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Dr. C Bhavani
Associate Professor, Pathology, DR. Ntruhs/Government Medical College, Andhra Pradesh, India

Dr. M Neeraja
Professor & HOD, Pathology, DR. Ntruhs /Government Medical College, Andhra Pradesh, India

Dr. P Sravani
Assistant Professor, Pathology, DR. Ntruhs/Government Medical College, Andhra Pradesh, India

Corresponding Author:
Dr. M Neeraja
Professor & HOD, Pathology, DR. Ntruhs/Government Medical College, Andhra Pradesh, India

A study of histopathological spectrum of breast lesions in a tertiary care hospital

Dr. C Bhavani, Dr. M Neeraja and Dr. P Sravani

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Abstract
Background: Various types of pathologies from inflammation to carcinoma are known to affect breast tissue in females. Some lesions are common in young females while others are more common in elderly age group. Accurate diagnosis is essential to relieve anxiety of patients. In case of carcinoma, early and accurate diagnosis can save the patient from metastases, thus reducing mortality and morbidity.
Aims and objectives: This study is aimed to analyse the histopathological spectrum of various breast lesions and to study the distribution of breast diseases in different age groups and gender in our institute.
Materials and Methods: It is a prospective study performed in the Department of pathology at Government Medical College/Government General Hospital Anantapuramu over a period of four years from January 2015 to December 2018. During this period a total of 310 breast specimens were received in the Department of pathology. Histopathological examination of specimens was done to know the spectrum of breast lesions.
Results: Out of 310cases, 290cases were female and 20 cases were male. 185 cases were benign breast neoplasms, 123 cases were malignant neoplasms and 02 cases were inflammatory lesions. Among the 185 cases of benign breast neoplasms, 141 cases were fibroadenoma which was the most common benign breast lesion. Out of 123 malignant breast lesions, 2 cases were Duct cell carcinoma in situ and 121 cases were invasive malignant breast lesions. Out of which 97 cases were Invasive ductal carcinoma –NOS subtype which was the most common lesion.
Conclusion: 59.68% of breast lesions were benign breast lesions proving to be the majority in incidence. 39.68 % of lesions were malignant breast lesions and 0.64% were inflammatory lesions. Benign lesions were common in second to fourth decade and malignancy in fifth and sixth decades.

Keywords: Benign breast Neoplasms, Fibroadenoma, Malignant breast lesions, Inflammatory Lesions, Invasive ductal carcinoma- NOS

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 [1].
Cancer of breast has emerged as the leading site of cancer in most urban populations. It has rapidly replaced cancer cervix as the most common cancer in women in India [2].
A benign proliferative lesion of the breast is an important risk factor for subsequent transformation to malignancy. Karyotype and molecular alteration in benign proliferative breast lesions parallel those of breast carcinoma [3].
Histopathology plays an important role in management of breast diseases. It is a necessary component of diagnosis, treatment and prognosis in most breast disorders. Also, when assessing the adequacy of treatment in breast cancer, pathologic assessment is the main criterion [4].
Till now many studies have been done and published on the histopathology of breast lesions. The present study was done to know the histopathological spectrum of breast lesions at Government Medical College, Anantapuramu.

Aims and objectives
This study is aimed to analyse the histopathological spectrum of various breast lesions and to study distribution of breast diseases in different age groups and gender.

Materials and Methods

It is a prospective study performed in the department of Pathology, Government medical College, Anantapuramu over a period of 04 years from January 2015 to December 2018. During this period a total of 310 breast specimens were received by the Department of Pathology, Government Medical College from Government General Hospital, Anantapuramu. The standard Formalin Fixed Paraffin Embedding (FFPE) tissue processing protocols were followed and "3- 4"µm thick sections were cut and stained with Haematoxylin and Eosin stains for histopathological analysis.

The gross appearance of specimens and the histopathological reports were recorded as per proforma.

Histopathological typing was done according to WHO classification.

Results

A total of 310 cases were studied over a period of 4 years, 185 (59.68%) cases were benign breast neoplasms, 123(39.68%) cases were malignant lesions and 02 (0.6%) cases were inflammatory lesions.

