



Histomorphological Profile Of Breast Cancer In A Tertiary Care Hospital

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Abstract

Background: The breasts, also called the mammary glands are highly modified apocrine sweat gland which is under the constant influence of sex hormones from puberty to menopause. Changes in the breast are most dynamic and profound during the reproductive years. Just as the endometrium. grows and ebbs with each menstrual cycle, and so does the breast. The breasts being composed of specialized epithelium and stroma are susceptible to numerous benign and malignant lesions.

Aim of the study: To evaluate and assess the Clinical, macroscopic and histopathological features of breast carcinoma and explore variations in histopathology.

Materials and Methods: A total of 25 cases of Modified Radical Mastectomy specimens were assessed from August 2021 to Feb 2022 in the Department of Pathology of Dr. B R Ambedkar medical college and Hospital, Bangalore.

Observation: In a Total of 25 cases most common variant of breast cancer was Infiltrating Ductal carcinoma with 19 cases(76%) followed by 2 papillary carcinomas and 2 lobular carcinomas with 1 each mixed carcinoma (ductal and lobular component)and 1 medullary carcinoma.

Conclusion: For adequate treatment, and clinical diagnosis, histopathological confirmation is mandatory. In this study, All patients were female with the most common age group of 40-50 years. The average tumor size was 2-3 cm with infiltrating ductal carcinoma being the most common histological variant.

Keywords: Breast cancer, clinical, grading, histopathological variants

Introduction

The Breast tissue is a modified sweat gland composed of epithelial and connective tissue elements. Therefore neoplasms arising from these elements have to be classified separately.¹Breast tissue in females is under the effect of various hormones and is subjected to constant physiological variations throughout the reproductive life and beyond.²Worldwide breast cancer is the most common cancer diagnosed in women.³In India the second most common malignancy after cervical cancer is carcinoma breast.⁴ women 20 per 1,

00,000.as per population-based cancer registry data, location wise, Bangalore ranks top in India
⁵Breastcancer incidence is increasing in all age groups primarily in those countries with lower social development index. Clinically breast cancer usually presents as a lump in the breast, pain, change in breast size, or discharge from the nipple.⁶Increased risk of breast cancer is associated with the late first pregnancy, lack of breastfeeding, late menopause, use of hormonal replacement therapy, smoking and obesity.⁷Recognition of different neoplastic and non-neoplastic breast lesions is important for the

Differential diagnosis from malignant lesions and ultimately for the management of the patient with breast disease⁸ The histopathological factors of breast tumors like tumor size, lymph node status, histological type, histological grade, presence or absence of hormone receptors and age of patient play crucial role in chemotherapy and radiotherapy.⁹This malignant neoplasm comprises several tumor subtypes with distinct etiology and clinical outcome¹⁰The objective of the study to estimate the frequency of different histopathological patterns of malignant neoplasm of breast.

Materials And Methods: This was a prospective study conducted from August 2021 to Feb 2022 in the Department of pathology of Dr. B R Ambedkar medical college and Hospital Bangalore. A total of 25 cases of Modified Radical Mastectomy (MRM) were reviewed by the department of surgery from Dr. B R Ambedkar medical college and Hospital Bangalore.MRM specimens with n residual tumor previous history of chemotherapy and radiotherapy were excluded from the study. Patients with different

age groups and palpable lumps were subjected to the study. All the specimens were fixed in 10% formalin. Fresh sections from tissue blocks were taken and stained with Hematoxylin and eosin. The tumors were classified and graded according to the Nottingham grading system and TNM staging. The results were analyzed and presented using relative tales

Result: In this study, all were female patients. The age range was between 20 to 80 years with the most patient coming in the age group of 40-50years (40%). A lump in the right breast was seen in 14 cases and the left breast in 10. And one was multicentric. The average tumor size was 2-3 cm (56%). Invasive ductal carcinoma was the leading histological presentation representing 76% followed by 2-papillary carcinoma, 2 lobular carcinomas, 1 mixed carcinoma, and 1 medullary carcinoma. Most tumors were moderately differentiated representing 76%.18 cases (72%) that were positive for metastasis for axillary lymph nodes and 05(20%) cases were positive for lymphovascular invasion.

