

ROLE OF SCREENING MAMMOGRAM IN THE DETECTION OF DUCTAL CARCINOMA AND LOBULAR CARCINOMA

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Abstract: The objective of the current study was to evaluate the role of screening mammogram in the detection of Ductal Carcinoma (DC) and Lobular Carcinoma (LC), to compare which type of Ductal carcinoma is more common in specific age group (>40 and <40) and to investigate the clinical feature and symptoms of female patients having breast cancer. The Record was collected from women who were undergoing screening mammograms during October to December 2018 in PINUM cancer Hospital Faisalabad. Out of 89 patients, 83 had Ductal carcinoma and only 6 had lobular carcinoma that was assessed through screening mammogram. It was concluded from the research that DC can be easily detected in mammograms than LC. The DC is more common in age above 40 years. Patients with previous family history are at high risk for this type of cancer.

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INTRODUCTION

Breast cancer is the most commonly diagnosed cancer in women and the leading cause of death due to cancer. The incidence of breast cancer is increasing day by day (1). Every year, nearly a million women are affected with breast cancer, accounting for around 34% of all cases. Every year, more than 83 thousand patients of breast cancer are recorded in Pakistan (2). Approximately 40,000 women die due to breast cancer (3). It is affecting not only elder women, the younger unmarried girls cases are almost 15% (4). There has been a shocking rise in the prevalence of breast cancer in Pakistan than any Asian country and it is the most recurrent malignancy in women. (5).

Early-stage prognosis is good in breast cancer. The number of deaths can be reduced significantly with early detection, awareness, self-examination, screening and diagnostic tests and treatment (6). Patients who have had a mother or grandmother diagnosed with breast, colon, or ovarian cancer are at a higher chance of developing the disease. (7). Major causes of disease among women in Pakistan are aversion to breast-feeding, obesity and prolonged use of estrogens like birth spacing pills, deliver the first baby after 30

years as shown in Figure 1(8). Breast cancer may present with several symptoms but usually characterized by dimpling, pain in breast or nipple or skin irritation, inversion of nipple, thickening in the breast tissue and a lump. Other common signs may include, ulcers, deformity and discharge from the nipple (8). A nipple discharges other than breast milk, indicates metastatic disease. The most of invasive breast malignancies are discovered as a consequence of a mammography abnormality(9).

Breast cancer starts as a small lump, more often without pain. Most cancers develop in the upper outer quadrant. Sometimes breast cancer can extend to lymph nodes beneath the arm or nearby the collar bone and cause a lump or swelling there Figure 2(10,11).

A cancerous tumor composed of epithelial cells infiltrates to the adjacent tissues, causing metastases. Although it is a histologically kind of tumor, it is frequently used interchangeably with the term "cancer." (12,13). Ductal Carcinomas a breast cancer term that refers to a type of cell instead of a specific site. The term "ductal" refers to malignancy that started in the milk - producing glands, which are the

"pipes" that transport milk from the milk-producing glandular tissue to the nipple. Carcinoma is a form of cancer that starts in the skin and spreads to the vital organs, such as breasts. Lobular Carcinoma is a tumor kind, not a site of origin that is characterized by low density and vague borders. The asymptomatic women have a screening mammogram to look for small non-palpable abnormalities in the breasts shown in Figure 3 (11).

From 1987-1999, the prevalence of ductal carcinoma kept largely stable, while the prevalence of lobular carcinoma grew steadily. This increase poses a therapeutic challenge in that lobular carcinoma is much difficult to detect by physical examination and mammography than ductal cancer. (13).

METHODOLOGY:

From October to December 2018, data were collected during clinical visits by those women who were coming for screening mammograms in PINUM Cancer Hospital. Demographic and medical data including symptoms, types, and mammographic screening reports were recorded in Questionnaire Based Performa which was filled after conducting face to face interviews. Comprehensive information was composed of eighty-nine patients.

An appropriate statistical data analysis technique by using SPSS version 22 was applied in this study. Quantitative results were expressed as descriptive statistics and qualitative were in frequency and percentage.