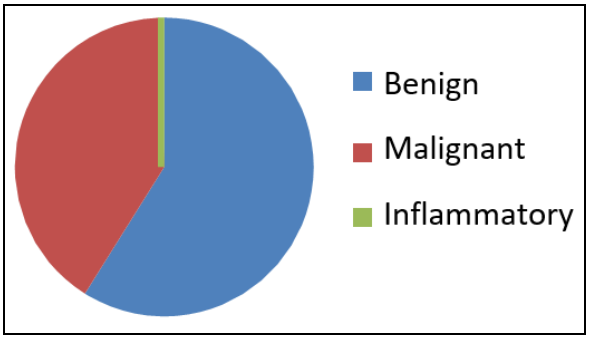

Fig 1: Breast lesions

20 (6.45%) cases were male and 290 (93.55%) cases were female. Out of 20 cases in males, 18 cases were reported as gynaecomastia and 2 cases were Invasive ductal carcinoma, NOS type. Involvement of left breast (53.3%) was more than right breast (46.4%) where as 0.3% cases presented with bilateral breast lesions.

The age of presentation ranged from 11-80 years.

Table 1: Age wise distribution of various breast lesions

Age (years)	Benign Neoplasms in %	Malignant lesions in %	Inflammatory lesions in %
11-20	41 (13.23%)	-	-
21-30	78 (25.16%)	04 (1.29%)	01 (0.32%)
31-40	40 (12.9%)	22 (7.10%)	01 (0.32%)
41-50	16 (5.16%)	32 (10.32%)	-
51-60	08 (2.5%)	42 (13.55**%)**	-
61-70	02 (0.65%)	20 (6.45%)	-
71-80	-	03 (0.97%)	-
Total	185 (59.68%)	123 (39.68%)	02(0.64%)

The minimum and maximum ages recorded were 11 and 80 years respectively. The average age at diagnosis was 45.5 years.

The commonest benign breast lesion was fibroadenoma, seen in 141 cases (45.48%) followed by fibrocystic disease in 13 cases (4.19%) in females. Gynaecomastia was diagnosed in 18 cases (5.80%) in males.

Invasive duct cell carcinoma NOS type, 97 cases (31.3%) was the most common malignant breast lesion in our study followed by medullary carcinoma seen in 15 cases (4.84%).

Benign breast lesions were seen most commonly in the 2nd and 3rd decade whereas malignant lesions were most commonly seen in the 5th and 6th decade as shown in Table-1.

Other benign and malignant breast lesions that have been studied are shown in the Table-2 and Table-3respectively.

Table 2: The age wise histopathological distribution of benign breast neoplasms

Breast lesion	11- 20 Years	21-30 Years	31-40 Years	41-50 Years	51-60 Years	61-70 Years	71-80 Years	Total
Fibroadenoma	37	64	31	09	Nil	Nil	Nil	141
Fibrocystic disease	Nil	04	05	03	Nil	01	Nil	13
Duct Papilloma	Nil	Nil	Nil	Nil	01	Nil	Nil	01
Benign phyllodes	Nil	04	02	02	02	Nil	Nil	10
Gynaecomastia	03	06	02	01	05	01	Nil	18
Lactating adenoma	01	Nil	Nil	Nil	Nil	Nil	Nil	01
Tubular adenoma	Nil	Nil	Nil	01	Nil	Nil	Nil	01
Total	41	78	40	16	08	02	Nil	185

Table 3: The age wise histopathological distribution of Malignant breast lesions

Breast lesion	11- 20 Years	21-30 Years	31-40 Years	41-50 Years	51-60 Years	61-70 Years	71-80 Years	Total
DCIS	Nil	01	Nil	01	Nil	Nil	Nil	02
IDCC-NOS	Nil	03	19	23	32	17	03	97
Medullary	Nil	Nil	02	04	07	02	Nil	15
Scirrhous	Nil	Nil	Nil	02	Nil	Nil	Nil	02
Invasive Papillary	Nil	Nil	01	Nil	01	01	Nil	03
Mucinous	Nil	Nil	Nil	01	02	Nil	Nil	03
Cribriform	Nil	Nil	Nil	01	Nil	Nil	Nil	01

Table 4: The age wise histopathological distribution of inflammatory breast lesions

Breast lesion	11- 20 Years	21-30 Years	31-40 Years	41-50 Years	51-60 Years	61-70 Years	71-80 Years	Total
Granulomatous mastitis	Nil	Nil	01	Nil	Nil	Nil	Nil	01
Breast abscess	Nil	01	Nil	Nil	Nil	Nil	Nil	01

Discussion

Breast lesions are detected commonly now a days due to awareness, knowledge and more importantly breast self examination by patients. Benign breast diseases are more prevalent as compared to malignant and inflammatory lesions as seen throughout the world.5In our study comprising of 185 cases 59.68% were benign neoplasms, 123 cases comprising 39.68% were malignant and 02 cases comprising 0.64% were inflammatory lesions.

