



Original Article

Clinicopathological study of breast diseases: A hospital-based study

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Benign Breast Lesion;
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ABSTRACT

Background: Breast diseases are more common in women than men. Breasts undergo perpetual physical and physiological transition from puberty till death, which are related to menstruation, pregnancy, and menopause. The aim of this was to classify different types of the breast lesions and conduct its clinicopathological study.

Materials and Methods: Breast lesion tissue specimens were collected either as needle biopsy, lumpectomy, or mastectomy. For specimens fixation, 10% formal saline was used. Tissue was processed into paraffin blocks and stained using hematoxylin and eosin. Data were entered into Microsoft Excel spreadsheets and analyzed using percentages.

Results: Out of 150 patients, 97.3% were female and 2.7% were male. Nonneoplastic lesions and neoplastic lesions accounted for 11% and 89% of the cases in patients, respectively. Among the nonneoplastic lesions, chronic mastitis (47%) was most common. Fibroadenoma (76%) and invasive ductal carcinoma (91%) was the highest encountered benign and malignant neoplasm, respectively. Maximum (43%) of benign neoplasm incidence was encountered in the age-group 20–30 years; whereas in malignant neoplasm, it was 40–50 years (38%). Out of 150 patients, 55% were diagnosed with Nottingham grading system grade 2 of breast cancer.

Conclusion: Occurrence of neoplastic lesions in the breasts is comparatively higher than nonneoplastic lesions. Differentiating between benign and malignant lesions would be useful in the management and treatment of patients.

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INTRODUCTION

Breast diseases are more common in women than men. Breasts undergo perpetual physical and physiological transition from puberty till death, which are related to menstruation, pregnancy, and menopause.¹ Breast lesions are a diverse group of lesions that arise in the epithelial or other tissues of the mammary glands and are associated with vascular, inflammatory, or painful pathologies.² Approximately 200,000 cases of breast cancer are diagnosed annually.³

Majority of the problem faced by patients with breast disease can be as simple as breast eruption or as threatening

Table 1: Distribution according to age group:

Benign lesions	Frequency	%
Fibroadenoma	76	75.25
Fibroadenosis	9	8.94
Fibrocystic disease	8	7.93
Phyllodes	4	3.96
Lactating adenoma	3	2.97
Duct papilloma	1	0.99
Total	101	100

Table 2: Distribution pattern of malignant lesions of breast

Malignant lesion	Frequency	%
IDC	29	91
Phyllodes (malignant)	1	3
Invasive papillary carcinoma	1	3
Mucinous carcinoma	1	3
Total	32	100

as cancer. The lumps developed in the breast may result in carcinoma and cause soreness and deformity.⁴ A benign form of breast disease is more pervasive than malignant and inflammatory breast disease. Prevalence of benign breast lesions is found frequently in the second decade of life; it reaches the highest point at the fourth and fifth decade of life.⁵ Fibroadenomas constitute most of the cases of benign breast diseases (BBD). Late menopause, first child birth at a younger age, a woman who has never borne a child, and enormous circulating levels of estrogen are the risk factors associated with both benign and malignant breast diseases.^{6,7}

It is important for the doctors to recognize the lesion developed so as to categorize them. It is also important to evaluate the possibility of breast cancer and treat the patient accordingly.⁵ In this study, we epitomize the different types of breast lesions—both nonneoplastic and neoplastic, as well as clinical and pathological study of breast lesions.

MATERIALS AND METHODS

The present study was conducted at the Department of pathology, J. N. Medical college Belgavi (January 2013 to December 2014). Ethical clearance was obtained from the International Ethics Committee on Human Subjects Research, J. N. Medical College, Belgavi. Informed consent was obtained from all the study participants.

The study included 150 patients. Age of patients, clinical features, and other medical details were collected. Specimens (breast biopsy, lumpectomy, or mastectomy) were received from both the sexes of all age-groups. Lesions other than breast lesions in that area were excluded. The breast lesion

Table 3: Distribution pattern of patients under Nottingham grading system (NGS)

NGS	Number of patients	%
Grade 1	5	16
Grade 2	17	53
Grade 3	10	31
Total	32	100

samples were collected in 10% buffered formal saline and examined for its size, shape, color, and consistency. The presences of lymph nodes and changes in the nipple and skin were noted. Tissue sections were cut (4–5 µm) and embedded in paraffin. Hematoxylin, and eosin (H&E) dye were used for the staining procedure of the samples. Breast biopsy, lumpectomy, and mastectomy were performed according to the standard clinical protocol.⁸ Histological grading of the specimens was performed using NGS. For statistical analysis, data were entered into Microsoft excel sheet and analyzed for percentages.

RESULTS

A total of 150 patients were studied for more than 24 months. Among all the patients, breast lumps were the most common complaint. Out of 150 patients, 146 patients (97.3%) were female and 4 (2.7%) were male.

