MedicalXpress

Susceptibility-weighted imaging can improve detection of and treatment for stroke patients

May 4 2011

A new study shows that susceptibility-weighted imaging (SWI) is a powerful tool for characterizing infarctions (stroke) in patients earlier and directing more prompt treatment.

In the United States, stroke is the third leading cause of death and overall affects almost one million people each year, said Dr. Mark D. Mamlouk, lead author of the study at the University of California, Irvine. He states, "There are different causes of stroke of which the thromboembolic (clot) subtype is one of the most common." Traditionally, SWI, which is a specific MRI sequence, has been used as a secondary tool to evaluate intracerebral (brain) hemorrhages and detect clots with middle cerebral artery (MCA) infarctions. Now, Dr. Mamlouk said, "Any patient that has a suspicion of stroke, we can add the SWI sequence as part of their MRI brain protocols to better characterize the [origin of the] stroke."

For the study, researchers assessed that of the 35 patients with thromboembolic infarctions, SWI detected thromboemboli in 30 patients. Additionally, 14 of these thromboemboli were located in arteries other than the anterior division of the MCA. Dr. Mamlouk said, "At our institution, we are amazed at how often SWI detects thromboemboli in all major cerebral arteries, not just the MCA. Given SWI's high sensitivity (86%) of thromboemboli detection, we found that there is an adjunctive role of SWI in classifying cerebral infarctions in patients."

While MRIs have been the gold standard for evaluating infarctions,

adding SWI to the routine MRI sequences for evaluating patients with a clinical suspicion of stroke will hasten their time to treatment and improve overall recovery, said Dr. Anton Hasso, senior author of the study. Dr. Mamlouk states, "The utility of SWI extends beyond the evaluation of hemorrhage. Using SWI in patients with cerebral infarctions will decrease further imaging and its associated costs and radiation exposure, but more importantly this imaging technique will guide direct management in a timelier manner."

More information: Dr. Mamlouk will deliver a presentation on this study on Wednesday, May 4, 2011 at the 2011 ARRS Annual Meeting at the Hyatt Regency Chicago.

Provided by American Roentgen Ray Society