Female Breast Lesions – A Five Year Study in a Tertiary Care Centre

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ABSTRACT

Introduction: Breast lesions constitute one of the prominent surgical pathologies encountered in clinical practice. This study on breast lesions evaluates the current scenario in a tertiary care centre of Kolkata, West Bengal.

Aim: To report the clinical presentation, and estimate the incidence and relative distribution of different breast lesions from adolescence up to post menopausal age.

Materials and Methods: This was a prospective study carried out for five years from 2009-2014. Female patients aged between 15 and 75 years were included. Triple assessment was used for diagnosis. Surgical outpatient tickets, indoor documents, radiological and pathological reports were used for data collection and tabulating results.

Results: Out of 1050 lesions studied, 755(71.9%) were benign while 295(28.1%) were malignant. Majority (85.2%) of cases, clinically presented with a breast lump with or without other symptoms. The most common clinical presentation was painless breast lump (33.4%). In all

82.5% of benign lesions were aged between 15 and 45 years. The mean age of benign lesion was 29 years. The most common benign lesion was fibroadenoma (44.9%). The most common malignant lesion was invasive ductal carcinoma (Not otherwise specified) (84%). Most of malignant cases (47.5%) were aged between 46 and 60 years. The mean age of malignant lesion was 51 years. Most malignant cases (43%) were in WHO stage II. 50% of the malignant cases had Grade II malignancy while about 60% cases had axillary node metastasis. Most of the results were closely similar to that of other studies with few minor differences.

Conclusion: A wide spectrum of breast pathology with specific lesions and presentation has been described in different ages. Most of malignant cases had adverse prognostic factors. Benign lesions with distressing symptoms however formed the majority. Female education, breast self examination, malignancy screening and awareness programmes should be encouraged and implemented to reduce morbidity and mortality.

INTRODUCTION

Breast lesions constitute one of the prominent surgical pathologies encountered in day to day clinical practice. Women of different age groups present with variable breast related complaints, clinical findings and a fear of malignancy. Breast conditions can be subdivided into benign and malignant. Benign breast diseases are the most common cause of breast problems all over the world [1]. Benign lesions usually present with troublesome symptoms and malignant lesions though less common cause considerable morbidity, disability and death. However, both benign and malignant conditions may pose a diagnostic challenge or prove difficult to manage. It is important to distinguish those conditions requiring reassurance and supportive treatment from those diseases which require definitive management. This study of breast lesions evaluates the current scenario in a population attending a tertiary care centre of Kolkata, West Bengal.

MATERIALS AND METHODS

This was a prospective study carried out for five years from 2009 to 2014 in Calcutta National Medical College, Kolkata, India. Female patients aged between 15 and 75 years of age attending the Surgical Outpatient Department with new breast complaints were included in the study. Approval was obtained from the Institution Ethics Committee.

In an attempt to delineate the spectrum of breast lesions, information on the individual cases were retrieved from surgical outpatient tickets, surgical indoor documents, radiological and pathological reports.

Triple assessment was used in this study for diagnosing breast lesions. The components of triple assessment i.e., clinical examination, radiological imaging and tissue sampling for cytology or histology are recommended and applied in each breast lesion to establish diagnosis [1]. Radiological

imaging (ultrasonography, mammography), Cytological (FNAC) and histological (core needle biopsy, excision biopsy, mastectomy) procedures were conducted according to the merit of individual cases. Informed consent was taken from every patient before clinical examination, investigations and surgery. The obtained data were used to tabulate and analyse the results.

RESULTS

[Table/Fig-1] shows, the types of clinical presentation noted among the cases in the study. The most common clinical presentation was painless breast lump only (33.4%) followed by painful breast lump only (26.4%). Majority of the patients (85.2%) clinically presented with a breast lump with or without other symptoms.

