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Research Article

A Histopathological Study of Malignant Lesions of the Breast In a tertiary Care Centre

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Abstract:

Nowadays incidence of breast malignant lesions is on rising side in India, which can be attributed partly to increasing awareness and mostly due to changing lifestyle and increased hormone usage. Present study of malignant lesions of breast is a four year prospective study done including all the breast malignant lesions in the study period to know the incidence of malignant lesions of breast, age incidence, uni or bilaterality, histological variants and their biological behavior. This study shows the importance of early diagnosis of in-situ carcinomas and recognizing invasive carcinomas in early stages and of low grades before distant spread. This study also explains that the histological typing of the tumors is useful in understanding the morphological and biological behavior of the tumor as some types of carcinomas are aggressive in nature. Grading and staging is also has a major role in deciding the line of management (surgical, radiotherapy and medical) and in assessing the prognosis of the disease also.

Keywords: Breast, Neoplastic, Benign, Malignant lesions, Histopathology

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Introduction

Female breast is an organ with complex structure. Female breasts are paired organs which are functional for a lengthy period of time unlike in males, and respond to hormonal fluctuations. In recent past, the uterine cervical malignancies are on descending side and breast malignancies are on ascending side. Female breast lesions may be due to developmental disorders, inflammatory, benign epithelial and malignant lesions, or stromal tumours. In contrast, in male breast mostly gynaecomastia may be seen and carcinoma is rare. Hence male breast lesions are not included in this study.

Common presentation of breast lesions is as palpable lump, which is a sensitive issue and causes more anxiety to the patient. Benign breast lesions are found in earlier age than the malignant ones. Presenting lump may be of variable size and may be associated with other features like skin changes, nipple discharge, pain and lymphadenopathy etc[1].

Due to advanced diagnostic modalities like mammography , ultrasonography, immunohistochemistry and hormone receptor study along with conventional fine needle biopsy and histopathological study of core needle biopsy, more number of lesions are being detected to contribute the rising incidence rate.

Now in India, breast carcinoma is the second most common malignancy in females next to uterine cervical carcinoma[2]. Risk of malignant transformation is more in proliferative benign lesions and in lesions with atypia. Early and accurate diagnosis is more important in relieving the anxiety and for better prognosis. Particularly in malignant lesions, early intervention may save the life and reduce the morbidity and mortality in breast carcinoma cases.

Hence the current study is done in the cases attending to Government General Hospital, and breast specimens receiving in the department of Pathology, Siddhartha Medical College, Vijayawada to know the age incidence, histological spectrum of malignant tumors, distribution of various types of breast carcinomas and their behavior with prognostic importance.

Materials and Methods

Study period: four years (January 2014 to December 2017)

Study design: Prospective, Cross sectional and observational

Study material: all breast specimens including lumpectomy specimens, simple mastectomy and modified radical mastectomy specimens received during the study period in department of Pathology, Siddhartha Medical College, Vijayawada.

Inclusion: all the breast specimens received during study period in department of Pathology, SMC, Vijayawada, which were diagnosed as malignant breast lesions.

Exclusion: specimens other than breast, male breast specimens, non neoplastic and benign lesions of breast during the study period and breast malignant lesions before and after the study period.

Methodology: Our department receive good number of breast specimens regularly, and the material was sufficient for this prospective study of the breast malignant lesions. After receiving the specimen, personal and family history, complete clinical data, clinical diagnosis, indication for surgery with operative findings were recorded. During grossing the specimen, its weight, shape, measurements and consistency were noted. Sufficient number of sections were taken from suspicious and representative areas and exposed to step wise processing and paraffin embedding. Routine Haematoxyin and

Eosin staining were done. PAS and Reticulin like Special stains were used wherever they were needed[3,4].

A descriptive study of malignant lesions of female breast was done over a period of 4 years considering details of general incidence of breast lesions, contribution of neoplastic lesions and out of that neoplastic lesions ratio of benign and malignant lesions in particular. Age incidence of breast malignant lesions, and unilaterality (right or left) or bilaterality were also made out. Macro and microscopic appearances are studied and histopathological features of common and rare lesions were described.

