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# Pattern of Presentation of Mammography in a Developing Country

**Joshi BR**

Department of Radiology and Imaging, Institute of Medicine, Tribhuvan University, Kathmandu, Nepal

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## ABSTRACT

**Introduction:** Breast cancer is the second commonest cancer (7.2%) in Nepal and almost 54% of patients present in the advanced stage. It is the leading cause of cancer death in females. The objective of the study was to determine the type of mammography, composition of breast density and BIRADS category.

**Methods:** The study was conducted in a tertiary hospital from Jan 1st to Oct 30th of 2019 according to non-probability convenience sampling. A total of 388 persons were included in the study. The mammographic findings were assessed by categories based on the BIRADS system.

**Results:** Mammography for screening was 38 percent and diagnostic was 68 percent. Common breast compositions were B and C. More frequent BIRADS categories were seen in 1 and 2.

**Conclusion:** Dense breast is common in mammography. BIRADS categories 1 and 2 were more common than other categories.

***Keywords:*** *Breast Density; Goals; Mammography; Mass Screening*

## INTRODUCTION

Breast cancer is the most common cancer among women and also the second leading cause of death According to the American Cancer Society, about 1.3 million women are diagnosed with breast cancer annually worldwide.[1] Breast cancer is the second commonest cancer (7.2%) in Nepal and almost 54% of patients present in the advanced stage.[2] It is the leading cause of cancer death in females. The challenges we face are that the incidence of young women in the low-risk

**Correspondence to**: Dr. Birendra Raj Joshi
Institute of Medicine, Tribhuvan University
Kathmandu, Nepal
Email: bjoshi01@yahoo.com

population is alarmingly increasing.[3] Due to lack of awareness and screening for breast cancer, by the time this largely treatable disease is diagnosed, it is already in the advanced stage.

Mammography is a highly sensitive method for the detection of clinically occult breast cancer. Almost all works of literature recommend screening mammography for women 40years of age or older. This reduces breast cancer mortality by about 20-35% in women aged 50-69years and 20% in women aged 40-49years.[4,5,6] The American College of Radiology (ACR) has developed the Breast Imaging Reporting and Data System (BIRADS) since 1993, which is intended to standardize the terminology in mammographic reports, the assessment of the findings, and the recommendation of the action to be taken.[7] It seems that patients consult doctors later and are diagnosed with more advanced stages of breast cancer in developing nations.[8,9,10] The objective of the study was to determine the composition of breast density, BIRADS category and type of mammography.

## METHODS

This descriptive study was conducted in a tertiary hospital from Jan 1st to Oct 30th of 2019. A total of 388 persons were included in the study. After taking a complete history, the mammographic evaluation was performed in the craniocaudal and mediolateral views by Siemens mammography equipment. All the patients were included in the study, except for patients who had previous surgery or any manipulation such as excisional biopsy or breast prosthesis.

An expert radiologist evaluated all mammograms according to the BIRADS classification. The mammographic findings were assessed by categories based on the BIRADS system. (Table 1) BIRADS categories 1, 2 and 3 are classified as negative and BIRADS categories 4 and 5 are classified as positive test results.[11,12] (Table 2)

Breast composition was determined as in the following table:

***Table 1: Breast Composition***

| Composition | Description |
|---|---|
| A | Almost entirely fatty |
| B | Scattered amount of fibroglandular tissue |
| C | Heterogeneously dense |
| D | Extremely dense |

***Table 2: BIRADS categories; assessment and recommendations***

| BI-RADS US Category | Assessment | Follow- Up |
|---|---|---|
| BIRADS 0 | Need Additional Imaging Evaluation | Additional Imaging needed before a category can be assigned |
| BIRADS 1 | Negative | Continue annual screening mammography (for women over age 40years) |
| BIRADS 2 | Benign (Noncancerous) findings | Continue annual screening mammography (for women over age 40years) |
| BIRADS 3 | Probably benign | Receive a 6-months follow up mammogram |
| BIRADS 4 | Suspicious abnormality | May require biopsy |
| BIRADS 5 | Highly suggestive of (cancer) | Requires biopsy |
| BIRADS 6 | Known biopsy-proven malignancy (cancer) | Biopsy confirms the presence of cancer before treatment |