Tables:

Table 1:

Histological type	Number of cases	Percentage
Invasive ductal carcinoma	19	76%
Invasive lobular carcinoma	2	8%
Invasive papillary carcinoma	2	8%
Mixed intraductal and lobular carcinoma	1	4%
Medullary carcinoma	1	4%

Figures:

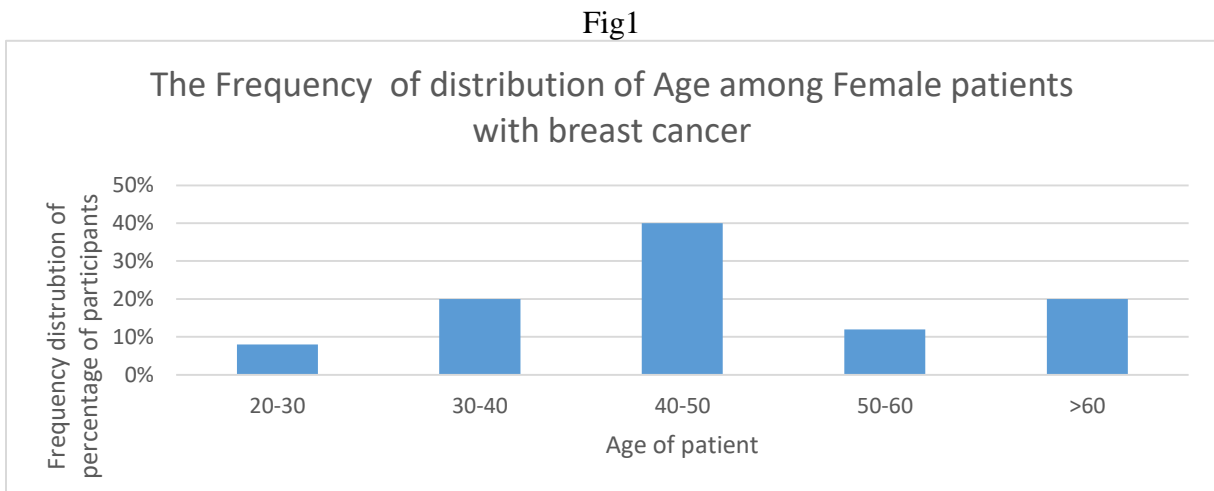


Fig 2: The distribution of different grades of breast cancer

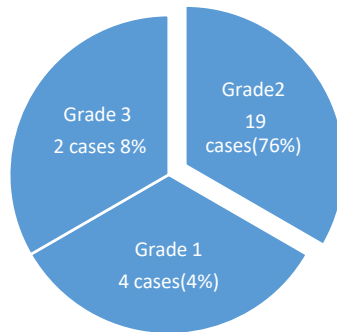


Fig 3: Frequency of Axillary lymph node Metastasis

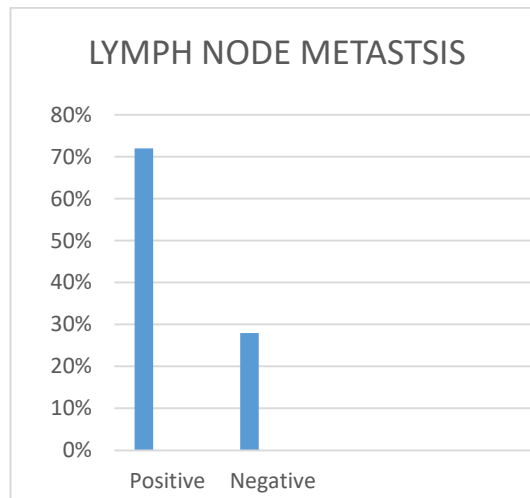


Figure 4: Invasive lobular carcinoma (ILC)

