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Original Research Paper

Pathology

BREAST CANCER: DEMOGRAPHIC CHARACTERSTICS AND CLINICOPATHOLOGICAL PRESENTATION OF PATIENTS IN EASTERN UTTAR PRADESH, INDIA

Dr Pallavi Singh Sabal	Junior resident, Dept of Pathology, BRD Medical College, Gorakhpur
Dr Shaila Mitra	Professor& Head, Dept of Pathology BRD Medical College, Gorakhpur
Dr Vibha Singh	Assistant Professor, Dept of Pathology, BRD Medical College Gorakhpur
Dr Mayank Jain	Senior Resident, Dept of Pathology, BRD Medical College Gorakhpur

ABSTRACT Worldwide the breast cancer is the most common cancer in the female population. The disease is steadily rising in the developing world like India in the last decade. The breast lesions whether inflammatory, benign or malignant cause considerable anxiety in the patients many times leading to late presentation for diagnosis and treatment. Our study covers the population of eastern Uttar Pradesh comprising mainly of rural population where awareness for the disease is still bit low. The aim of the study was to provide an eagle view scan of the spectrum of breast diseases according to clinical presentation,age and histopathological correlation in this population so that target population can be focussed in better way in terms of early diagnosis and treatment.

KEYWORDS :

INTRODUCTION

Cancer breast is the most common malignancy in women worldwide, it accounts for 23% of total new cancer. It is the main cause of death in women due to malignancy. In 2018, it was estimated that 627,000 women died from breast cancer **(WHO 2019)**

In India it is the most common cancer among women according to National cancer registry programme 2011 report.[1] Worldwide it is the most common non-skin cancer in females.[2] By the year 2030 global burden of breast cancer will be more than two million every year.[3] At present the mortality rate for breast cancer in India is 11.1per 10,000.[4]

The breast is the glandular organ, which continuously changes physiologically throughout the reproductive age group and after that in women under the influence of hormones. Various breast structures give rise to different types of lesions, and clinical presentation varies from discomfort, pain, Lump with pain/painless, skin changes and, more importantly anxiety.

A breast lump in the breast is the most common clinical presentation followed only by pain which is the second commonest presentation[7]. Histopathologically, a broad spectrum of pathological alterations is seen in breast lesions ranging from various types from inflammatory and benign conditions to life-altering malignant lesions like invasive cancers[8,9]. Although benign breast lesions are the most commonly diagnosed condition, it is also the most neglected clinical symptoms in developing countries, especially in the rural population[7,10,11]. The recognition of the various Non-Neoplastic and Neoplastic breast conditions is important, which are diagnosed by clinically and Radiological features but confirmed by Fine Needle Aspiration Cytology (FNAC) and Histopathological Examination (HPE) for differential diagnosis and also for the timely intervention and management [12]. The most common benign lesion of the breast is Fibroadenoma, and the commonest malignant lesion is Invasive Ductal Carcinoma (IDC). Few rare malignancies like Mucinous and Metaplastic carcinoma are also present[13,14,15].

The incidence of Breast cancer is also on the rise in India, which is multifactorial most important is hormonal and so to some extent the lifestyle. Breast cancer is the second most common malignancy in the female population in India, the first being Carcinoma cervix The median age of breast cancer incidence in India is on an average ten years less than the western population. [16,17]. Diagnosis of breast cancer in young women may be difficult and diagnosed late as breast lumps are more likely to be interpreted as benign lesions because of the lower incidence rate of malignancy compared to older women[18]. Mammary tuberculosis has been estimated to be 0.1 % of breast lesions examined histologically, and it constitutes about 3–4.5 % of surgically treated Breast diseases in developing countries[19]. The present study was undertaken to analyze the clinical presentation with diagnosis and correlate with histopathological data. The incidence of breast lesions was not studied in this population of Uttar Pradesh East in any of recent study.

MATERIAL AND METHODS-

The data was collected retrospectively from the histo pathology records of BRD Medical College , a tertiary care center and medical college serving the population in the Uttar Pradesh East state bordering the Bihar and Nepal. The specimen data was collected for the period of two-year from 2021 to 2022. The specimen was received in 10% buffered formalin and processed as per routine HPE laboratory procedure and then embedded in Paraffin to prepare blocks. A total of 110 samples were collected. The sections were stained with H & E stains. All the specimens reported with the complete clinical and histopathological diagnosis were included in the study. The age, sex, presenting complaints and histopathological features were recorded from the MRD section with permission of the authority concerned. No ethical consideration was required since no patients or live animals were subjected in the present study.

