Quantitative Magnetic Resonance Angiography
A Promising Tool in the Assessment of Intracranial In-Stent Stenosis?

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See related article, pages 991–993.

Prabhakaran and colleagues describe a promising technique, quantitative MR angiography, as a screening tool for detecting intracranial in-stent stenosis. They looked at 14 patients with intracranial stents and compared quantitative MR angiography and conventional angiography. Using a 20% decrease in quantitative MR angiography vessel flow, they found that low blood flow measured by quantitative MR angiography at sites of intracranial stent placement was significantly associated with in-stent stenosis by catheter-based angiography. The sensitivity, specificity, and negative predictive value are excellent, whereas the positive predictive value was fair. They identified all true cases of in-stent stenosis. This article and methodology come at a good time because intracranial stents are increasingly being used for the treatment of aneurysms as well as for treating symptomatic intracranial atherosclerotic disease. Other noninvasive imaging such as MR angiography and CT are usually degraded by artifact by the stents; as they state in the article, digital subtraction angiography is invasive and carries up to a 1% risk of stroke. Patients are being increasingly treated for symptomatic intracranial atherosclerotic disease. Because this is a new technique, and restenosis is a problem as yet unquantified in sufficient numbers of patients, all patients routinely undergo follow-up angiography with, I am sure, an undoubted morbidity. Most proposed registries and trials also specify follow-up with conventional digital subtraction angiography. The ability of quantitative MR angiography to identify likely cases of restenosis shows great promise and may obviate the need for angiography in many cases. More cases are needed to validate this technique.

Disclosures
None.

References

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