



HISTOPATHOLOGICAL CHARACTERISTICS OF BREAST CANCER IN NAMS, BIR HOSPITAL IN NEPAL

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ABSTRACT

Introduction: Breast cancers are a varied group of lesions that differ in how they appear microscopically and how they behave biologically. There are two main types: in situ carcinomas and invasive breast carcinomas. In situ carcinomas refer to potentially malignant cells that grow within the breast but there is no evidence of spread in the nearby tissues when seen in routine microscopic examinations. Two types of in situ carcinomas are recognized; a common form is ductal carcinoma in situ (DCIS) and the less common form is lobular carcinoma in situ (LCIS). **Objectives:** This study aims to assess the profile of breast cancers, identified breast lumps at the undergoing histopathological evaluation, clinical findings and radiological reports with the patient surgical intervention, biopsy method (FNA, core needle, surgical and mastectomy) at the Department of Pathology in NAMS, Bir Hospital. **General Objective:** To find the histopathological characteristics of breast cancer undergoing surgical intervention and evaluation at Bir Hospital, NAMS.. **Specific Objective:** Types of biopsy methods (FNA, core needle, surgical and mastectomy) used to obtain the samples from the patients with breast diseases. Proportion of inflammatory, benign, and malignant breast diseases among the patients with breast diseases. And hence, metastatic breast cancer among the patients with breast diseases. **Methods:** This study design is a cross sectional descriptive type of study. Data collected from the histopathological records of 5 years between 14 April 2019 - 13 April 2024. Types of biopsy methods (FNA, core needle biopsy, surgical biopsy and mastectomy), collected from the Department of Pathology. **Result:** The diagnosis process of pathological findings, among 232 breast patients, 33 patients had undergone FNAC, 44 patients did Core needle biopsy, 60 patients surgical biopsy and 95 mastectomy. Among them, patients are classified into three breast diseases as per findings; Inflammatory ($n=81$), Benign ($n=36$), and Malignant ($n=115$). As seen, prime patients were in their 40s. Among 232, 68 and 164 patients had metastatic and non-metastatic breast cancers. Wherein, male pt. 2.58% , females pt. 97.41%. Ductal and lobular carcinoma in situ together included 3% of the total distinguished histopathological characters of breast cancer, whereas, remaining were classified in invasive breast carcinoma (NST). **Conclusion:** Establishing the breast pathology Invasive breast carcinoma (NST) is the major case. Age groups of 31-60 years patients were involved more than other age groups.

KEYWORDS : Breast, Cancer, Carcinoma, Metastasis

INTRODUCTION

Breast cancers are a varied group of lesions that differ in how they appear microscopically and how they behave biologically. Breast pathology Invasive breast carcinoma (NST) is most of the cases. There are two main types: in situ carcinomas and invasive breast carcinomas. In situ carcinomas refer to potentially malignant cells that grow within the breast but there is no evidence of spread in the nearby tissues when seen in routine microscopic examinations. A common form is ductal carcinoma in situ (DCIS) and the less common form is lobular carcinoma in situ (LCIS). The distinction between the two is primarily based upon the growth pattern and cytologic features of the lesions within the mammary ductal-lobular system. Invasive breast carcinomas, on the other hand, are aggressive forms of malignancies and include cancers like infiltrating ductal carcinoma, which starts in the milk ducts, and infiltrating lobular carcinomas, which begin in the breast lobules. There are also other less common types with distinct characteristics.^{1,2} Additionally, a unique and aggressive form called inflammatory breast cancer has also been recognized which is characterized by cancer cells that block the lymph vessels in the breast skin, causing the breast to appear swollen, red, and inflamed.³

Breast cancer is the most common cancer among women worldwide, accounting for about 12% of all new cancer cases and 25% of all cancers in women. In 2020, there were an estimated 2.3 million new cases of breast cancer and 685,000 deaths from this disease globally. The burden of breast cancer varies across regions and countries, with the highest incidence rates in North America, Europe and the lowest in Africa and Asia. However, the mortality rates are

disproportionately higher in low- and middle-income countries (LMIC), where most women are diagnosed at late stages and have limited access to timely and adequate treatment.⁴

According to the World Health Organization (WHO), breast cancer was the most common cancer among women in Nepal in 2020, with 5,900 new cases and 2,100 deaths.⁵ Analysis of the data from the Institute of Health Metrics and Evaluation's Global Burden of Diseases on cancer from Nepal revealed that the age-standardized incidence rate was 25.8 per 100,000 women and the mortality rate was 12.7 per 100,000 women.⁶ These rates are lower than the global averages, but they are expected to increase in the future due to population aging, urbanization, and lifestyle changes.⁷

METHODS AND DATA COLLECTION

This study design is a cross sectional descriptive type of study. The data is collected from histopathological records of 5 years between 14 April 2019 - 13 April 2024. Type of biopsy methods (FNA, core needle biopsy, surgical biopsy and mastectomy) used to obtain the samples from the patients with breast diseases referred from the Department of Surgery and collected from the Department of Pathology NAMS, Bir Hospital. We have collected data in male female ratio, age groups, pathological differences in inflammatory, benign, malignant breast diseases with metastasis and without metastasis. The analysis was performed using the statistical package (SPSS) version 20 mean standard deviation and percentage are computed.

