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Evaluation of clinico-radiological findings of non-palpable breast lesions with their histological diagnosis highlighting the importance of BI-RADS in radiopathology correlation

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Objectives: The objective of this study is to assess the diagnostic value of breast imaging reporting and data system (BI-RADS) in screening and management of non-palpable breast lesions in the setting of a Tertiary Care Hospital in Mumbai, India with histopathological correlation and to evaluate the rates of radiologic and pathologic correlation in breast biopsies and subcategorization of BI-RADS category 4 to 4a, 4b and 4c and correlation with histopathology.

Material & Methods: The authors retrospectively reviewed the mammography and sonographic findings of 425 women who had come for screening between May 2010 and May 2016. BI-RADS categorization of these lesions by combined mammography and ultrasound was followed by histopathological examination.

Results: All 425 cases were classified into BI-RADS categories 2, 3, 4 and 5. The distribution of lesions on BI-RADS category was BI-RADS 2:7(1.6%), BI-RADS 3:100 (23.52%), BI-RADS 4a:154 (36.23%), BI-RADS 4b:39 (9.17%), BI-RADS 4c:71 (16.7%), BI-RADS 5:54 (12.7%). Malignancy was detected in 5 (5%) BI-RADS 3 lesions, 9 (5.7%) in BI-RADS 4a lesions, 21 (54%) in BI-RADS 4b lesions, 64 (92.7%) in BI-RADS 4c lesions and 47 (87%) in BI-RADS 5 lesions. Histology revealed 279 benign cases (65.64%), 33(7.7%) ductal carcinoma *in situ* (DCIS) and 113 invasive malignancies (26.5%). It was seen that the sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of BI-RADS was 89.73%, 90.32%, 82.91%, 94.38% and 90.12% respectively. The disease prevalence, positive likelihood ratio, negative likelihood ratio and area under the curve were 34.35%, 9.272, 0.114 and 0.9 respectively.

Conclusions: In our study, BI-RADS proved to be a very good diagnostic test in the screening and initial management of non-palpable breast lesions. Majority of the lesions detected were benign and the malignant cases showed better prognostic features like smaller size, more ER positivity, and lower rates of lymphatic and metastatic spread. The subcategorization of BI-RADS 4 lesions into 4a, 4b and 4c further demonstrated that these subcategories remain as invaluable contribution for accurate assessment of lesions suspicious for malignancy. The present study has demonstrated that BI-RADS allows a safe prediction of high suspicion of malignancy in category 4c, 5 and low suspicion for category 3 and 4A.

Biography

Raju Wadhvani is a consultant Radiologist at P D Hinduja Hospital and Medical Research Centre since 2002. Her special interests are Breast Imaging, Ultrasound, Color Doppler and Musculoskeletal Ultrasound. At present, her focus is on Breast Imaging concentrating on Mammography Ultrasound and Breast Intervention. They perform on an average 3500 to 4000 mammograms and breast ultrasounds in a year. She have a special interest in Mammography guided Stereotactic and Vacuum biopsies.

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