Out of 1050 cases included in the study, 755 (71.9%) were found to be having benign breast lesions while 295 (28.1%) were found to have malignancy. The breast lesions distributed in different age groups are shown in [Table/Fig-2]. The highest number of cases (370) was in the age group of 31to 45 years. The least number of cases (101) were in the age group of 61 to 75 years. 623 out of 755 benign lesions (82.5%) were aged between 15 to 45 years. Most of the malignant cases, 140 out of 295 (47.5%) were aged between 46 to 60 years.

The different types of benign breast lesions are shown in

Clinical Presentation	Number of Cases	Percentage of Total Cases (1050)	Final Diagnosis
Painless Lump only	351	33.4%	1) Malignancy (n=180) 2) Fibroadenoma (n=159) 3) Benign Phyllodes (n=12)
Painless Lump with Nipple Discharge	98	9.3%	1) Malignancy (n=95) 2) Duct Papilloma (n=3)
Painful Lump with Nipple Discharge	169	16.1%	1) Mastitis/ Breast Abscess (n=107) 2) Fibrocystic Disease (n=48) 3) Galactocele (n=14)
Painful Lump without Nipple Discharge	277	26.4%	1) Fibroadenoma (n=180) 2) Malignancy (n=20) 3) Fibrocystic Disease (n=60) 4) Tuberculosis (n=11) 5) Sebaceous Cyst (n=6)
Mastalgia only	120	11.4%	1) Fibrocystic Disease (n=120)
Nipple Discharge only	5	0.5%	1) Duct Papilloma (n=5)
Others	30	2.9%	1) Axillary Lipoma (n=20) 2) Papilloma Skin of Breast (n=4) 3) Desiring Cosmetic Breast Surgery (n=6)

[Table/Fig-1]: Clinical presentation of breast lesions.

Age Group	Benign		Malignant		Total
	No	%	No	%	
15-30 years	303	97.74%	07	02.26%	310
31-45 years	320	86.48%	50	13.52%	370
46-60 years	129	47.95%	140	52.05%	269
61-75 years	03	02.97%	98	97.03%	101
Total	755	71.9%	295	28.1%	1050

[Table/Fig-2]: Distribution of age with different breast lesions.
Total number of benign lesions= 755; total number of malignant lesions=295; Total number of studied lesions= 1050.

[Table/Fig-3]. The most common benign lesion (44.9%) was fibroadenoma, followed by fibrocystic breast disease and mastitis or breast abscess. The mean age of all benign lesions was 29 years.

The different types of malignant breast lesions are shown in [Table/Fig-4]. The most common (84%) malignant lesion was invasive ductal carcinoma (not otherwise specified).The mean age of breast malignancy was 51 years.

Type of Lesion	Number	Percentage of Benign Breast Lesion	Percentage of Total Studied Lesion	Mean Age at Presentation (Years)
Fibroadenoma	339	44.9%	32.3%	23
Fibrocystic Disease	228	30.2%	21.7%	32
Mastitis/ Abscess	107	14.2%	10.2%	30
Duct Papilloma	08	01.05%	0.76%	29
Benign Phyllodes	12	01.58%	01.14%	48
Galactocele	14	01.85%	1.33%	22
Tuberculosis	11	01.45%	1.04%	25
Axillary Lipoma / Tail Hypertrophy	20	02.64%	1.9%	30
Others (Sebaceous Cyst 6, Papilloma 5, Asymmetric Breasts 5)	16	02.1%	1.52%	22

[Table/Fig-3]: Benign breast lesions in the study.

Type of Lesion	Number	Percentage of Maligant Breast Lesion	Percentage of Total Studied Lesion	Mean Age at Presentation (Years)
Invasive Duct Carcinoma (Not Otherwise Specified)	248	84%	23.6%	47
Papillary Carcinoma	18	06.1%	01.7%	39
Medullary Carcinoma	10	03.4%	0.9%	50
Tubular Carcinoma	07	02.4%	0.7%	58
Malignant Phyllodes	05	01.7%	0.5%	52
Ductal Carcinoma in-situ.	04	01.35%	0.4%	56
Mucinous Carcinoma	03	1.01%	0.3%	60

[Table/Fig-4]: Malignant breast lesions in the study.