Ethical clearance was approved by institutional Review Committee NAMS, Bir hospital.

The profile of breast cancers were identified at the Department of Surgery and undergoing histopathological evaluation at the Department of Pathology in our center. The information on the histopathological characteristics and relative frequencies of breast cancer cases diagnosed in the local setting, obtained from this study, is essential for improving diagnostic accuracy.

Findings

Table 1 Distribution Of The Study Patients According To Biopsy

Biopsy type	Frequency	Percentage
Fine Needle Aspiration	33	14.2 %
Core needle biopsy	44	19 %
Surgical biopsy	60	26%
Mastectomy	95	29.4%

Table 2 Distribution Of The Study Patients According To Biopsy Findings

Biopsy findings	Frequency	Percentage
Inflammatory breast diseases	81	35%
Benign breast diseases	36	15.5%
Malignant breast diseases	115	49.6%

Table 3 Proportion Of Patients With Metastatic Breast Cancer

Breast cancer according to metastasis	Frequency	Percentage
Breast cancer with metastasis	68	29.3 %
Breast cancer without metastasis	164	70.7 %

Table 4 Age Distribution Of The Study Patients

Age groups	Frequency	Percentage
< 10	-----	
11 to 20	-----	
21 to 30	10	4.3 %
31 to 40	54	23.3 %
41 to 50	71	30.6 %
51 to 60	54	23.3 %
61 to 70	16	6.9 %
71 to 80	17	7.3 %
> 80	10	4.31 %

Table 5 Sex Distribution Of The Study Patients

Sex	Frequency	Percentage
Male	6	2.58 %
Female	226	97.41 %

Table 6 Histopathological Characteristics Of Breast Cancer

Breast diseases	Frequency	Percentage
In situ carcinoma	7	3 %
Ductal carcinoma in situ	11	4.74%
Lobular carcinoma in situ	6	2.6 %
Invasive breast carcinoma (NST)	150	64.7 %
Infiltrating ductal carcinoma	6	2.6%
Invasive lobular carcinoma	11	4.74%
Mixed ductal and lobular carcinoma	6	2.6%
Mucinous carcinoma	9	3.87%
Tubular carcinoma	7	3 %
Medullary carcinoma	6	2.6 %
Others	13	5.6%

DISCUSSION

In the diagnosis process of pathological findings, among 232 breast patients, 33 (pt.14.2%) did FNAC including USG guided FNAC, 44 Core needle biopsy (pt.19%), 60 surgical biopsy, including Lumpectomy as surgical biopsy (pt.26%) and Mastectomy including Subcutaneous mastectomy, Simple mastectomy, Radical Mastectomy and Modified Radical Mastectomy - 29.4%. We computed frequency of breast pathology inflammatory breast disease including chronic inflammatory breast disease - 81 patients i.e, 35%, Benign breast disease - 36 i.e, 15.5% and Malignant breast pathology

showed 115 patients, 49.6% Table no. 3 shows that 232 among breast patients with breast cancer with metastasis invasive to near tissue or an organ is, 68 (pt. 29.3%) and 164 breast patients without metastasis is 164 patients, that is, 70.7%. Like we find distribution of age factor 10 breast patient age group 21-30 that is 4.3%, 31-40 years 23.3%, 41-50 (71, highest) patients pt.30.6%, 51-60 - 23.3%, 61-70 years breast patients (pt.6.9%). 71-80 years breast patients (pt.7.3%) and at last elderly patients more than 80 years consisted 4.31%.

Same as we have male and female frequency and percentage, male - 6 breast patients 2.58% and female patients - 226 that is 97.4%. The table no 6. shows carcinoma in situ 3% consisting of Ductal carcinoma in situ and Lobular carcinoma in situ. Invasive breast carcinoma (NST) is 150 in number among the 232 of breast breast patients that is 64.7 percent. Infiltrating ductal carcinoma - 2.6%, Invasive lobular carcinoma - 11 (pt.4.74%), Mixed ductal and lobular carcinoma - 6 (pt.2.6%), Mucinous carcinoma - 9 (pt. 3.87%), Tubular carcinoma 7 (pt. 3%), Medullary carcinoma - 6 (pt. 2.6%) and others consists of a total of 5.6%.

Limitations Of Study

This study has some limitations, where we kept all data, subcutaneous mastectomy, simple mastectomy, radical mastectomy and modified radical mastectomy in the same table as lumpectomy lumpectomy in surgical biopsy.

CONCLUSION

Establishing the breast pathology Invasive breast carcinoma (NST) is most often pt.64.7 percentage, 150 breast diseases patients among the 232 patients and age between 31-60 patients are involved more than other age groups.

Acknowledgments

Author's special thanks to IRB NAMS, Bir hospital for the approval of this research, same as, very thankful to the Department of Pathology, where we collected all data in a systematic way.

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