Results

During the total study period of four years, 8234 specimens were received in the department of Pathology, Siddhartha Medical College, Vijayawada for histo pathological examination. Out of these 8234 specimens, 338(4.10%) were breast lesions which include 18 biopsies, lumpectomy specimens were 282 and 38 specimens were mastectomy specimens. Out of 338 breast specimens studied, 320 cases were diagnosed as neoplastic and remaining 18 specimens were identified as non neoplastic lesions of breast. Out of 320 neoplastic lesions, benign lesions were more common with contribution of 262 among 320 neoplastic lesions with 81.87%. Remaining 58 lesions which were diagnosed as malignant lesions were included in the present study.

Malignant breast lesions, 58 in number made 18.13% of neoplastic lesions (58 out of 320) and this malignant lesions of the breast contributed 0.70% of total biopsies received in the department (58 out of 8234) during the study period.

In this study, age of the patients ranged from 12 to 82 years with the mean age of 55years. The incidence of malignant lesions is observed peak in 5th decade as shown in Table 1. As the common presenting feature is the palpable lump in the breast, incidence of unilateral and bilateral lumps are shown in Table 2 and it is shown that unilateral lump is the more common presenting feature than the bilateral lumps. Based on the location of the breast lump, upper outer quadrant is the commonest site with 26 cases (44.83%), which is shown in Table 3.

After thorough microscopic ecamination, tumors are diagnosed and basically divided into insitu and invasive malignant tumours as shown in Table 4. More number of tumours were presented as invasive lesions, which indicates lack of awareness in these cases, otherwise these lesions might have diagnosed in the insitu stage or before itself. Out of 58 malignant lesions, only in 16 cases lymph nodes were received in which 10 cases show metastatic deposits of breast carcinoma.

Table1.Distribution of malignant breast tumors according to age

Age in yrs	No. of cases	Percentage
11 – 20	01	01.7
21 – 30	03	05.2
31 – 40	04	06.9
41 – 50	10	17.2
51 – 60	20	34.5
61 – 70	15	25.9
71 – 80	04	06.9
Above 80	01	01.7
TOTAL	58	100

Table2. Distribution of malignant breast tumors according to laterality of lump

laterality		No. of cases	Percentage
Unilateral lumps	Right	21	36.2
	Left	25	43.1
Bilateral lumps		12	20.7
Total		58	100

Table 3. Site wise distribution of malignant breast lumps

Site of the lump	No. of cases	percentage
u. o. quadrant	26	44.8
u. i. quadrant	05	08.6
l. o. quadrant	11	19.0
l. i. quadrant	04	06.9
Central	05	08.6
Multiple	03	05.2
Diffuse	04	06.9
Total	58	100

u.o – upper outer; u.i – upper inner
l.o – lower outer; l.i – lower inner

Table 4. Incidence of insitu and invasive malignant breast tumors

Type of lesion	No. of cases	percentage
Insitu	03	05.2
Invasive	55	94.8
Total	58	100

All 58 malignant lesions were histologically classified to know the general incidence and common age group occurrence and biological behavior of each group of lesions. Management, prognosis and quality of life are depend upon the type of the tumor, stage and grade of the tumour and so also on the involvement of regional lymphnodes or distant metastatic deposits. Simple and necessary statistical tools were used in data analysis and the results were presented as charts and tables.

All malignant tumors were graded according to Nottingham modification of Bloom-Richardson grading system[5]. Grade II was the common one and is comparable with almost all the other studies.

Discussion

Till the recent past, it was really a challenge to the surgeon, mainly in developing country like India where patients usually present in late stages due to lack of awareness and poor diagnostic methods[6]. In recent years the scenario is changed that incidence of breast carcinoma is on increasing side because of increased awareness, advanced technology in diagnostics. Hence the presentation of cases also relatively in

earlier stages. But still breast carcinoma kills yearly 376000 women worldwide and 900000 new cases are being added[7]. In developing countries like India these figures will be on much more on higher side.