The mean age of incidence of breast lesions in our study which is 45.5 years, is found to be much lower than in the western literature where the mean age is 54 years [6].

In the present study we found that mainly left sided breast lesions were more common (53.3%) compared to right sided breast involvement (46.4%). Bilaterality was seen in 0.3% cases. Our findings are similar to the studies done by Raju *et al*, Kalyani *et al*, Ngwogu *et al*. [7-9]

In our study we found that 294 cases (93.6%) were female patients and 20 cases (6.3%) were male patients. In Dnyaneshwar J S *et al*. study found that 97.08% female patients and 2.91% male patients.10 High proportion of the female cases shows that breast diseases are more common in females than males.

In the present study out of 310 cases 185 cases were reported to be benign breast neoplasms. 141 cases (45.48%) were diagnosed with fibroadenoma which emerged as the most common benign breast neoplasm with peak incidence in the 2nd and 3rd decade followed by fibrocystic disease diagnosed in13 cases (4.1%) with peak incidence in the 3rd and 4th decade. Benign phyllodes was diagnosed in 10 cases (3.1%). Kalyani *et al*, Dayanand *et al*, Amna Khurshid et a1and Anmod G.L also found similar findings in their study [8, 11-13].

It has been seen that in women between adolescence and the mid 20's the lobules and the stroma may respond to hormonal stimuli in an exaggerated fashion with the development of single and multiple fibroadenomas. No breast tumors were seen in the first decade of life.

Fibrocystic disease occurs during ovulation and just before menstruation. During these times, hormonal changes often cause the breast cells to retain fluid and develop into nodule or cyst which feels like a lump which touched. These nodules and cysts spread throughout the breast. The real incidence of fibrocystic disease is difficult to estimate and diagnosis depends a great deal on individual clinician or pathologist acumen [14].

