

AJR: BI-RADS descriptors can predict malignancy for breast MRI lesions

The combinations of [BI-RADS](#) lesion descriptors can predict the probability of malignancy for breast MRI masses, but not for non-masslike enhancement, according to a study in this month's issue of the *American Journal of Roentgenology*.

[Robert L. Gutierrez](#), MD, from the department of radiology at the [University of Washington Medical Center](#) in Seattle, and colleagues sought to evaluate the predictive features of BI-RADS lesion characteristics and the risk of malignancy for mammographically and clinically occult lesions detected initially on breast MRI.

The researchers reviewed 1,523 consecutive breast MRI exams performed from Jan. 1, 2003, to June 30, 2005, to identify all lesions initially detected on MRI and assessed as BI-RADS 4 or 5 for which the patient underwent subsequent imaging-guided needle or excisional biopsy. They recorded BI-RADS lesion features for each case and the risk of malignancy was assessed using generalized estimating equations.

Included in the analysis were 258 suspicious lesions in 196 women, according to the authors. Among all lesions, those of 1 cm or greater were significantly more often malignant (34 percent) than lesions of less than 1 cm (20 percent).

For masses, the investigators reported that size, BI-RADS margin and enhancement pattern predicted malignancy. In multivariate analysis of combinations of features, masses of 1 cm or greater with heterogeneous enhancement and irregular margins had a 68 percent probability of malignancy. Also masses of 1 cm or greater with smooth margins and homogeneous enhancement had the lowest predicted probability of malignancy of 3 percent.

The authors "found that particular BI-RADS lexicon descriptors to be strong predictors of malignancy, comparable to descriptors used in mammography. Specifically, when considering lesions characterized as masses, features predictive of malignancy were irregular or spiculated margins and heterogeneous internal enhancement."

However, Gutierrez and colleagues determined that BI-RADS descriptors and size were not significant predictors of malignancy for nonmasslike enhancement (NMLE).

"If our model is validated, masses with a low probability of malignancy may be eligible for short-interval follow-up rather than biopsy," the authors wrote. Yet, they acknowledged that "[f]urther research focused on predictive features of NMLE is needed."