RESULTS-

In the present study, 110 specimen data with clinical presentation was collected for two years.Out of 110 cases of various breast lesions studied, 67 cases (60.9%) were benign and 43 (39.1%) cases were malignant lesions.

All the cases were between 15-70 years of age. The maximum incidence (34.5%) were in age group 21-30 years. The age of benign cases range from 15-50 years with majority of cases (55.3%) falling in between 21-30 years of age , while the age of malignant cases ranges from 21-70 years with majority of cases (51.1%) in between 41-50 years of age. The youngest patient was 29 years and oldest was of 67 years among malignant breast lesions. Out of 110 cases, 107 (97.2%) cases

were females and 03 cases (2.8%) were males in the present study with M:F ratio of 1:35.6 .Majority of the cases were Hindus (72.7%) and most of them were from rural areas. (74.5%)Multiparity was seen in 99 (92.5%) cases; while 8 (7.5%) cases were nulliparous.

Premenopausal cases accounted for 63.5 % of the study population, 41 cases (36.5%) were postmenopausal in nature. The predominant clinical feature of patients with benign breast disease was breast lump. Maximum number of patients presented with painless lump i.e. 45 cases (67.3%). 22.4% of cases had associated breast pain (mastalgia) while 2 cases (2.9%) had associated nipple discharge. 4 cases (5.9%) presented only with mastalgia. The most common clinical presentation of malignant breast lesion was painless lump seen in 24 cases (55.8%). Other associated features were nipple changes in 9 cases (20.9%), skin involvement in 7 patients (16.2%) while 3 cases (7.1%) presented with associated axillary lump.

Table1. Clinical Presentation Of Patients With Benign Breast Lesions

CLINICAL PRESENTATION	NUMBER OF CASES (NO.)	PERCENTAGE (%)
Breast lump only	45	67.3
Breast lump+ Pain	15	22.4
Pain only	04	5.9
Breast lump + Nipple discharge	02	2.9
Breast lump +Pain + Nipple discharge	01	1.4
Total	67	100

Table 2. Clinical Presentation Of Patients With Malignant Breast Lesionsclinical Presentationnumber Of Cases

CLINICAL PRESENTATION	NUMBER OF CASES (NO.)	PERCENTAGE (%)
Lump only	24	55.8
Lump+ Nipple Changes	9	20.9
Lump + Skin changes	7	16.2
A/W axillary lump	3	7.1
Total	43	100

Out of 67 benign cases, 37 (55.2%) were right sided, 28 (41.8%) were left sided and 02 (2.9%) were bilateral whereas out of 42 malignant cases 22 (51.1%) were left sided, 18 (41.8%) right sided and 03 (6.9%) presented with bilateral breast lumps.

Upper outer quadrant was the most commonly involved quadrant among benign 29 (43.2%) as well as malignant 22 (51.1%) breast lesions. This was followed by lower inner quadrant (23.8%) in benign cases whereas lower outer quadrant was the second most common quadrant involved in malignant cases with 7 (17.6%) cases.

Specimens were received through different surgical procedures. Majority (53.6%) were received through excisional biopsy followed by 40 cases of (36.3%) of modified radical mastectomy.Majority of benign (65.6%) as well as malignant (51.1%) tumours were of the size between 2-5cm.

Maximum 50 (45.4%) cases were of fibroadenoma, followed by invasive ductal carcinoma 38 (34.5%). Also fibroadenoma was the most common benign lesion (74.6%) and invasive ductal carcinoma was the most common malignant lesion (88.3%) of breast.

Table 3. Distribution Of Cases According To Histo pathological Diagnosis Of Benign Breast Lesions

S. No	HISTOPATHOLOGICAL DIAGNOSIS	NUMBER OF CASES	PERCENTAGE (%)
A.	Non proliferative breast changes		
	Fibroadenoma	50	74.6%
	Fibrocystic disease	6	8.9%
	Benign Phyllodes	3	4.4%
	Gynecomastia	2	2.9%
	Fibroadenosis	3	4.4%
	Fibroadenoma with keratinous cyst	1	1.7%
	Total	65	97.0%
B.	Proliferative disease with atypia		
	Atypical Ductal hyperplasia	02	2.9%
	Total	67	100