Present study is a prospective study of malignant breast lesions in a period of 4 years in the department of Pathology, Siddhartha Medical College, Vijayawada. In this part, important features of the different lesions were discussed and compared with the other similar studies. In the present study as only female cases were included there is no gender study and comparison with other studies.

4.1 Age incidence: Present study showed majority cases (86%) in above 40 years age group which is comparable with the study of Kumar et al[8] and Reddy and Kalahasti et al[9] (85.1%). Seventy percent of the cases are observed in 6th and 7th decades which is comparable with the study of Malik R et al(2003) [10], Mudhokar et al (2012) [11], Ibrahim et al (2015) [12] and also with Jadhav Dhyaneshwar S et al[13] (73%).

4.2 laterality: Unilateral involvement was more common when compared to bilateral involvement. In unilareral cases left breast was more involved (54%) than the right breast (46%) and this is similar (52.63%) to Singh S K et al (2016)[14].

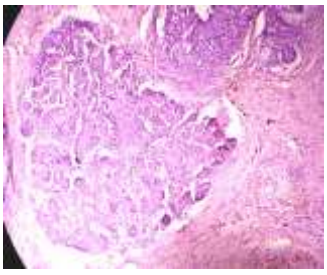

Fig.1 Ductal ca in situ H & E 400X

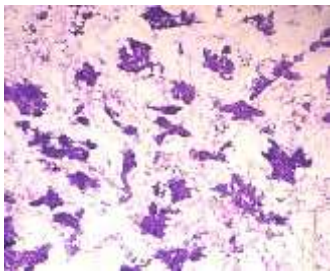

Fig.2 Ductal ca. Invasive H & E 400X

4.3 Site incidence: regarding the location of the palpable lump, upper outer quadrant stood first with 45% of the cases. Next common is lower outer quadrant with 19%. These findings go with the study of Mudholkar et al (42%) but differed with Reddy and Kalahasti et al in which was only 22.6% cases were recorded in upper outer quadrant.

4.4 Histopathological typing: in the present study, invasive ductal carcinoma was the commonest malignancy with 49 cases (89.09 %). This is comparable with almost all the peer studies like Mudhokar et al (2012), Dayanand et al (2015), Ibrahim et al (2015), Kumar et al and Reddy and Kalahasti et al. Histopathological distribution showed that out of 58 cases, 3 cases (5.17%) were insitu carcinomas and remaining 55 were invasive carcinomas (94.83%).

Out of 3 insitu carcinomas, 2 were Ductal Carcinoma In-Situ (DCIS) and the other 1 is Lobular Carcinoma In-Situ (LCIS). Invasive Ductal Caricinoma was the major contribution of invasive carcinomas with 49 cases out of 55 invasive malignant lesions (89.09%). This is in correlation with the studies of Mudhokar et al (2012), Dayanand et al (2015) [15] and Jadhav Dhyaneshwar S et al (2017).

Table 5. Histological distribution of malignant breast tumors

Histological type of lesions		No. of cases	Percentage
Insitu carcinoma	Ductal	02	03.5
	Lobular	01	01.7
Invasive carcinoma	Ductal	49	84.3
	Medullary	02	03.5
	Mucinous	02	03.5
	Undiffer.	02	03.5
Total		58	100

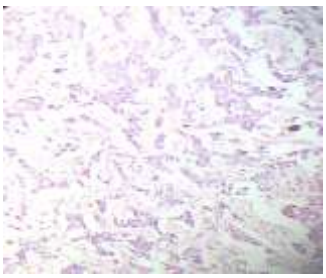

Fig.3 Mucinous carcinoma H & E 400X

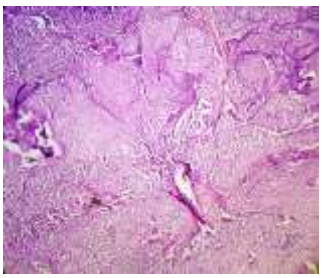

Fig.4 Medullary carcinoma H & E 400X

4.5 Lymph nodes: Axillary lymph nodes were received in 16 cases, of which 09 cases showed metastatic deposits (62.5%). This is similar with study of Mudhokar et al (2012) which showed 66% cases with metastatic deposits and with the study of Sulhyan K R et al (2017)[16] with 61.53%.

