Contrast agent with MRI improves detection of lymph nodes metastases

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Addition of the contrast agent gadolinium during magnetic resonance imaging (MRI) for primary tumor assessment improved accuracy for detecting lymph node metastases, according to a new study published online February 1 in the *Journal of the National Cancer Institute*. Gadolinium-enhanced MRI is primarily used to visualize primary tumors, highlight tumor vascularity, and increasingly to detect and evaluate lymph node metastases. In light of this systematic review, the authors recommend that contrast highlighting be included as a malignancy criterion when this agent is used for primary tumor visualization.

Wenche M. Klerkx, M.D., Ph.D., Department of Gynecology and Obstetrics, University Medical Centre Utrecht, the Netherlands, and colleagues searched the literature for studies that compared the diagnostic accuracy of gadolinium-enhanced MRI for staging lymph node metastases with that of histopathologic examination. The researchers conducted a meta-analysis that encompassed more than 30 studies from the last 10 years and reported summary sensitivity and specificity of MRI for detecting nodal metastases.

The researchers found that overall accuracy of gadolinium-enhanced MRI for the detection of nodal metastases was moderate. They also concluded that incorporating contrast enhancement in the malignancy criteria improves the accuracy of this diagnostic test.

"We further advocate the use of uniform malignancy criteria, including

contrast enhancement, for standardization of future evaluations," the authors write. "Gadolinium enhancement by itself does not have the diagnostic accuracy to replace histopathologic examination of lymph nodes; however, it can help identify suspicious lymph nodes that should be surgically collected for histopathologic examination."

Study limitations: Not all of the included studies reported diagnostic study quality, which precluded formal analyses based on the quality assessment items. A regression test for small-study effects was statistically significant, indicating that the retrieved studies had results that may not be representative of the full range of evidence that has been produced (publication bias). In the overall analyses of the diagnostic accuracy of gadolinium-enhanced magnetic resonance imaging for the detection of lymph node metastases, studies were pooled without regard to the primary tumor site.

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