RESULTS & DISCUSSION

This study was conducted at the Radiology Department of PINUM Cancer Hospital Faisalabad. A total of 89 patients who participated in this study who came for the Breast Screening Test. Only 7 were single, while remaining 82 were married. The percentage of ages which were affected

from breast cancer, about 16% women were below the age of 40 and 84% women were above the age of 40 years on screening Mammogram. Mostly patient above 40 year age had DC. Although DC can affect any age but it is more common in older age (Figure 4).

The patients coming for breast screening mammography have the following clinical features 45% had pain, 20% had nipple discharge, 30% had nipple inversion, 55% had lump involvement, 72.5% had lymph involvement and 15% had bloody discharge (Table 1).

Out of 89 patients, 83 had ductal carcinoma and 6 had lobular carcinoma which was assessed on a screening mammogram. Thus LC is more challenging to detect by screening mammography than DC (Figure 5).

Out of 40, 16 patients reported reoccurrence with majority having local reoccurrence and only 1 patient had distant reoccurrence. One patient had lobular carcinoma, while 12 had ductal carcinoma and 2 had ductal carcinoma in situ (Figure 6).

Table 2 shows frequency distribution of BIRADS category that out of 40 patients, 22(55%) were categorized 1, 10(25%) were categorized 2, 2(5%) were categorized 3, 4(10%) were categorized 4, 1(2.5%) was categorized 5 and 0(00%) were categorized 6.

Table 3 shows the number of patients suffering from the Staging and Grades types. Out of 40 patients, 4 were at 1 stage, 12 were at 2 stage, 7 were at 3 stage and 17 were at 4 stage in breast cancer and out of 40, 15 had Grade-II and 25 had Grade-III breast cancer. To detect lobular carcinoma further Ultrasonography (USG) of the breast was performed. USG was recommended when radiologists and technologists were doubtful after screening mammograms. Even some patients had LC which remains

undiagnosed or diagnosed late due to the decreased ability of a mammography machine and caused an increase in mortality rate. A research study conducted by Christopher in 2003 reported, that additional radiographic imaging tools, including ultrasound and MRI, are more effective than mammography in identifying LC, but these tools are not commonly used. From 2003 till now, no work had done for improvement of mammography machine although worldwide rate of LC patients increases day by day which is an alarming situation.

DC is easily detected by screening mammograms than LC. Lobular carcinoma is usually detected when it reaches an advance stage. Late diagnosis cause difficulty to manage breast cancer and increases the mortality rates. DC is more common in older age above 40 years. Patients with previous family history were observed at high risk for this type of cancer. High social support was observed especially from the patient's own family members (husband, son, daughter, father or mother) in Pakistan (Faisalabad) who supported them for screening mammography.

CONCLUSION

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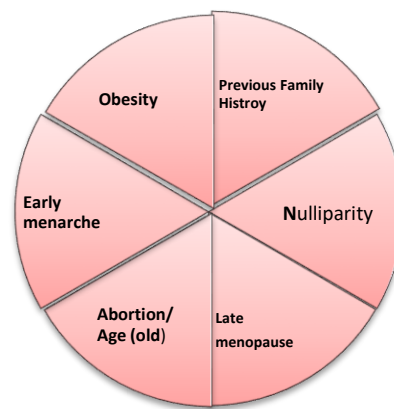


