

A Study on the Histomorphological Spectrum of Breast Lesions in Our Tertiary Care Centre

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ABSTRACT

BACKGROUND: Breast lesions in females are heterogenous diseases with several distinct entities with remarkably different characteristic features. The present study assessed histopathological findings of excision biopsies of breast lesions.

AIM: To evaluate the frequency, age and histopathological features of breast lesions in our tertiary care centre.

MATERIALS AND METHODS: The present study was conducted on 148 samples received in 10% neutral buffered formalin into our Department. The histopathological diagnosis was made after routine processing and haematoxylin and eosin staining.

RESULTS: Of the 148 specimens received, 138 specimens belonged to female patients (93%). The peak age of the occurrence of breast masses was in the 4th decade. Both neoplastic and non-neoplastic lesions were present in the specimens. Among non-neoplastic only mastitis cases were reported. Among benign, fibroadenomas were the most common (35.8%). Among malignant, invasive ductal carcinoma was most common (29%).

CONCLUSION: Present study found that the most common benign lesion is a fibroadenoma, and the malignant lesion is invasive ductal carcinoma not otherwise specified. Therefore proper screening programs and awareness should be conducted across women of all statuses.

KEYWORDS: Breast, lump, fibroadenoma, invasive breast carcinoma.

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I. Introduction:

The breast is a modified sweat gland in females that produces milk. It consists of two major structures, ducts and lobules, two types of epithelial cells, luminal and myoepithelial, and two types of stroma, inter and intralobular stroma¹. They respond to hormones continuously throughout life and are a site of multiple pathological alterations¹. Breast lesions consist of both benign and malignant lesions. Benign lesions are most common than malignant lesions². Malignancy of the breast is the second most common in female cancers, next to cervical cancer. It is the most common cause of death in females, even though advances in imaging techniques and fine needle aspiration techniques are in great use^{3,4}.

Histopathology plays a crucial role in differentiating neoplastic and non-neoplastic lesions and in the differential diagnosis of malignant lesions. Recent advances in morphometry and immunohistochemistry help to resolve the differentiation of premalignant lesions and malignant lesions².

II. Materials And Methods:

The present study was a cross-sectional study conducted between October 2022 and September 2022 at the Department of Pathology, Sri Venkateshwara Medical College, TIRUPATI. A total of 148 samples of excision biopsies, lumpectomy, simple mastectomy and modified radical mastectomy of breast lesions received in 10% neutral buffered formalin were included. The specimens were examined grossly, and representative areas were sectioned into 3-5µ thickness, processed and stained with Haematoxylin & Eosin stain and mounted with DPX. Sections were examined under the microscope, and a histopathological diagnosis was made.

III. Results:

Of the total 148 breast lesions, 14 cases had non-neoplastic lesions, and 134 cases had neoplastic lesions with a ratio of 1:9.5. Among neoplastic lesions, 102 cases had benign lesions, and 46 cases had malignant breast lesions with a ratio of 2.2:1. Table :1 shows the histopathological spectrum of breast lesions.

Table: 1 – Histopathological diagnosis of lesions

BREAST LESIONS	NO. OF CASES	PERCENTAGE
Mastitis	14	9.4%
Fibroadenoma	53	35.8%
Fibrocystic disease	12	8.1%
Sclerosing adenosis	2	1.3%
Intraductal papilloma	3	2%
Tubular adenoma	1	0.6%
Phyllodes	7	4.7%
Gynecomastia	10	6.7%
Invasive ductal carcinoma-NOS	43	29%
Invasive lobular carcinoma	2	1.3%
Invasive papillary carcinoma	1	0.6%
TOTAL	148	100%

The most common age group of non-neoplastic lesions is the 4th decade, and for neoplastic lesions, it is the 3rd – 5th decade. Out of 148 cases, 138 cases were seen in females, and 10 were males.

Fibroadenomas were most common in benign lesions. Intraductal carcinoma not otherwise specified was the most common malignant lesion. Only one case of invasive papillary carcinoma was noted.