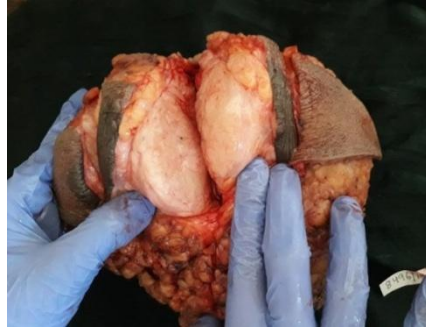


Figure 5: Indian file pattern ILC

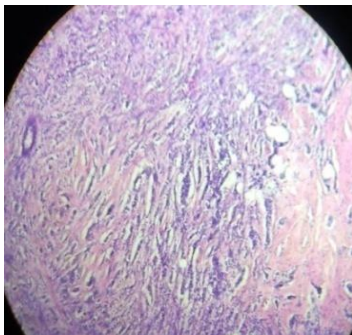


Figure 6: Infiltrating Ductal carcinoma

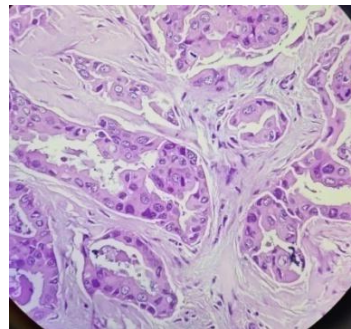


Figure 7: invasive papillary carcinoma

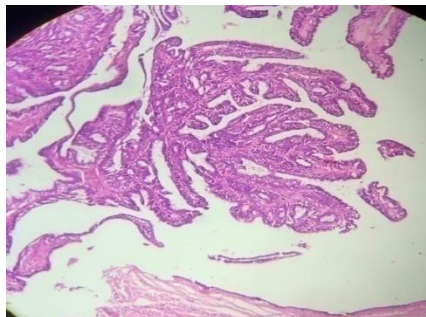
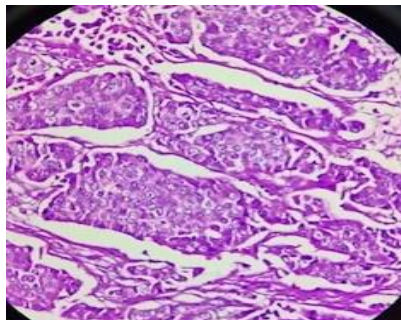


Figure 8: Syncytial arrangement in Medullary carcinoma



Discussion

Breast cancer is a public health concern and causes a huge burden of disease, especially among females worldwide. ¹¹epidemiological studies have indicated increased breast cancer in women actively contributing to social and professional life. ¹ In the present study we investigated data of all female patients with breast cancer from August 2021 to Feb 2022 in the Department of pathology of Dr. B R Ambedkar medical college and Hospital Bangalore. In our study, we found that 40% of the patient were in the age group of 40-50 years followed by >65 years similar to the studies comparable by I M Ibrahim et al¹², Thamir Hadi Alghamadi et al¹³In present study right breast was most commonly involved with 14 cases similarly to study conducted by Kaur G e al¹⁴. The average size of the tumor was 2-3 cm comparable to the study conducted by Kaur G et al ¹⁴. In our study, Invasive ductal carcinoma was the most common variant which was in concordance with Alfred Kaira et al ¹¹ and Thamir Hadi Alghamadi et al ¹³Invasive papillary carcinoma is a very rare subtype with a better prognosis than classic IDC. Invasive lobular carcinoma is the second distinct invasive mammary carcinoma other than IDC. The incidence of ICL is rising particularly in menopausal women. Medullary carcinoma is a rare special subtype of breast cancer it has a favorable prognosis. Axillary metastasis is common¹⁵. Histologically grading was based on Nottingham's modification of the Scraff bloom and Richardson grading system. In our study 19 cases were moderately differentiated similar to the study conducted by Reddy et al ¹⁶ and Pathak et al ⁹In present study 18 cases (72%) showed lymph node metastasis to axillary lymph node similar to the study by AI Diab A et al¹⁷and 5cases (20%) showed lymphovascular invasion Fig:2- Frequency of Histological Variants of Breast Carcinoma.

Conclusion

This study was conducted to analyze the histopathological profile of female breast cancer. We concluded that the peak incidence of disease was in 5th decade of life. Infiltrating breast carcinoma was the most common type of breast cancer. Most of the patient was in grade2. Policymakers should emphasize awareness campaigns for early and routine breast screening, early diagnosis, and early treatment. Our study puts the prognostic significance of

histopathological information in the treatment and planning of strategies.

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