Parameters Studied	Results of Our Study	Rasheed et al., [2]	Malik et al., [3]	Abhijit et al., [4]	Iyer et al., [5]	Mansoor et al., [6]	Siddiqui et al., [7]
1. Commonest Clinical Presentation (%)	Breast Lump (85.2%)	Breast Lump	Breast Lump	Breast Lump (54.2%)	Breast Lump (100%)	Not Mentioned	Not Mentioned
2. Benign (%) vs Malignant (%)	71.9% vs 28.1%	78% vs 22%	73% vs 27%	Benign Lesions Studied	Benign Lesions Studied	67% vs 33%	63% vs 37%
3. Commonest Benign Lesions (%)	Fibroadenoma (44.9%) (BBL) (32.28%) (TSL) Mean age-23 years	Fibroadenoma (71%) (TSL)	Fibroadenoma (55%) (TSL)	Fibroadenoma (56%) (TSL)	Fibroadenoma (35%) (BBL)	Fibroadenoma (46.9%) (BBL) Mean age-29 years	Fibroadenoma. Mean age-27 years
4. Other Benign Lesions a) FCD	30.2% (BBL) 21.7% (TSL) Mean age-32 years	Not Mentioned	FCD-49% (BBL)	Not Mentioned	FCD-28% (BBL) Mean age<30yrs	FCD-23% (BBL) Mean age-41 years	FCD Mean age-40 years
b) Mastitis/Breast Abscess	14.2% (BBL) 10% (TSL) Mean age-30 years	Not Mentioned	24.5% (TSL)	Not Mentioned	15% (BBL)	Not Mentioned	6.8% (TSL) Mean age-36 years
5. Commonest Malignant Lesion (%)	IDC (NOS) 23.6% (TSL) 84% (MBL)	IDC (NOS) 87.5% (MBL)	IDC (NOS) 84% (MBL)	Not Mentioned	Not Mentioned	IDC (NOS) 25.5% (TSL)	IDC (NOS) 37% (TSL)

[Table/Fig-5]: Results of study compared with that of other studies.
*BBL=Benign Breast Lesion; FCD= Fibrocystic disease; TSL=Total Studied Lesion; MBL=Malignant Breast Lesion; IDC (NOS)=Invasive Duct Carcinoma (Not Otherwise Specified)

[Table/Fig-5] shows the comparison of the results of our study with that of similar studies carried out in India and some of the other South Asian countries within the last two decades.

DISCUSSION

This study evaluated the clinical presentation and estimated the incidence and relative distribution of different breast lesions within the spectrum of benign and malignant pathology from adolescence up to postmenopausal age. This study has also compared its results with those of other similar studies conducted in India and some of the other South Asian countries in last two decades.

In our study, the majority of patients (85.2%) presented with a breast lump with or without other symptoms. Other Indian studies have reported somewhat similar clinical presentation of their respective cases. Rasheed et al., and Malik et al., have reported breast lump as the most common clinical presentation followed by mastalgia [2,3], Abhijit MG et al., has reported lump (54.2%) as most common, followed by lump and pain (20.9%), pain only (14.5%) and nipple discharge only (8.2%) [4]. Iyer et al., [5] have reported breast lump in 100%, pain in 50% and nipple discharge in 15% cases. All the above reported studies have thus mentioned breast lump as the most common clinical presentation. However, the percentages of painless breast lump (42.7%) and that of painful breast lump (42.5%) are almost similar in our study while other studies have not mentioned this difference.

In our study, 71.9% of the cases were benign while 28.1% were found to be malignant in nature. Other studies have reported almost similar figures. In all the studies, benign cases ranged from 60%-70% while 30%-40% were malignant [2,3,6-9]. This shows that even though malignant lesions need meticulous care, yet benign lesions should not be ignored because they form the majority of breast lesions and cause distressing symptoms.