Table:2 – Age-wise distribution of Benign lesions of Breast

AGE GROUP	FIBRO-ADENOMA	FIBRO-CYSTIC DISEASE	SCLEROSING ADENOSIS	INTRA-DUCTAL PAPILLOMA	TUBULAR ADENOMA	PHYLLODES	GYNECOMASTIA
11-20	7	-	-	-	-	-	3
21-30	23	2	1	-	-	-	5
31-40	18	5	1	2	1	5	1
41-50	3	1	-	1	-	2	-
51-60	1	2	-	-	-	-	-
>60	1	2	-	-	-	-	1

Table: 3-Age-wise distribution of Malignant lesions of Breast

AGE GROUP	INVASIVE DUCTAL CARCINOMA-NOS	INVASIVE LOBULAR CARCINOMA	INVASIVE PAPILLARY CARCINOMA
11-20	-	-	-
21-30	-	-	-
31-40	6	-	-
41-50	23	-	-
51-60	9	2	1
>60	5	-	-

Table:4- Presenting complaints of Breast lesions in the study group

PRESENTING COMPLAINT	NUMBER OF CASES	PERCENTAGE
Breast lump	132	89.18%
Breast pain	20	13.51%
Nipple discharge	4	2.70%

Out of 148 cases, the majority of lesions were seen in the left breast in 82 cases (55.4%), mostly in the upper outer quadrant, whereas the right breast was seen in 60 cases (40.5%) and bilaterally seen in 6 cases (4%). The most common presenting complaint is breast lump in 132 cases (89.1%). (Table:4). Only 4 (2.7%) cases have nipple discharge.

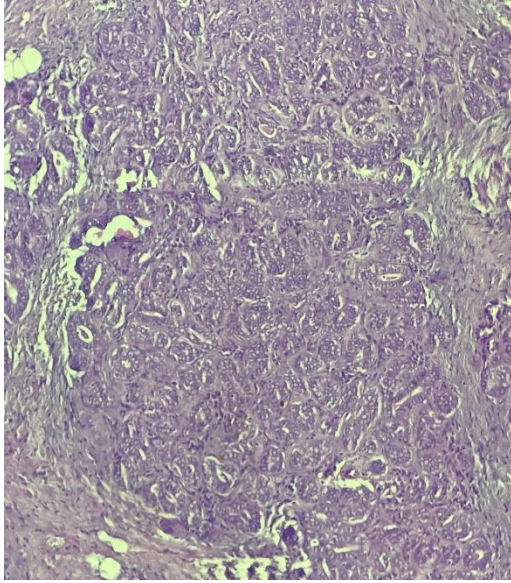


Fig:1-Tubular adenoma in 10x objective power (H&E)

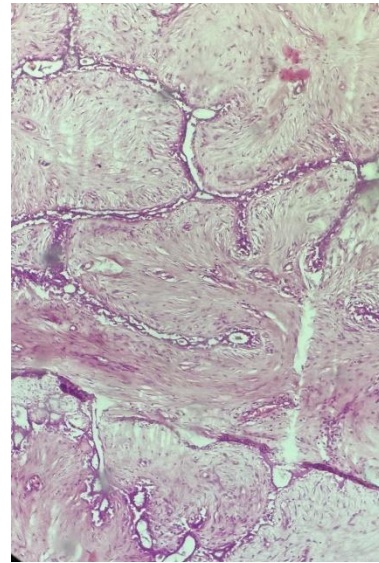


Fig:2-Intracanalicular pattern of Fibroadenoma in 10x objective power (H&E)

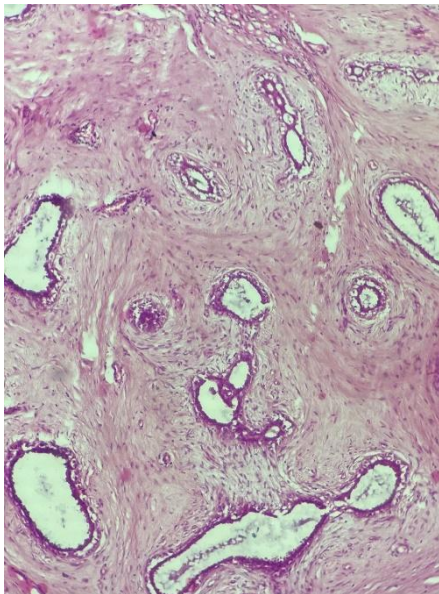


Fig :3 - Peri-canalicular pattern of fibroadenoma in 10x objective power (H&E)

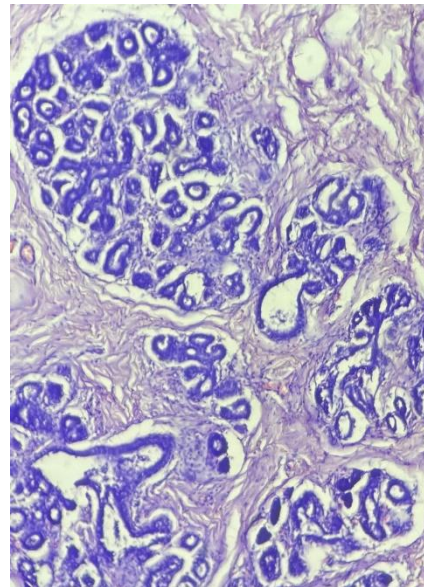


Fig:4 - Sclerosing Adenosis in 10x objective power (H&E)

