TRIPLE ASSESSMENT IN THE DIAGNOSIS OF CARCINOMA BREAST: MAMMOGRAPHY ALONGWITH CLINICAL SYMPTOMATOLOGY

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ABSTRACT

Objective: To determine the clinical symptoms and mammographic findings in patients of carcinoma breast.

Study Design: Validation study.

Place and Duration of Study: Armed Forces Institute of Radiology and Imaging Rawalpindi, from January 2011 to Dec 2011.

Patients and Methods: Women of > 30 years of age including premenopausal and postmenopausal with positive findings on histopathology were included in the study. Pregnant women, breast-feeding women, women younger than 30 years old (in whom only sonography was performed) were excluded from the study. Total 57 female patients were included in the study through non-probability consecutive sampling.

Results: Mean age of the patients was 52.8 years (SD = 10.3). Age range of the patients was between 32–72 years. Maximum patients were in the age group of 40 - 50 years. A total of 42.1% patients reported with complaint of lump and mastalgia while 29.8% with lump alone. As far as mammographic findings are concerned speculated mass with axillary lymphadenopathy was the major finding. Histopathological results showed that most common malignant mass was invasive ductal carcinoma (89.5%).

Conclusion: Mammography is the mainstay for evaluation of breast cancer but only patients with the complaints of lump and mastalgia should be evaluated through mammography to avoid unnecessary evaluation.

Keywords: Carcinoma, Mammography, Ultrasonography.

INTRODUCTION

Carcinoma breast is the commonest malignancy in the females. Early diagnosis is vital because of the better prognosis of the smaller non-palpable lesions and mammography plays key role in this regard and hence helps reduce mortality due to the life threatening carcinoma[1]. Risk factors including age, family history, early menopause, nulliparity, and dietary factors are reported associations in literature[2]. Triple assessment including physical examination, radiological imaging and FNAC can diagnose 95% cases of breast carcinoma[3]. Standard techniques for breast imaging are screen film X-ray mammography and real time ultrasound. Mammography remains the most cost effective screening investigation with sensitivity of 77.3% and specificity of 98.7%[4]. It has played key role in significant increase in the detection of cases of ductal carcinoma in situ from 5% to 25-30%[4-6]. Mammography is also an important screening tool and has been shown to detect 30-50% recurrences after breast conservation therapy[7]. However in younger patients with dense glandular parenchyma, it should be supplemented with another imaging modality to increase its accuracy. Sonomammography is the most commonly used imaging modality especially for young patients[8]. With the advancement in technology new diagnostic modalities have been added in the cascade of investigation protocols for breast diseases, especially carcinoma of breast, which is showing a rising trend in the recent years. This includes MRI of breast, colour doppler ultrasound, contrast ultrasound, digital mammography, scintimammography etc[9].

Present study was conducted to determine the clinical symptoms as well as mammographic findings in cases of breast carcinoma.

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PATIENTS AND METHODS

This cross sectional validation study was conducted in Radiology Department of Military Hospital Rawalpindi from January 2011 to Dec 2011. Women >30 years of age including premenopausal and postmenopausal with positive findings on histopathology were included in the study. Pregnant women, breast-feeding women, women younger than 30 years (in whom only sonography was performed) were excluded from the study. Total 57 female patients were included in the study through non-probability consecutive sampling. We collected information on demographics (age) and breast

on a proforma. Patients were thoroughly explained about the procedure to ensure maximum relaxation during the procedure. Mammograms were obtained with dedicated mammography unit (Mammomat II, Siemens, model no. 80). Craniocaudal and oblique views were obtained in all patients. Mediolateral views were obtained in particularly dense or heterogeneous breasts. If necessary, additional views were obtained. On mammograms, malignant lesions were defined according to standard criteria that included the presence of a mass, architectural distortion, and calcifications. Mammograms were analyzed and the breast
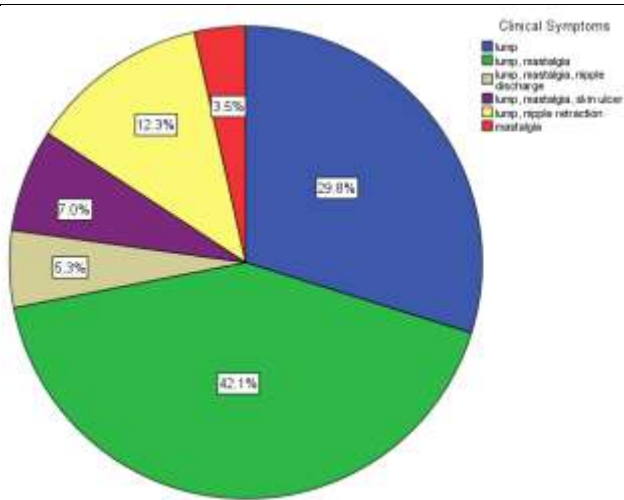

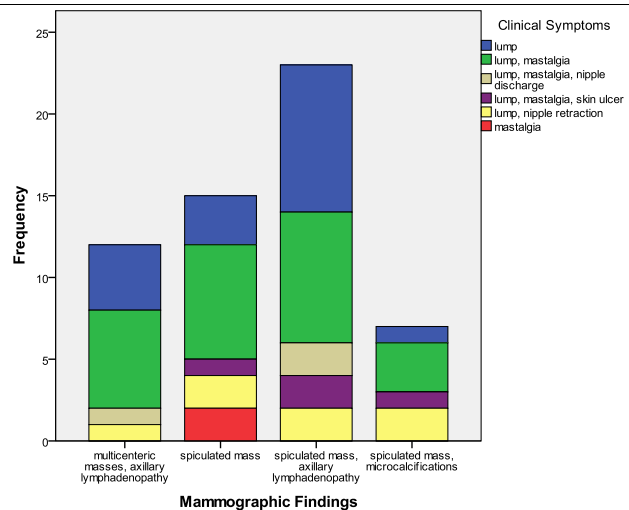Figure-1: Showing clinical symptoms in carcinoma breast (n = 57).

