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HISTOPATHOLOGICAL STUDY OF BREAST TUMOUR IN RIMS RANCHI – A RETROSPECTIVE STUDY

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ABSTRACT

Objective- To study the histopathological features of benign and malignant tumour of breast. To correlate the pathological findings with clinical parameter. Breast lesion can be of various types from inflammatory to benign to malignant. Some lesions are common in young females while others are more common in elderly age groups. **Design and Method-** It is a retrospective study performed in pathology department of RIMS, Ranchi. We have studied total 148 cases of breast tumours over period of 2 years from November 2019 to November 2021 in our institute. The specimen were received in histopathological section of our department. Detail gross examination of specimen was done followed by fixation, through sampling and tissue processing. The different tumour were studied by histopathological examination and analyzed. Neoplastic lesions were classified according to the WHO classification(2012). **Result-** Total 148 causes of breast tumour identified in which 75 cases had Fibroadenoma, 2 cases benign phylloid tumour, 64cases had invasive ductal carcinoma, 4 cases had ductal carcinoma in situ, 1 case had invasive lobular carcinoma, 1 case had dermatofibrosarcoma protuberance, 1 male patient had breast carcinoma. All the tumour involved upper outer quadrant more frequently, left breast involved most frequently. The benign tumour were seen most frequently in 2nd, 3rd and 4th decades. Most malignant tumour were seen between 30 to 40 years. **Conclusion-** In our study benign breast disease was the most commonly identified disease. Fibroadenoma was most common among benign disease. While invasive ductal carcinoma was found to be most common malignant lesion. Understanding the importance of diagnosis and triple assessment and planning for effective management either surgical or conservative is the key to management of breast lesion.

INTRODUCTION:

Breast lesion include inflammatory, benign and malignant conditions. Around 2 lakh cases of breast disease was diagnosed annually[1]. Breast diseases are more prevalent among females as compared to males and the pattern of breast disease and their etiology varies among different countries and ethnic groups[2]. Benign breast disease are more prevalent as compared to malignant as seen throughout the world[3]. Fibroadenoma are in greater frequency among the population constituting almost half of all cases of benign diseases[4]. Incidence of benign lesion is common in the second decade reaching on its peak at 4th decade of life[5]. Risk factor for benign and malignant breast diseases include low parity, nulliparity, low age at first birth and late menopause, highlighting the fact towards excessive circulating estrogen level[6,7]. Breast cancer is the most commonly diagnosed cancer accounting for 23% of all diagnosed cancer and the most common cause of death in woman worldwide. It is the 5th leading cause of death in both sexes combined[8]. Various neoplastic and non-neoplastic breast lesion specimen received in our histopathology section.

MATERIAL AND METHODS:

The present study was a retrospective study of 148 cases undertaken at the department of pathology in our institute, the specimens were received in different forms such as: excisional biopsies[75 cases], modified radical mastectomy [58 cases], simple mastectomy[10 cases], trucut biopsy[5 cases]. The clinical information was obtained from the biopsy requisition forms and the indoor case papers. Detailed gross examination was done and the specimens were fixed in 10% formalin followed by thorough sampling. For the malignant tumour, the deeper surface was inked for examination of deep surgical margin, after fixation representative tissue bits were taken from tumour proper, nipple and areola, deep surgical margin, breast and lymph node if available. The tissue bits were processed to make paraffin blocks. The sections were cut in 3-4 microns thickness and were stained with hematoxylin and eosin. Microscopic examination was done. The Neoplastic lesions were classified according to WHO classification 2012.

Invasive breast carcinoma was graded according to Nottingham modification of bloom richardson grading system. The neoplastic lesions were analysed according to age distribution, quadrant involvement, nature of specimen, and histopathology. The non-neoplastic lesions were studied according to the age distribution and histopathology.

RESULTS:

Histopathological analysis of all the cases is shown in table no. 1. Of the total 148 cases, 77 cases had benign tumour in which 75 cases had fibroadenoma, 2 cases had phylloid tumour. Fibroadenoma was the most common benign tumour followed by phylloid tumour. Total 73 malignant tumour were observed. The vast majority of cases with malignant tumour had invasive carcinoma- no special type(64 cases), followed by ductal carcinoma in situ (4 cases), invasive lobular carcinoma(2 cases), dermatofibrosarcoma protuberance(1 case), 1 case of breast carcinoma observed in male.

