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New Technique to Visualize Neck Arteries

Gain Seen in Stroke Prevention

By HARRY NELSON, *Times Medical Writer*

Radiologists have developed a safer way to visualize an artery in the neck to tell whether a patient suspected of being stroke-prone is a candidate for surgery that could prevent the stroke.

According to Dr. Meredith A. Weinstein of the Cleveland Clinic, the improved safety of the new diagnostic technique could result in its greater application, with a commensurate improvement in stroke prevention.

Weinstein, who is head of neuro radiology at the Ohio clinic, discussed the new method, called digital substraction angiography, at the Congress of Neurological Surgeons under way this week at the Century Plaza.

Traditionally, doctors have visualized blood vessels by injecting into an artery a chemical called a contrast medium, which then shows up in an X-ray.

One risk, Weinstein said, of injecting the medium into an artery (instead of a vein) is that doing so might actually cause a stroke by breaking loose a blood clot. Another potential problem is that an air bubble might accidentally be introduced into the artery and cause a stroke.

The radiologist said the risk of stroke being caused by the procedure varies from 0.1% to 5%, depending on the proficiency of the doctor doing it.

With the new technique, the medium is injected into a vein, not an artery. According to Weinstein, this practically eliminates the hazard.

Because of the potential risk inherent in the old method, physicians often were reluctant to order the test unless they were well convinced by the patient's symptoms that a stroke was imminent. The reason for the procedure is to pinpoint the location of the obstruction that is causing a reduction in blood flow to the brain, which in turn is causing certain symptoms.

These symptoms commonly are fleeting periods of numbness on one side of the body, temporary speech impairment and transient vision impairment. Together, the symptoms are called a transient ischemic attack.

Once the location of the obstruction is pinpointed, it often is possible to do surgery that either will ream out the obstruction or bypass it by implanting a new blood vessel.

Digital substraction angiography requires special equipment that is as yet available at only a handful of hospitals. But Weinstein said the number is growing rapidly.

Another speaker, Dr. Julian Hoff, professor of surgery at the University of Michigan Medical School, said researchers have recently learned that the brain can function with reduced blood flow for longer periods than previously believed. This period of reduced flow without consequent damage is called the "golden period."

Within the last several months, he said, several drugs have been identified that can prolong the golden period. In the future, these drugs might be used during the interval between the hospital admission of a patient with a transient ischemic attack and the decision to do surgery.

Many patients, Hoff said, are admitted to a hospital with what doctors call a "stuttering" transient ischemic attack, meaning symptoms that come and go and come again. It is this type of stroke-prone person whom the drugs could benefit, he said.