Figure-2: Clinical symptoms along with mammographic findings in carcinoma breast (n = 57).

cancer risk factors (family history of breast cancer, previous breast biopsy history, current use of oral contraceptives). Two radiologists, one resident with 3 and one consultant radiologist with 14 years experience in breast imaging, participated in the study. The same radiologist performed the physical, mammographic, and when required sonographic examinations in each patient. Physical examination of the whole breasts and axillary regions was performed with the patient in the sitting position with arms both lowered and raised and in the supine position with arms raised. Physical findings were notified

density grades were determined according to the American College of Radiology Breast Imaging Reporting and Data System (BI-RADS)[10]. In selected patients with dense glandular breast tissue and equivocal mammographic findings, sonographic examinations were systematically performed. Sonographic examinations were performed using a linear array probe centered at 7.5 MHz. All sonographic examinations were performed with the patient in a supine position for the medial parts of the breast and in a contralateral posterior oblique position with arms raised for the lateral parts of the breast. Mild

compression was applied. The whole breasts were scanned. All patients with positive findings were referred to the histopathologist for biopsy. Biopsies/FNAC of the non palpable or small lesions were performed by the radiologist under ultrasound guidance at our department.

Data was analyzed using SPSS version 15. Descriptive statistics were used to describe the data. Mean and standard deviation (SD) were calculated for quantitative variables whereas frequency and percentages were calculated for qualitative variables.

RESULTS

Fifty seven female patients with positive clinical findings and malignant mass on mammography were studied. Mean age of the patients was 52.8 years (SD = 10.3). Age range of the patients was 32–72 years. Maximum (38.6%) patients were in the age group of 40 – 50 years. Major symptoms were lump with mastalgia present in 24 (42.1%) patients followed by lump alone in 17 (29.8%) patients (fig-1). Most commonly observed mammographic abnormality was circumscribed high density spiculated mass with axillary lymphadenopathy in 23 (40.4%) patients followed by speculated mass alone in 15 (26.3%) patients, multicentric masses with axillary lymphadenopathy in 12 (21.1%) patients and speculated mass with microcalcification in 7 (12.3%) patients. Three (5.3%) patients had findings of malignant masses in the contra lateral breast as well. Histopathological results showed that most common malignant mass was invasive ductal carcinoma (89.5%), followed by invasive lobular carcinoma (3.5%), medullary carcinomas (3.5%) and miscellaneous (3.5%). Clinical symptoms in accordance with mammographic findings are shown in fig.-2.

DISCUSSION

Radiological examination of the breast is established as an essential part of the modern multidisciplinary approach to effective investigation and management of the breast disease including carcinoma breast. Early diagnosis and treatment of the non palpable

breast cancer reduces the beast cancer mortality rate[11]. Mammography is the preferred screening and diagnostic examination for breast cancer, especially in women older than 40 years, the age group with the highest incidence of breast cancer[12]. The earliest sign of breast cancer is an abnormality depicted on a mammogram, before it can be felt by the woman or her physician. Results of our study showed lump alone or associated with other symptoms was the most common (96.5%) reported symptom associated with malignant findings on mammography. Results are comparable to the international studies which showed that presence of lump was associated with 2 to 3 fold greater risk of diagnosis of breast cancer[13]. Our findings also support the need of thorough evaluation of a reported lump wherereas regarding patients with mastalgia and nipple discharge physicians should be reassured about the justification of careful observation[14]. Most commonly reported mammographic abnormality was circumscribed high density spiculated mass (78.9%), with associated mammographic findings of microcalcifications (12.3%) and axillary lymphadenopathy (61.4%). Results are comparable to the previous studies[15,16]. Two patients (3.6%) had findings of malignant masses in the contra lateral breast as well.

Results of our study showed limitation of mammography in the evaluation of dense premenopausal breast parenchyma and in patients who reported for the postmastectomy followup of contralateral breast screening. All of the screening mammograms done at our department were negative for any suspicious finding/malignancy, which is explained by the limited sensitivity of mammography in certain situations. Although mammography is still considered to be the primary imaging modality in detection of occult breast cancers, however it should be augmented with the use of other techniques[17]. In our department mammography is supplemented with sonomammography in all premenopausal females and patients with equivocal mammographic findings, for the

reason that sonomammography and conventional mammography complement each other and increase the sensitivity of cancer detection from 83% to 93%[18-21].

Furthermore patients with negative screening mammograms following mastectomy or with strong family history of carcinoma breast, should be further investigated with contrast enhanced MRI of the breast, which has shown high sensitivity for the detection of occult carcinomas missed on mammography alone[22,23].

Results of our study cannot be applied to whole population due to limited sample size including selected group of patients entitled for treatment at military hospital and limited number of only those civilian non-entitled patients who could afford the cost of mammography. Some of our patients could not be followed for histopathological correlation as they did not report back for followup.

CONCLUSION

Lump and mastalgia were the major symptoms observed in cases of breast carcinoma. Mammography is the mainstay for evaluation of breast cancer but only patients with the complaints of lump and mastalgia should be evaluated through mammography while patients with other complaints should be followed up without mammography for some time to avoid unnecessary radiations.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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