## RESULTS

Mammography for screening was 38 percent and diagnostic was 68 percent. Common breast composition were of B and C. (Table 3)

***Table 3: Composition of breast***

| Composition | Number | Percentage |
|---|---|---|
| A | 54 | 14 |
| B | 158 | 40 |
| C | 142 | 36 |
| D | 34 | 10 |

Mammographic findings according to BIRADS categories are summarized in Table 4. According to this categorization, more frequent positive BIRADS categories were seen in 1 and 2.

***Table 4: BIRADS category***

| BIRADS category | Number | Percentage |
|---|---|---|
| 0 | 32 | 8 |
| 1 | 152 | 39 |
| 2 | 136 | 35 |
| 3 | 42 | 10 |
| 4a | 4 | 1 |
| 4b | 2 | 1 |
| 4c | 12 | 3 |
| 5 | 8 | 2 |
| 6 | 4 | 1 |

## DISCUSSION

Mammography is still the main and most important method for breast cancer detection. Indeed, the most important advantage of mammography is detecting very small cancers.[13,14,15,16] The mammographic abnormality most frequently associated is not cancer in approximately 95% of the cases.[6]

Mammography for screening was 38 percent and diagnostic was 68 percent. The target population is from the urban community with no national breast cancer screening program in this study. However, only 16.4% cane for screening mammography in the study conducted by Ehsanbaksh et al., in Iran where breast cancer screening is not defined in the Iranian health care system.[17]

The most common breast composition was B. Forty-six percent was of dense composition in this study. Usually, more than 50% are dense in females of less than 50 years.[18] The most frequent BIRADS category reported by the radiologist was category 1, which is indicative of a benign breast lesion.

Ninety-two percent of the patients were in BIRADS categories 1, 2 and 3, which are negative test results. Seventy-four percent of these patients were classified as BIRADS categories 1 and 2 (Table 4). In a large study by Poplock et al., the frequency of BIRADS categories 1 and 2 were 91.11% and category 3 was detected in 7.10% of the patients.[19]

In this study, 10% of the patients were in category 3, which was similar to Paplock's study and a positive test result (BIRADS categories 4 and 5) was 8%. On the other hand, BIRADS categories 4 and 5 were 5% and 2%, respectively (Table 4), but in Poplock's study, these numbers were 1.63% and 0.16%, respectively. The mentioned differences could be due to the late admission of the patients.

In another study by Tuncbileh et al., clinical outcome mammograms of 7506 women were assessed in two groups; 91% of the patients were in the screening group and 9% were in the diagnostic group.[20]

There is a higher percent of screening mammographies in Tuncbileh's study compared to this study (91% versus 38%) and positive BIRADS categories are also significantly higher in the diagnostic group in his study.

Negative test results (BIRADS categories 1, 2 and 3) were detected in 91.3% of the patients; in which 89.3% were in the diagnostic group and 98.8% were in the screening group in the study by Ehsanbaksh.[17]

None of the study variables such as age, first menstrual period, and several pregnancies, oral contraceptive consumption and even a positive familial history of breast cancer were predictive parameters of BIRADS category determination except the mass in his study. MRI is more sensitive than mammography in high-risk women, but the specificity is lower and it is recommended for the screening of women at high risk for breast cancer and not for general population screening.[6]

## CONCLUSION

Mammography for screening was 38 percent and diagnostic was 68 percent. Common breast compositions were B and C in this study. BIRADS categories 1 and 2 were more common.

## CONFLICT OF INTEREST

None

## SOURCES OF FUNDING

None

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