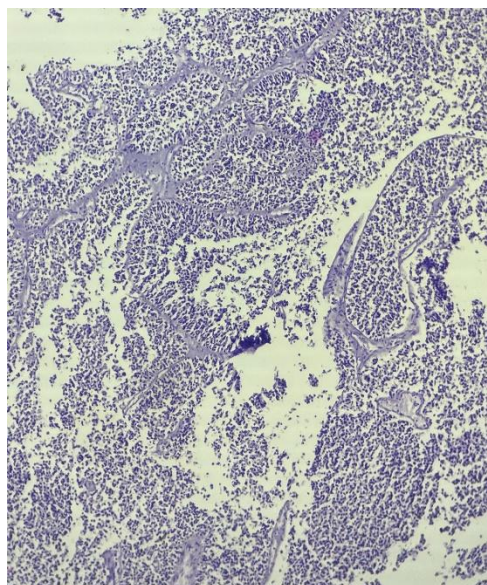


Fig :5 – Invasive Papillary Carcinoma in 10x objective power (H&E)

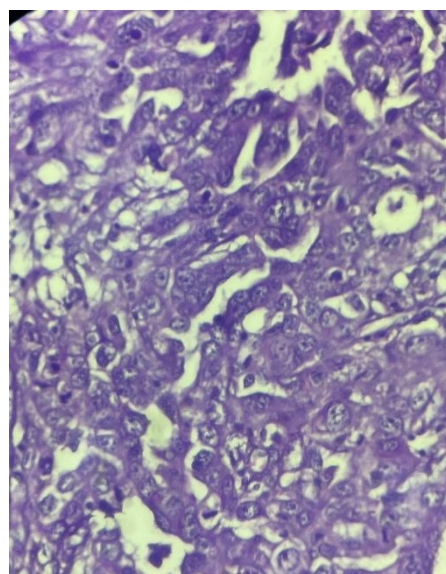


Fig:6-Invasive ductal carcinoma in 40x Objective Power (H&E)

IV. Discussion:

A total of 148 cases were studied in the Department of Pathology, Sri Venkateshwara medical college, Tirupati.

Breast lesions were most prevalent in females accounting for 138 cases (93.2%), with males accounting for only 10 cases (6.8%).

In the present study, neoplastic breast lesions (90.5%) are more common than non-neoplastic lesions (9.5%). In neoplastic lesions, benign lesions were more common, 65.6%, than malignant lesions, which were 34.3%. These results are similar to Padmom et al.,⁵ & Kumbhakar et al.,³

Table:5-Comparison of biological nature of breast lesions with other studies

HISTOPATHOLOGY	PRESENT STUDY	Nwafor et al. ⁸	Pervis et al. ⁹	Mayun et al. ¹⁰
BENIGN	65.6%	55.70%	58%	59.50%
MALIGNANT	34.3%	44.30%	42%	40.50%

Among benign neoplastic lesions, fibroadenomas were more common, accounting for 53 Cases (60.2%). The most common age group in the present study is 21-30 years, i.e., 3rd decade, which is similar to Kumbhakar et al.,³ study but was 2nd decade in Sulhyan et al.,⁴ study Yerakly et al.,¹ study. The second most common benign lesion is a fibrocystic disease, accounting for 12 cases (13.6%), similar to Padmom et al.,⁵ & Yerakly et al.,¹

Among malignant neoplastic lesions, invasive ductal carcinomas not otherwise specified were most common, accounting for 43 cases (93.4%). 2 cases of invasive lobular carcinomas and 1 case of invasive papillary carcinoma were documented.

The most common laterality of the breast is the left side accounting for 82 cases (55.4%), and the upper outer quadrant is the most commonly involved.

The most common presenting complaint is breast lump which was seen in 132 cases accounting for 89.1%, and the least is nipple discharge which accounts for 4 cases, i.e., (2.7%) which is similar to Poojasree et al.,⁶ and Sangma et al.,⁷

V. Conclusion:

The present study concludes breast lesions were common in females. Benign breast diseases are a heterogeneous group of disorders of the breast in females and are more common than malignant. There is a significant role in identifying and treating benign breast diseases at an early stage to avoid their transition into in situ and malignancy. Histopathology plays a significant role in diagnosing variable cases.

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