Table 1:Histopathological analysis of all the cases is shown in

Category	Diagnosis	No. Of Case	Percentage
Benign Tumour	Fibroadenoma	75	50.67%
	Benign Phylloid Tumour	2	1.35%
Malignant tumour	Invasive Carcinoma, no special type	64	43.24%
	Ductal Carcinoma In situ	4	2.70%
	Invasive lobular carcinoma	1	0.675%
	Dermatofibrosarcoma Protuberance	1	0.675%
Malignant Tumour of Male Breast	Invasive Ductal Carcinoma NOS	1	0.675%

Fibroadenoma was most frequently found in second decade followed by 3rd or 4th decade. There were no cases of benign tumour beyond 5th decade. In contrast to benign breast tumour all the cases of malignant tumour were beyond 4th decade. Lymph node metastasis could be studied in 58 cases of invasive carcinoma who had undergone modified radical mastectomy. Out of 51 cases of invasive carcinoma no special type, 35 cases 65.51% showed lymph node metastasis. Lymph node metastasis was not seen in any other type. Grading was done in 47 cases of invasive carcinoma. Out of these 37 cases, majority had, grade 2 invasive carcinoma.

DISCUSSION:

The breast tissue is comprised of peculiar epithelium and stroma which has the capability of changing into benign or malignant lesion. Duct and lobules are lined by two types of cells, and they are the luminal epithelial cells [9]. Majority of the benign spectrum of the lesions in the breast include Fibroadenoma, phylloids tumour, Mastitis, and breast abscess, whereas the malignant spectrum of lesion includes ductal carcinoma, lobular carcinoma, tubular carcinoma, mucinous carcinoma, medullary carcinoma, papillary carcinoma, and meta plastic carcinoma. Breast lesions always show a female preponderance when compared to incidences in male, and the Histopathological spectrum of breast lesions varies among different countries and ethnic groups[10]. The common predisposing condition for breast lesions include, low parity, late menopause. All these do only highlight the fact towards the excessive circulating estrogen[9,11].

Occurrence of benign breast lesions in our community is found to be 52% of all breast lesions. These findings are comparable with the studies done by Hatim et al[12]. Reported frequency of Fibroadenoma in England is 7.7% cases and in USA it is 8.5% cases[13]. In the study it is seen that benign lesions of breast were more common

which was about 83.4% in less than equivalent to 40 years age group. Whereas malignant lesions of the breast were more common which was about 85.1% in greater than 40 years age group, which correlates to the finding in the studies by kumar[14] and reddy et al[13]. In our study, the most common benign lesion is Fibroadenoma 50.67%, phylloid tumour, 1.35%, and carcinoma 46.62%. In our study the peak occurrence of Fibroadenoma was seen in 20-30 years followed by 11-20 years.

In our study the other benign lesion where fibroid tumour with an incidence of more than 1%. Of all fibro epithelial breast diseases phylloid's tumour comprises for 1 to 2% and has a peak occurrence in the 31 to 40 years age groups. The pathognomonic pattern of this disease lesion is that it has marked introduction growth of intralobular stroma with leave like projections[9]. In the current study, invasive ductal carcinoma NOS, 65 cases (43.24%) is the most common malignant breast lesions. Due to its localised invasion, lymph node spread and distant metastasis it has a high mortality rate. Invasive type carcinoma is usually associated with poor prognosis. The screening process should be done in all the women of age greater than 20 years as the peak age of incidence of benign breast lesions was the 3rd decade(21-30) years and malignant lesions were in the 4th decade, so that most of the breast disease can be diagnosed early and treated at the earliest, the knowledge regarding the risk of breast cancer should be spread across the globe[9].

Table 2:-Showing Age Wise Distribution Of Non Neoplastic Lesions

CATEGORY	DIAGNOSIS	11-20	21-30	31-40	41-50	51-60	61-70
Benign	Fibroadenoma	20	40	15	-	-	-
	Phylloids	-	-	2	-	-	-
Malignant	Infiltrative Ductal Carcinoma(Not otherwise specified)	-	-	3	20	38	4
	Ductal Carcinoma In Situ	-	-	-	2	1	1
	Lobular Carcinoma	-	-	-	-	-	1
	Dermatofibro Sarcoma Protuberance	-	-	1	-	-	-

CONCLUSION

Benign Breast disease is heterogeneous group of disorders of breast in females and is more common than malignant lesions. Histopathological examination still plays an important role in differentiating benign and malignant lesions. In the present study most common benign breast lesion is Fibroadenoma with an incidence of 50.67% and the most common malignant breast lesion. Infiltrative ductal carcinoma with an incidence of 43.24%. The optimal incidence of benign lesion of breast is seen in the age group of 21-30 years and the peak incidents of malignant lesions of the breast is seen in 51-60 years.

This study highlights the significance of identifying and treating benign breast lesions at an early stage and also differentiating benign breast lesions from in situ and invasive breast carcinoma. More importance should be given to assess and diagnose breast carcinoma by routine clinical, radiological, cytological and histological method sothat appropriate treatment, modalities can be initiated. Proper breast cancer awareness study and screening program should be conducted across women of all strata, so that basic training and motivation can be given to women so that they report to the doctors immediately once a lump is noticed, this can reduce the mortality and morbidity associated with breast tumours.

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