In this study, 104 (69.33%) patients complained of only breast lumps, 15 patients (10%) complained of breast lumps associated with pain, 4 (3%) patients showed breast lump, pain and fever; while 27 (18%) patients complained of nipple discharge/retraction along with a lump. Nonneoplastic and neoplastic lesions accounted for 11% and 89% of total patients, respectively in our findings. Nonneoplastic lesion comprised 47% of chronic mastitis, 29% of granulomatous mastitis, 18% of gynecomastia and 6% of accessory breast. Among the patients with neoplastic lesions, 76% and 24% of patients were diagnosed with benign and malignant lesions, respectively. Fibroadenoma and invasive ductal carcinoma (IDC) were the most commonly found benign and malignant lesion with 75% and 91%, respectively (Tables 1 and 2). Fibroadenoma was seen to occur in the reproductive age-group between 20 and 30 years, and IDC were seen among the age-group of 40–50 years. During the study, malignant lesions were found to be commonly associated with metastatic lymph node deposits primarily in the axillary group of the lymph nodes, as well as in other age-group. Out of 29 patients with invasive ductal carcinoma, 15 (47%) patients had axillary lymph node metastasis. One patient (3%) with metastasis of lymph node was reported in invasive papillary carcinoma.

Nottingham's grading system (NGS) was used for grading breast cancers. A total of 17 (53%) patients were reported with grade 2 breast cancer. However, 10 (31%) patients

were detected with grade 3 breast cancer followed by five (16%) patients with grade 1 breast cancer (Table 3).

DISCUSSION

The leading cause of death in Asia is due to breast cancer. Female breast malignancy has overtaken uterine cervix cancer.⁹ The constant rise (0.5–0.2% per annum) in incidence of breast cancers has been observed all over India across all age-groups, but mainly in age-group less than 45 years.¹⁰ Benign breast disease has been reported to occur at a higher frequency than malignancy in women. Patients suffering from BBD complain of breast lumps, pain in breast or discharge from the nipple.¹¹

The present study was conducted with 150 patients who complained of breast lumps. The study included 97.3% of male and 4% female. Aslam et al.¹² and Vissa Shanti et al.¹³ also reported higher incidence of breast lumps in women than men. Prajapati CL et al.¹⁴ reported that 550 of 664 patients complained of breast lumps. Out of 664 patients, 458 patients had painless lump, 59 patients had breast lumps associated with pain, and 33 had breast ulcer. Similarly, Aslam et al.¹² studied 254 cases and reported painless breast lumps in 202 of cases, followed by pain in breast in 38 cases, breast enlargement in three cases, two cases were presented as fever, and complaint of nipple retraction was seen in one case. Our study correlated well with other studies with regard to breast lump presenting as the most common complaint. Neoplastic lesions are found in higher percentage compared to nonneoplastic lesions, these findings are in consonance with the literature.^{12,15,16}

Chronic mastitis followed by granulomatous mastitis was frequently observed in nonneoplastic lesions in our findings, whereas past studies reported highest occurrence of breast abscess followed by chronic mastitis.^{16,17} Fibroadenoma forms highly movable, asymptomatic, compact, callus, and frequently palpable mass in the breasts. Their formation can be independent or multilateral, and frequently observed in the early reproductive age of women, which was similar to our results.⁵ Of all benign neoplastic lesions, 50% were found to be fibroadenoma, this was in similar with the accessible literature on benign breast disease.^{18,19} The prevalence of invasive ductal carcinoma in malignant lesions was reported by Sheikh NA et al.¹⁶ and Siddiqui MS et al.²⁰ Vissa Shanti et al.¹³ reported that 45.8% of the malignant lesion cases had metastasis in axillary lymph node out of 100 cases, which was found to be the identical with our studies. NGS was used to histologically grade the breast cancer. In our results, 55% of the patients presented grade 2 and 31% of patients with grade 3 breast cancer. NGS of histological grading was used in the literature, breast cancer of grade 2 was frequently observed.^{21,22}

Breast cancer has made it an endless baffle for the surgeons, oncologists, and pathologists due to the rise in the incidence

of breast carcinoma. The incidence of breast cancer deaths and sufferings can be reduced if the patients are timely accessed to early detection. Studies have shown that lack of awareness and late diagnosis are the main barrier in the treatment. This calls for an effective educational programs to create awareness.²³ Also, very few studies have been oriented towards clinical features, as well as histopathological profiling of breast diseases, which is vital in diagnosis. Thus, this study was performed to establish a groundwork to study various morphological types (nonneoplastic, benign, and malignant) and age distribution in and around Belgavi district.

CONCLUSION

FNAC is a very useful investigation which provides an accurate and cost-effective preoperative identification of cystic lesion of head and neck. A systematic approach coupled with an awareness of common pitfalls in diagnosis of cystic head and neck lesions can result in correct diagnosis in large number of cases. Sensitivity and specificity of FNAC in diagnosing the malignant lesion was significantly high making it an ideal first line of investigation.

Conflict of interest: None

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