Table 4. Distribution Of Cases According To Histo pathological Diagnosis Of Malignant Breast Lesions

S. NO.	HISTOPATHOLOGICAL DIAGNOSIS	NUMBER OF CASES	PERCENTAGE (%)
A.	Carcinoma in situ.		
	Ductal Carcinoma in situ(DCIS)		
	High grade DCIS	01	2.4%
	Intermediate grade DCIS	00	0.0%
	Low grade DCIS	01	2.4%
	Total	02	4.8%
B.	Invasive Carcinoma		
	Invasive Ductal Carcinoma, no special type	38	88.3%
	Lobular Carcinoma	01	2.4%
	Infiltrating micropapillary carcinoma	01	2.4%
	Mucinous Carcinoma	01	2.4%
	Total	41	95.3%
	Total no. of cases	43	100%

Histological grading of malignant breast tumors showed majority (46.5%,20 cases) were Grade II followed by 14 cases (32.5%) of Grade III. 21.0% of cases belonged to Grade I invasive carcinoma.

Out of total 43 malignant breast tumors ; 44.1% did not show any metastasis. Metastasis to 1-3 lymph nodes was observed in 23.3% (10 cases) whereas in 14 cases (32.6%) metastasis was found to be in 4 or more lymph nodes.

Distribution of malignant group according to staging revealed 58 % of cases i.e 25 out of 43 in stage III and IV while 18 belonged to stage I and II.

DISCUSSION-

The incidence of breast cancer is rising in the Indian subcontinent mainly because of the awareness programs like introducing self-examination of breasts and the evolution of social media to the common man[8]. The advantage of detecting the breast lesion early is significant, although it gives people anxiety but prompts them to seek medical advice also earlier[10]. But according to the study by Philip et al. [11], There is a delay in seeking medical advice ranging from 2 weeks to 48 months. In the present study, 96% of patients with breast diseases present with lumps either with or without pain. This finding is more closely correlates with the results of Sarkar et al. 2018[7]. Charles et al.2018[10] and Priya et al. 2020[17]. 8.1% of the patients presented with discharge from nipple is the least common presentation is similar to the study of Shailender et

al.[13]Charles et al. 2018. These all fall in the category of malignant lesions of the breast. Charles et al., in their study, states that the reason for not seeking medical consultancy at early stages of breast lesion suggests that it may be due to lack of awareness and absence of skin manifestation, which prompts the patient to wait for a more extended period. In the present study, the incidence of breast lesions was high in the 2nd and 3rd decade, with most of them falling on the category of a benign breast lesions, including benign neoplasm. The average age of presentation was 29.5 years. Fibroadenoma was the most common benign This is similar to the studies of Honey bhasker et al. 2018[5] Savitha et al. 2015[6] Saurav sarkar et al. 2018.[7] In our study, the peak incidence of malignant breast disease was seen only in the 4th and 5th decade and incidence of malignant tumors in the 2nd and 3rd decade was not present, which is similar to the study of Geetanjali et al. 2018[10]. Savitha et al 2015[6] Saurav sarkar et al 2018. [7]. In the present study, 60.9% of breast lesions are benign, including neoplastic, inflammatory, and other mild conditions and 39% are malignant tumors. Fibroadenoma (74.6%) is the most common benign tumor of the breast, followed only by fibrocystic disease and phyllodes tumor. At the same time, invasive ductal carcinoma (88.3%) was the most common malignant condition. Our study correlates with most national and international analyses like Jyothi et al. 2018. Charles et al 2015, Phillipo et al 2016, Deepika et al 2018[8]. Gogoi et al. 2016. In their studies, they discuss the possibility of easy and early diagnosis of Fibroadenoma may be due to the clinical presentation as a well-formed lump, which easy to examine than a minimal ill-defined presentation of a malignant tumour. And also, Charles et al. discuss that since there is no skin manifestation in the early stages of malignancy and due to lack of awareness, the patient seeks medical advice very late in life breast lesion.

CONCLUSION-

This study was taken upto analyse the spectrum of breast lesions in eastern Uttar Pradesh with population comprising mostly of rural population. The lack of awareness and societal anxiety leads to late presentation of female patients. This type of study was taken for first time in this area. This study will provide an eagle eye scan of the breast lesions in the population. It will ensure awareness as well as scope of education in the rural population for self breast examination and early presentation at OPD which in turn will support early diagnosis and treatment.

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