In our study, 320 (42.4%) benign cases were in the age group of 31 to 45 years, followed by 303 (40.1%) cases in the age group of 15 to 30 years. They also constituted the majority of breast lesions in their age groups i.e. 86.5% and 97.7% respectively. Together 82.5% of benign breast lesions were thus aged between 15 to 45 years. In all the studies used as reference, the benign lesions were mostly aged between 20 and 40 years, somewhat similar to our study [2,3,5]. In our study, 47.5% of malignant cases were in the age group of 46-60 years. Siddiqui et al., has reported 57.4% of malignancy in that age group [7]. Amin et al., reported 62% of malignant lesions below the age of 50 years [8]. However, Ammar Al Rikabi et al., has reported 63.2% of breast malignancies in patients aged over 60 years and only 18% in patients aged below 40 years [9]. Carcinoma of the breast is extremely rare below the age of 20 years [1]. In our study, there were seven cases of malignancy detected below the age of 30 years, with 1 case diagnosed at the age of 17. Rasheed et al., reported a case of malignancy diagnosed below 25 years [2]. So the age group most affected by malignancy has somewhat differed in the other studies. However, the mean age of malignancy is more or less similar. The mean age was 51 in our study while it has varied between 49 to 50 in the others [6-9].

In our study, the most common benign lesion was fibroadenoma. Most cases presented with slightly painful,

discrete breast lump without any nipple discharge. The rest presented with painless breast lump. 2/3rd of the cases (>60%) were unilateral while 1/3rd involved both breasts. About 1/4th of the cases had a multiple presentation involving one or both breasts. The average size was 2 cm. The mean age was 23. Surgical textbooks mention fibroadenoma as the most common tumour in women younger than 30 years, most often arising in the late teens and during early reproductive years [1,10]. Other studies have reported fibroadenoma as the commonest benign lesion with almost identical mean age at presentation [2-7,11]. Kumar et al., reported fibroadenoma as solitary in presentation in 97% of cases [11]. Iyer et al., reported fibroadenoma with bilateral involvement in one case [5]. Study conducted by Abhijit MG et al., fibroadenoma was unilateral in 90% of the cases [4]. So, in all the above studies, findings were closely similar to ours i.e., fibroadenoma was the commonest benign lesion, mostly unilateral in presentation with a mean age of diagnosis below 30 years of age.

The second most common benign lesion was fibrocystic breast disease (30% of benign lesions with a mean age of 32). Fibrocystic breast disease, a spectrum of clinical, mammographic and histological findings, is common during the 4th and 5th decades of life [10]. In several other reported studies fibrocystic disease comprised of a prominent percentage of benign lesions, varying from 25 to 50% with a mean age of diagnosis ranging from 30 to 40 years [3,5-7]. Next common benign lesion was mastitis/ breast abscess, (14.2% of benign lesions and 10.2% of studied cases) having a mean age of 30 years. Infections in the postpartum period remain proportionately the most common time for breast infections to occur [12]. In our study almost all the patients with mastitis or breast abscess were lactating mothers. Other studies have mentioned similar figures and most of the patients were young lactating mothers [3,5,7]. The prominence of mastitis/abscess in lactating women highlights inadequate local hygiene. In our study, 11 cases were diagnosed with tuberculosis of the breast (1.04% of total cases). They were young females with a solitary, slightly painful breast lump. These patients did not have any systemic features of tuberculosis and did not have any past or family history. Mansoor et al., reported 12 cases of tubercular granulomatous mastitis (1.2% of all lesions) [6] and Iyer et al., reported five cases of tuberculous mastitis (1% of all lesions) [5] So, in the studies, tuberculosis formed about 1% of all lesions (percentage similar to our study), a small but significant percentage because these lesions need accurate diagnosis and specific antitubercular therapy for complete cure.