Figure 1: Major causes of disease among women in Pakistan

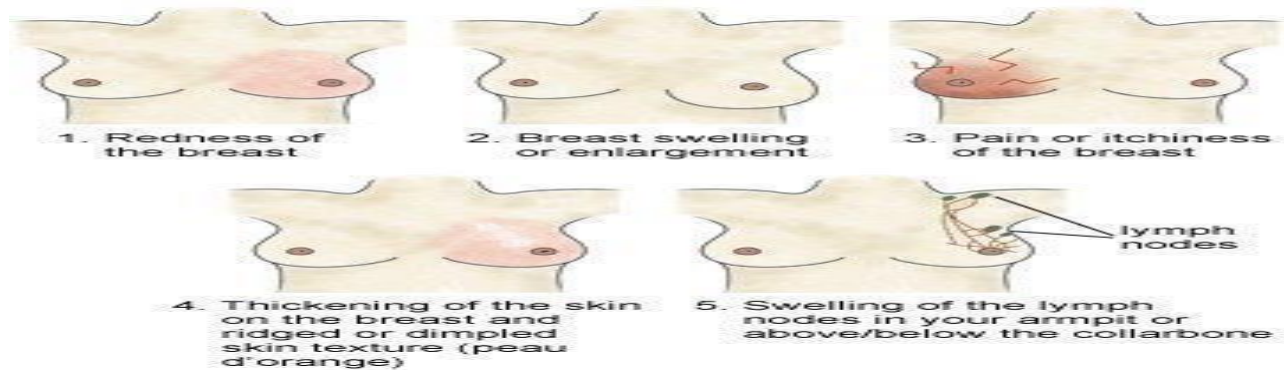


Figure 2: Different locations of breast cancer (9).



Figure 3: Mammogram having breast cancer

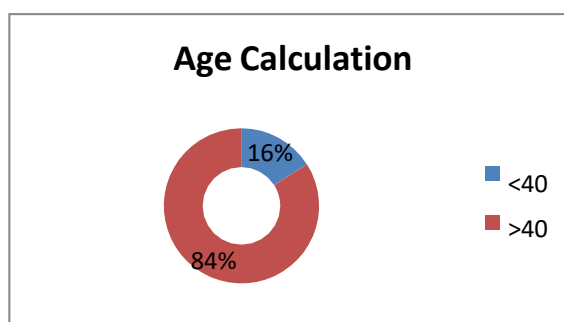


Figure 4: Percentage of age group

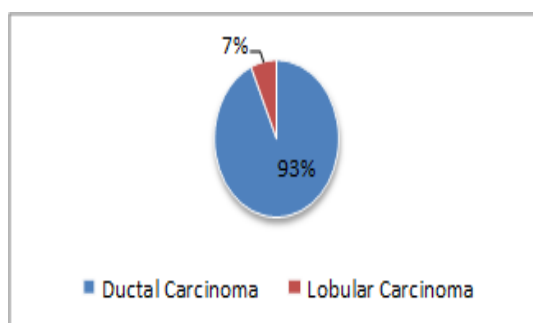


Figure 5: Percentage of types of breast carcinoma

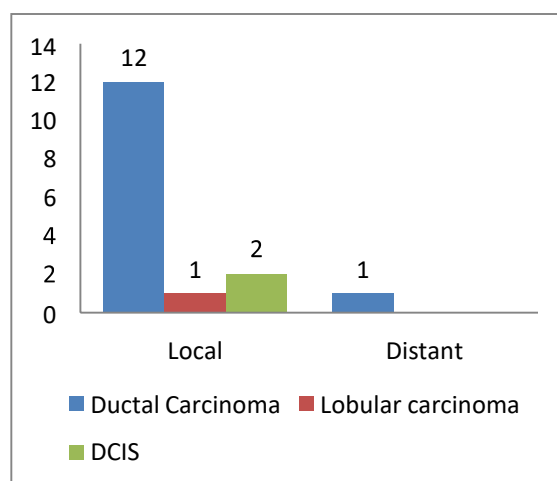


Figure. 06: Comparison of different types of carcinomas

Table 1: Percentage of clinical Features of patient with breast cancer

Clinical Features	Yes	No	Total
Pain	45%	55%	89(100%)
Nipple Discharge	20%	80%	89 (100%)
Nipple Inversion	30%	70%	89(100%)
Lump Involvement	55%	45%	89 (100%)
Lymph Involvement	72.5%	27.5%	89(100%)
Bloody Discharge	15%	85%	89 (100%)

Table 2: Frequency distribution of BIRADS category

Category	Frequency	Percentage (%)
1.00	22	55
2.00	10	25
3.00	2	5
4.00	4	10
5.00	1	2.5
6.00	0	00
Total	40	100

Table 3: Number of patients suffering from T staging and Grades types

T Staging	No of Patients	Grades	No of Patients
1	4	I	0
2	12	II	15
3	7	III	25
4	17		
Total	40	Total	40