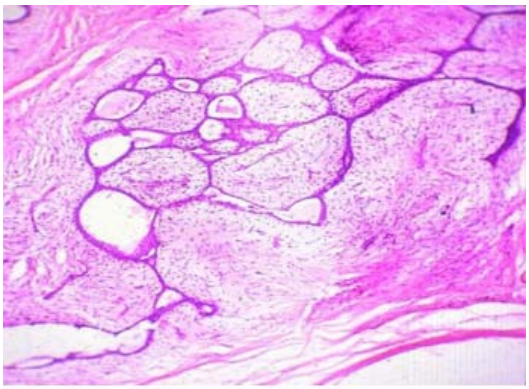

Fig 1: Fibroadenoma

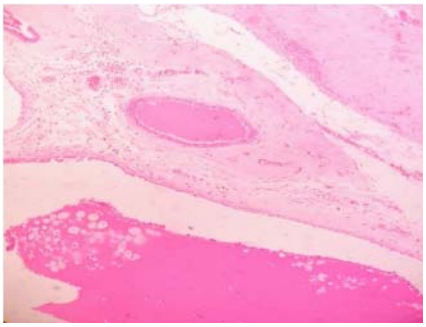

Fig 2: Fibrocystic disease

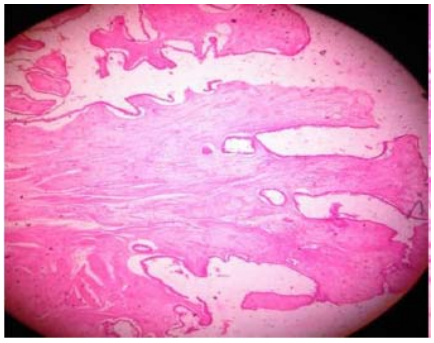

Fig 3: Benign Phyllodes

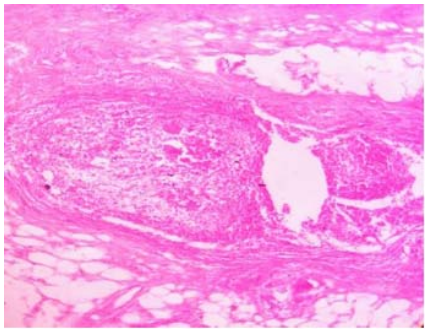

Fig 4: Granulomatous mastitis

Phyllodes tumour presents histologically as intraductal growth of intralobular stroma with leaf like projections. In our study phyllodes tumour accounts for 3.1% of all the breast lesions. Our findings are similar to study done by Hatim *et al* who reported an incidence of 3.4% of benign phyllodes tumour [15].

Gynaecomastia constituted 18 cases (5.7%) of all benign lesions in male patients. Hatim *et al* reported an incidence of 4.3% of gynaecomastia [15]. Bagle *et al* reported 2.25% incidence of gynaecomastia [16].

Lactating adenoma accounted for 0.3% (1 case) of case comparable to that of Pudale *et al*. [17] Only one case of tubular adenoma was seen in a 20 year female. Pudale *et al* reported an incidence of 0.55% which was seen in patients of 11-30 years.

In our study 2 cases (0.6%) of inflammatory lesions, one with granulomatous mastitis and other with breast abscess were recognized which is comparable to the study done by Rathi *et al*. [18]

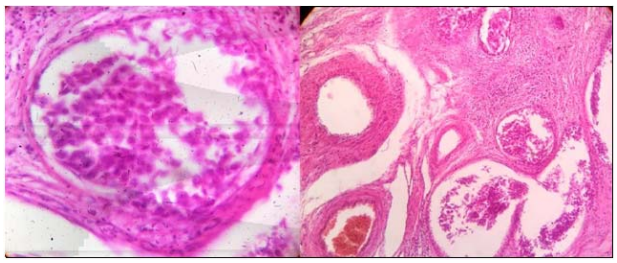

Fig 6: Duct cell carcinoma in-situ

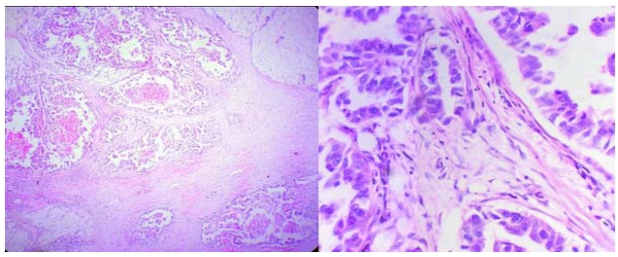

Fig 7: Invasive Ductal Carcinoma –NOS

Most of the malignant lesions are found after 40 years of age. The present study reported the highest incidence of malignant lesions after 5th decade of life which was comparable to the results obtained in the studies done by Malik R *et al*, Mudholkar *et al* and Ibrahim *et al*.19,20,21 Among the malignant lesions Invasive ductal carcinoma – NOS was the most common malignant variety, followed by medullary carcinoma, mucinous carcinoma and papillary carcinoma.

Kalyani *et al* and Dnyaneshwar J S *et al*. also found Invasive ductal carcinoma-NOS as the commonest malignancy among the studied malignant breast lesions [8, 10].

Medullary carcinoma was seen in 4.84%of malignancies in the present study; nearly similar frequencies was reported by Dayanand *et al* (4.8%) and Dnyaneshwar J Set. al (3.84%) of malignancies [11, 10].

Conclusion

In the present study we found that benign breast neoplasms are more common than malignant breast lesions with a peak incidence in the 2nd and 3rd decade. Malignant lesions are common in 4th to 6th decade but peak incidence was in the 5th and 6th decade. Left breast was most commonly involved. Breast lesions were more common in females than males. Among the 290 female cases most common benign breast neoplasm was fibroadenoma and malignant neoplasm was Invasive ductal carcinoma-Not otherwise specified. Among the 20 male cases, [18] cases were gynaecomastia and 2 cases were malignant lesions.

