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MRI could be used for routine surveillance of great vessel stents

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Researchers have found that magnetic resonance imaging (MRI) may be sufficient for the routine surveillance of some great vessel (primary blood vessels [e.g., aorta and vena cavae]) stents that are commonly used to treat congenital heart defects (a defect in the structure of the heart and great vessels that is present at birth) in children and young adults, according to a study in the October issue of the *American Journal of Roentgenology*. MRI is a noninvasive medical test that helps physicians diagnose and treat medical conditions.

"Computed tomography (CT) is regarded as the best method for follow-up of endovascular stents. However, there are concerns regarding the long-term health effects of ionizing radiation exposure," said Andrew M. Taylor, MD, lead author of the study. "Conventional angiography can be used to image stents; however, it is not suitable for routine surveillance because of the invasive nature of the procedure," said Taylor.

The study, performed at the Great Ormond Street Hospital for Children in London, included three contemporary great vessel stent materials (nitinol, platinum-iridium and stainless steel) that were implanted into an aorta model and imaged with conventional angiography, ten different MRI sequences and CT. "Study results showed that the diagnostic accuracy of conventional angiography and CT was high for all stents and MRI visualization of the stent depended on the type of stent and the sequence used," said Taylor.

"MRI does not use radiation; however, because of artifacts (defects

found in some images) it has traditionally been thought of as an unreliable method of assessing stents," he said.

"Our findings suggest that certain [MRI] sequences are accurate methods of assessing stent stenosis. This would allow more frequent assessment of stents at lower risk to patients and represent a significant change in clinical practice," said Taylor.

More information: This study appears in the Oct. issue of the American Journal of Roentgenology. (www.ajronline.org)

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