4.6 Other features: Adjacent breast showed in most cases fibrocystic change as associating lesion. In some cases benign lesion like fibroadenoma was seen. Few cases showed non specific inflammation.

4.7 Sensitivity and Specificity: In the present study Sensitivity and Specificity were found to be 92.26% and 93.86% respectively. These values go with the study of Jadhav Dhyaneshwar S et al (2017).

Conclusions

In the present study, 58 malignant lesions of the female breast were studied which comprised of 0.70% of the total received histopathological samples in the study period. This study shows the incidence of the malignant breast lesions is peak in 6th and 7th decades of the age. Left breast is more involved than the right breast. Upper outer quadrant is the common site where the palpable breast lump is found in malignant cases.

Histopathological typing shows that the infiltrating ductal carcinoma is the commonest lesion. This study shows the importance of diagnosing in-situ carcinomas and differentiating from invasive carcinomas. Staging of the malignant lesions is helpful in assessing the patient's risk and tailormade management can be provided in each case, which include local, regional and systemic (surgical, radiotherapy and medical) management.

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Reference

[1] Jain SB, Jain I, Srivastava J, Jain B. A clinicopathological study of breast lumps in patients presenting in surgery OPD in a referral hospital in
[2] Madhya Pradesh, India. Int J Current Microbiol App Sci. 2015;4(8):919-23.
[3] Lakhani S, Ellis I O, Schnitt S J, Tan P H, Van der vijver M J World Health Organization Classification of tumours of breast, Lyon, IARC press, 2012.
[4] Bancroft's Theory and Practice of Histological Techniques, 7th edition(2013) pages 80 to 163.
[5] Lynch's Medical Laboratory technology, Stanley S. Raphael, Third edition.
[6] Bloom HJ, Richardson WW. Histological grading and prognosis in breast cancer; A study of 1409 cases of which 359 have been followed for 15 years. Br J Cancer 1957;11:359-77.
[7] Kene TS, Odigie VI, Yusufu LMD, Shehu SM & Kase JT. Pattern of presentation and survival of breast cancer in a Teaching Hospital in North Western Nigeria. Oman Medical Journal. 2010;25:104-7.
[8] The State of World Health. The World Health report 1997- Conquering suffering, enriching humanity. World Health Forum. 1997;18.
[9] Kumar R. A clinicopathologic study of breast lumps in Bhairahwa, Nepal. Asian Pac J Cancer Prev 2010;11:855-8.
[10] Reddy and Kalahasti: Histopathological Spectrum of Neoplastic and Non-neoplastic Breast Lesions: A Two Years Study, Int U Sci Stud 2017(11):158-162
[11] Malik R, Bharadwaj VK. Breast lesions in young females—a 20-year study for significance of early recognition. Indian journal of pathology & microbiology. 2003 Oct; 46(4):559-62.
[12] Mudholkar VG, Kawade SB, et al. Histopathological Study of Neoplastic Lesions of Breast .Indian Medical Gazette; 2012 Sep: 353-364.
[13] Ibrahim IM, Iliyasu Y, Mohammed AZ. Histopathological Review of Breast Tumors in Kano, Northern Nigeria. Sub-Saharan African J Med. 2015; 2(1):7–9.
[14] Jadhav Dhyaneshwar S. et al. / A Histopathological Study of Neoplastic and Non-Neoplastic Breast Lesions at a Rural Tertiary Care Centre in India, Indian Journal of Pathology:Research and Practice / Volume 6 Number 2 / April – June 2017, pg 387-392.
[15] Singh SK et al. A Clinico-pathological study of malignant breast lump in a tertiary care hospital in Kosi region of Bihar, International Surgery Journal/Jan-March 2016/Vol 3/I, 32-36.
[16] 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.
[17] Sulhyan K.R et al: Histopathological study of breast lesions Int J Med Res Rev 2017;5(01): 32-41.