Surgical textbooks have mentioned that the most common histological variant of breast carcinoma is invasive ductal carcinoma (not otherwise specified) [10,12]. Likewise the most common malignant lesion in our study was invasive ductal carcinoma (not otherwise specified) i.e., IDC (NOS). It comprised of 23.6% of all studied cases and 84% of all malignant cases. Other studies have yielded almost similar results [2,3,6,7]. The average size of malignant lesion in our study was 3cm. All of our malignant cases (including DCIS) presented with a palpable lump. Siddiqui et al., reported the tumour size as >2 cm in 93% of cases [7], while in the studies of Hisham et al., and Kuraparthy et al., the mean tumour size was 5.4 cm and 3.9 cm respectively [13,14]. In the study of Hisham et al., 5% cases were impalpable [13].

About 43% of our malignant cases presented in WHO stage II and 40% in stage III. About 50% of patients had a malignancy of Grade-II. Similar to our study, in the study of Kuraparthy et al., stage-II was most common (45.8%) [14], while Grade II was most common (59.17%) in the study of Siddiqui et al., [7]. Total 60% of our malignant patients had axillary lymph node metastasis on presentation. Textbooks too suggest that axillary lymph node metastasis is present up to 60% of symptomatic cases [10,12]. Siddiqui also reported metastasis in >3 axillary nodes in 40% cases [7]. None of our patients had bilateral breast involvement. Kuraparthy et al., reported bilateral malignancy in 2.5% cases [14]. Carcinoma of the breast is more common in nulliparous women and breast feeding appears to be protective [1]. Breast carcinoma risk is increased in current or past users of oral contraceptives, a risk that decreases as the interval after cessation of use increases [10]. In all 60% of our cases were parous with history of breast feeding. There is no history of oral contraceptive use in our patients. None of our malignant cases had any family history of breast malignancy. The overall presentation (age group affected, histological variant, size, staging, grading) of breast malignancy in our study has mostly similar results compared to other studies [2,3,6-8]. However, the other studies have not mentioned the parity, breast feeding history, oral contraceptive use and family history so figures were not available for comparison.

Surgeons are traditionally the first physician consulted for breast care and well trained surgeons have the greatest opportunity to achieve optimal outcomes for patients and their families [12]. Treatment of breast diseases in our society poses a problem because of illiteracy, poverty, social stigma and lack of standard healthcare in rural areas. Irrespective of education and socio-economic conditions, women generally are unwilling to allow themselves to be examined and treated for breast related problems particularly by male surgeons who far outnumber their female counterparts. There is also a lack of concern when the breast lesion is not accompanied by severe pain or gross distortion of morphology. Patients are often ignorant and casual about local hygiene which explains the large number of inflammatory and infective lesions. Breast self-examination is not popular and screening mammography is not in vogue generally. Routine use of screening mammography in women greater than 50 years of age reduces breast cancer mortality by 25% [12]. So the social and cultural factors and the lack of awareness explain

the large number of malignancies associated with adverse prognostic factors like advanced stage, grade and nodal metastasis.

Fibrocystic breast disease is classified as non-proliferative, proliferative without atypia, and proliferative with atypia [10]. The risk ratio for breast cancer in women with atypical ductal or lobular hyperplasia is approximately 4to 5 times the risk for development of breast cancer in the general population [1,10,12]. However, our study has not been able to classify and identify the cases of atypical hyperplasia. Hormone receptor study or immunohistochemistry and genetic studies were not possible due to financial constraint this can account to the limitation of the study.

CONCLUSION

Our study of breast lesions have yielded results comparable to that of other similar studies carried out in India and some of the South Asian countries over the last two decades. The results are closely similar with a few differences. A wide spectrum of breast pathology with specific lesion and typical presentation has been described in different age groups. Most of the malignant cases had adverse prognostic factors. Benign lesions with distressing symptoms however formed the majority. Female education, breast self examination, malignancy screening and awareness programmes should be encouraged and implemented to reduce morbidity and mortality related to breast lesion.

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