Though premalignant lesions were less common in our study, it is advisable that all cases of breast lesions should be carefully evaluated to exclude their possibility. Histopathological study plays very important role in diagnosis of breast lesions and hence in treatment and prognosis.

References

1. Dr. Mayura Phulpagar, Dr. Rakesh Shedge, Dr. Darshana Wakkar. Study of Histomorphological Spectrum of Breast Diseases in a Tertiary care centre of Mumbai, Global Journal For Research Analysis 2018; 7 (6):65-67.
2. Jyothi Sharma, Hem Chander Pandy. A Review of spectrum of breast lesions in tertiary carecentre: A Retrospective study, Journal of Medical Science and Clinical Research 2019; 7(1):128-131.
3. Shwetha Jose, A Histopathological study of breast lesions: Our experience, International Journal of Science and Research 2018; 7(1): 365-366.
4. Gogai Geetanjali, Borgohain Diganta. Histopathological Spectrum of Breast Lesions-A Hospital Study, IJHRMLP. 2016; 2(1):73-78
5. Mansoor. Profile of female breast lesions In Saudi Arabia JPMA 2001; 51(7):243-246.
6. Manasa Reddy M, Raghu K. Histopathological Spectrum of Neoplastic and Non-neoplastic Breast Lesions: A Two Years Study. Int J Sci Stud. 2017; 4(11):158-162
7. Raju GC, Jankey N, Naraynsingh V. Breast disease in Young west Indian women: an analysis of 1051 consecutive cases. Postgrad Med. J. 1985; 61:977-8.
8. Kalyani S, Mehraj Banu OA. Study of Breast Lesions in the tertiary health care center. International Journal of recent trends in Science and Technology. 2016; 18(3):415-419
9. Ngwogu *et al*. Histopathological pattern of Benign Breast Disease among female patients in Abia State University Teaching Hospital; IJCR 2017; 6(4):126-134.
10. Dnyaneshwar JS, Kale PB, Giri A, Valand AG. A Histopathological study ofNeoplastic and Non Neoplastic Breast lesions at a Rural tertiary care center in India; Indian Journal of Pathology: Research and Practice. 2017; 6(2):387-392.
11. Dayanand V, Shashidhar HB, Sandhya M, Ashwini NS, Bharathi M. Spectrum of Breast Neoplasms in Females: a 10 years Histopathological review in a Tertiary care hospital. Int J Sci Stud 2015; 3(2):79-84.
12. Khurshid A *et al*. Breast lesions in Adolescents and Young women in Pakistan- A 5 year study of significance of early recognition. Asian pacific J Cancer Prev. 2013; 14(6):3465-3467
13. Anmod GL, Ganesh Swami, Gagan Dhal. Clinicopathological pattern of benign breast diseases among female patients at a tertiary care centre in India. Med pulse International Journal of Surgery. 2017; 3(1):12-15.
14. Clemons M, Goss P. Estrogens and the risk of breas cancer. N Engl S Med. 2001; 344(4):276- 285.
15. Hatim KS, Laxmikant NS, Mulla T. Patterns and prevalence of benign breast disease in Western India Int J Res Med Sci. 2017; 5(2):684-688
16. Bagale P, Dravid NV, Bagale S, Ahire N. Clinicopathological Study of Benign Breast Diseases. International Journal of Health Sciences & Research. 2013; 3(2):47-54.
17. Pudale S, Tonape SD. A histopathological study of nonmalignant breast lesions. Int J Res Med Sci. 2015; 3(10):2672-2676.
18. Rathi M. Khalid M, Buddania SK, Mittal A, Verma N, A clinicoathologic study of various breast lesions with cytohistolocial correlation. Muller Journal of Medical Sciences and Research; 2015; 6(1):16-22.

19. Reeni Malik VK, Bharadwaj. Breast lesion lesions in young females – a 20-year study for significance of early recondition. Indian J Pathol microbial. 2003; 46(4):559-562.
20. Mudholkar VG, Kawade SB. *et al*, Histopathologicalstudy of Neoplasticc Lesions of Breast, Indian Medical Gazette. 2012, 353-364.
21. Ibrahim IM, Illiyasu Y, Mohamed AZ. Histopathological Review of Breast Tumors in Kano, Northern Nigeria. Sub-Saharan Afr J Med 2015; 2:47-51.