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Clinico-pathological spectrum of breast lesions in females over a period of three years in a tertiary care centre

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Abstract
Aim: The aim of this study is to evaluate the clinic-pathological spectrum of breast biopsies for a period of three years.
Materials and Methods: This study includes 529 breast pathology cases received by histopathology laboratories of Department of pathology, Government Medical College, Srinagar between January 2017 to January December 2019. The samples included mastectomies, lumpectomies, core needle biopsy and tru cut biopsy specimens.
Results: In the present study, out of 529 cases there were 56 (10.58%) inflammatory lesions, 287 (54.2%) benign lesions and 186 (35.16%) malignant lesions. Fibroadenoma was the most common benign breast lesion. Among the malignant breast lesions, infiltrating duct cell carcinoma was the most common.
Conclusion: The pattern of breast lesions observed showed higher prevelance of non-malignant breast lesions over malignant lesions. Awareness and screening of these entities can facilitate early diagnosis and management.

Keywords: clinico-pathological, mastectomy, lumpectomy, inflammatory, benign, malignant

Introduction
Breast pathology encompasses a wide range of benign, atypical, and malignant lesions [1]. Breast cancer is the most frequent cancer among women, impacting 2.1 million women each year, and also causes the greatest number of cancer related deaths among women. In 2018, it is estimated that 627,000 women died from breast cancer-that is approximately 15% of all cancer deaths among women [2]. The spectrum of benign breast lesions, commonly, includes fibroadenoma, phyllodes tumor, breast abscess, and chronic mastitis and the malignant spectrum, mostly, includes ductal carcinoma, lobular carcinoma, and medullary carcinoma

Aim
This study aims to evaluate the frequency, age, and histopathological features of breast lesions in a tertiary care hospital. The main objective of the present study is to analyse the spectrum of benign as well as malignant breast lesions.

Materials and Methods
This retrospective observational study was conducted in Department of Pathology, Government Medical College, Srinagar, from January 2017 to December 2019. In this study 529 cases of breast pathology, including mastectomies, lumpectomy, core needle biopsy and tru cut biopsy specimens were considered and studied for the period of three years.
The gross examination of all the cases was studied and it was confirmed that sections from all the representative areas were taken and submitted to tissue processing. After processing paraffin blocks were prepared and tissue sections were cut and stained with haematoxylin and eosin (H & E) stain. Multiple sections were examined. The lesions encountered in the present study were categorized into inflammatory, benign, and malignant conditions.

Results

Of the 529 specimens received, the peak age of the occurrence of breast masses was in the third decade followed by the fourth decade [Table.1]. Total of 422 patients were aged ≤50 years while remaining 107 patients were >50 years of age [Figure.1]. Lesions of inflammatory origin as well as malignant and benign lesions were present in the specimens. Out of 529 cases there were 56 (10.58%) inflammatory lesions, 287 (54.2%) benign lesions and 186 (35.16%) malignant lesions [Table.2]. In lesions of inflammatory origin granulomatous mastitis (n=24 cases, 42.9%) was the most commonly seen, followed by 20 cases of abcess (35.8%), 04 cases each of chronic and periductal mastitis, 03 cases of fat necrosis and 01 case of sinus tract formation. Among the 287 benign lesions, 246 cases were of fibroadenoma (85.7%), 27 cases were of fibrocystic disease (9.4 %),06 cases of benign phyllodes,03 cases each of myoepithelial polyps and ductal papilloma, and 02 cases were of fibroadenosis. Fibroadenoma is the most common benign breast lesion in this study [Table.2]. The smallest size of the benign lesion was 0.65 cm × 0.40 × 0.8 cm and the largest size was 15 cm × 9.5 × 2 cm. Among the 186 malignant lesions, 149 cases were of infiltrative duct cell carcinoma (80.1%), 16 cases were of invasive lobular carcinoma (8.6%), 10 cases of ductal carcinoma in situ (DCIS), 05 cases of medullary carcinoma,03 and 02 cases of mucinous carcinoma and adenocarcinoma, respectively, were seen. Among the malignant breast lesions, infiltrating duct cell carcinoma was the most common [Table 2]. The smallest size of the malignant lesion was 4.5 cm × 3 × 2.5 cm and the largest size was 20 × 10.5 × 7 cm.

