benign breast lesions are significantly more common than the malignant lesions world wide. Benign breast diseases comprised 47.2% breast lesions whereas Malik et al reported 72.97% as benign. Malignancies were 35.4% and the incidence was high when compared to the previous reports by Malik et al which described 27.03% as malignant.

IDC NOS represented 82.3% of all lesions in comparison with Tarek et al study which had 78.7% as IDC. Bilateral malignancies were 1.14%. Mixed ductal carcinoma were 3%. Paget's disease with IDC were 0.56%.

TNM staging for 248 malignancies showed majority in Stage II A (32.7%). Grading revealed most of the malignancies presenting as Grade II (59.3%).Recurrences and residual tumors after neo adjuvant chemo therapy fall in Grade II(58.3%). Her2 neu positivity was 35.96% in comparison Vikash et al which showed 46.37% and it correlates with grade, ER/ PR status and affects survival.



HER 2/neu positivity 10X40

COMPARISON WITH OTHER STUDIES :

STUDY n	DURATION (years)	MALES %	FEMALES %	BENIGN %	MALIGNANCY%
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Jeyalakshmi 1037	2	3 (n=11)	97.0 (n= 356)	47.2	35.4
Tarek 969	7	_	_	60.1	21.4

CONCLUSION:

IDC-NOS was the most common malignancy occurring between 23 to 80 years with peak incidence in fifth decade predominating on left side. Staging and Grading are the most significant prognostic indicators predicting recurrences and responses to various therapeutic modalities. Categorizing benign proliferative lesions and meticulous screening with the breast carcinoma awareness programmes along with the follow up improves patient's outcome.

ACKNOWLEDGMENTS:

None.

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