Table 1: Age-wise distribution of breast lesions

Age (Years)	Inflammatory lesions	Benign lesions	Malignant lesions	Total cases
11-20	07	47	00	54
21-30	19	124	07	150
31-40	16	74	28	118
41-50	11	38	51	100
51-60	02	03	74	79
61-70	01	01	26	28
Total	56	287	186	529

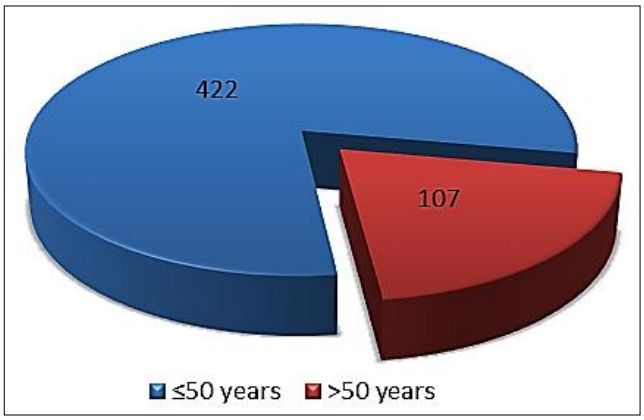

Fig 1: Age distribution

Table 2: Distribution of inflammatory, benign and malignant breast lesions

Inflammatory			Benign			Malignant		
Lesion	Cases	%	Lesion	Cases	%	Lesion	Cases	%
Abcess	20	35.8	Fibroadenoma	246	85.7	DCIS	10	5.4
Mastitis			Fibrocysctic disease	27	9.4	Infiltrating Ductal Carcinoma	149	80.1
-Granulomatous	24	42.9	Adenosis	02	0.7	Invasive Lobular Carcinoma	16	8.6
-Chronic	04	7.1	Ductal papilloma	03	1.05	Mucinous Carcinoma	03	1.6
-Periductal	04	7.1	Myoepithelial polyp	03	1.05	Medullary Carcinoma	05	2.7
Sinus Tract	01	1.8	Benign Phyllodes	06	2.1	Malignant Phyllodes	01	0.5
Fat Necrosis	03	5.3				Adenocarcinoma	02	1.1
Total	56	100	Total	287	100	Total	186	100

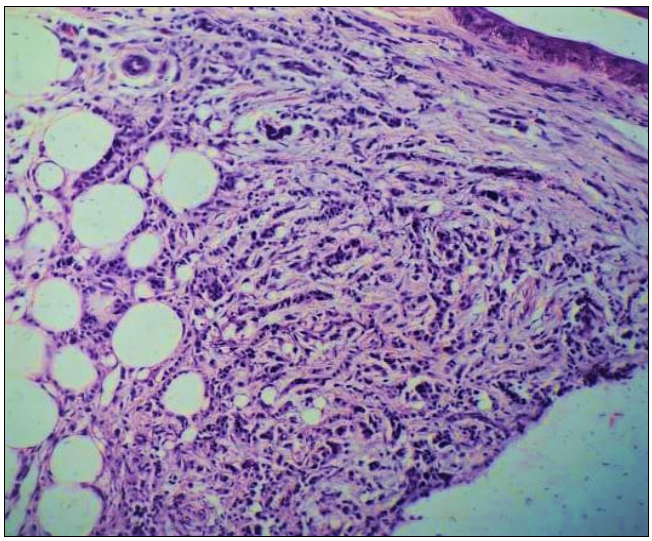

Fig 2: Lobular carcinoma (H&E 100X)

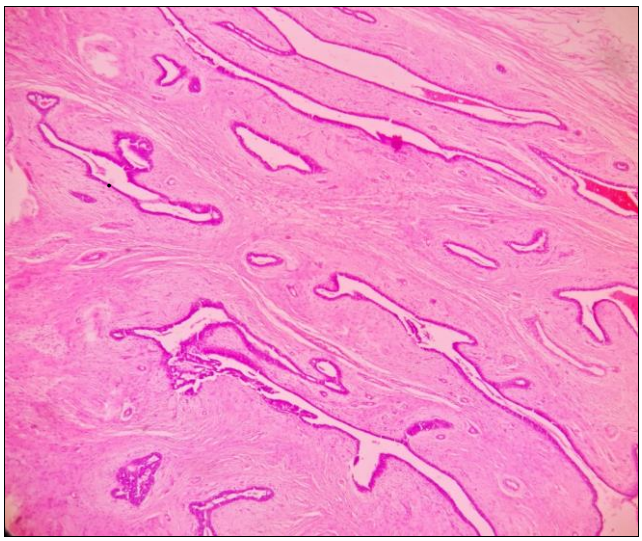

Fig 3: Benign phyllodes tumor (H&E 100X)

Discussion

In our study out of 529 cases of breast lesions, 343 cases (64.83%) were non-malignant (287 benign and 56 inflammatory) and 186 cases (35.16%) were malignant. The ratio between non- malignant and malignant lesions of breast is 1.84:1 which was almost similar to the study done by Khanna *et al.* [3] and Pai S *et al.* [4]. But in studies done by Sree ND *et al.* [5] Kumar *et al.* [6] and Maurya DG *et al.* [7] the ratio was almost double.

In the present study, 186 cases (35.16%) were malignant. Shanthi V *et al.* [8], studied 100 breast lesions and found 28% malignant pathology [12]. In a study reported by Mayun *et al.* [9] from Nigeria, malignant lesions were diagnosed approximately 40%. Another study by Pradhan *et al.* [10], in Nepal reported up to 15.5% malignant cases.

Out of all non-malignant lesions fibroadenoma constitutes the dominating lesion 246 cases (46.50%). This was similar to study of Mansoor I [11] and another study by Adesunkanmi AR *et al.* [12] Amr *et al.* [13] reported 30.7%, Kulkarni *et al.* [14] 62.32%, Malik *et al.* [15] 41%, cases of fibroadenoma In present study the most common age of fibroadenoma was second and third decade which is comparable to the above studies.

In this study most of the malignant lesions occur in 5th and 6th decades, similar to the findings found by Mudholkar *et al.* [16], Sharma k *et al.* [17] and Gaikwad *et al.* [18] Out of 186 malignant breast lesions, 149 were diagnosed as Infiltrative duct cell carcinoma (80.1%), followed by 16 cases of invasive lobular carcinoma (8.6%), 10 cases of DCIS (5.4%) and 05 cases of medullary carcinoma, 03 cases of medullary carcinoma, 02 and 01 cases of adenocarcinoma and malignant phyllodes, respectively. This was similar to a study by Shanthi V *et al.* [8], in which out of 28 cases 23 cases were diagnosed as ductal cell carcinoma, 2 as lobular carcinoma, 1 as medullary carcinoma, 1 as malignant Phyllodes and 1 case was found to be mucinous carcinoma respectively. Raina V *et al.* [19], documented 2.9% of lobular carcinoma, medullary carcinoma 1.4% and Ayadi L *et al.* [20], reported 3, 8% of invasive lobular carcinoma, 3.2% mucinous carcinoma and 0.6% as metaplastic carcinoma [15, 16].

In our study 05 (2.7%) out of 186 malignant cases were medullary carcinoma, finding is close to the study of Shanti v *et al.* that showed 1 (3.57%) case of medullary carcinoma out of 28 malignant cases. Findings in Study of Sree ND *et al.* [5] were not match with our findings showed 11.76% of medullary carcinoma.

Table 3: Frequency distribution in malignant breast lesions (Invasive ductal carcinoma and medullary carcinoma) – comparison with other similar studies

Serial No.	Malignant lesion	Mudholkar *et al.* (2012) [15]	Gaikwad *et al.* (2018) [17]	Maurya *et al.* (2019) [6]	This study
1	Infiltrating Ductal Carcinoma	110 (88%)	43(89.5%)	70 (95.8%)	149 (80.1%)
2	Medullary Carcinoma	01 (0.75%)	02 (4.17%)	03 (4.1%)	05 (2.7%)
Total Malignant lesions in the study		125	48	73	186

Conclusion

In our study the pattern of breast lesions observed showed higher prevelance of non-malignant breast lesions over malignant lesions. But patients usually presented with locally advanced lesions due to lack of awareness and screening programs. Fibroadenoma was the commonest breast lesion followed by Infiltrating ductal carcinoma and then acute mastitis. In our study malignant lesions were seen most commonly in 5th and 6th decades of life but few cases were seen in younger age groups also, so steps in creating awareness and good screening programs are very necessary for early detection and treatment of patient.

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