Flat-Panels Cut Contrast, Yield Better Results

BY MITCHEL L. ZOLER

HOLLYWOOD, FLA. — Flat-panel detector systems have made it possible to perform angiography with a quarter of the contrast media routinely used with conventional image intensifiers.

"Flat-panel systems represent a huge evolution in angiographic technology," Dr. Timothy W. Clark said at ISET 2009, an international symposium on endovascular therapy. "Much less contrast is needed to generate the same image quality as conventional image intensifiers, and because image production is more efficient, there is less radiation exposure to patients" and staff, said Dr. Clark, chief of vascular and interventional radiology at New York University. The reduction cuts the risk for contrast-induced nephropathy.

Flat panels offer a "dramatically wider dynamic range across all soft tissue anatomy, a larger field of view, homogeneous and distortion-free images, and improved detector efficiency," he said. These features improve visualization, despite less contrast and a lower radiation dose. Unlike conventional image intensifiers, they do not involve an analog conversion, there is no geometric distortion, and there is no lateral dispersion of light to reduce image sharpness. Flat panels are less bulky and allow for greater freedom of movement.

With a flat-panel detector, Dr. Clark uses iodinated contrast diluted to 25%.

The degree of dilution depends on the contrast resolution of the flat-panel system.

For renal arteriograms, he said he has produced excellent images using a total contrast volume of 7 mL. For renal stenting, he uses 15 mL. For a popliteal chronic total occlusion, he uses a total volume of 25 mL, and for an iliac chronic total occlusion, he uses 32 mL of contrast.

"We use amazingly small volumes of contrast and still get high-resolution images," said Dr. Clark, who does not have financial relationships with the companies that make flat-panel detectors.

One caveat regarding the use of diluted contrast is that the fluid must be power injected so it can displace the blood within the imaged vessels, he said. ■

FDA: Remove Drug Patches Before MRIs

To eliminate any risk of skin burns, transdermal medication patches should be removed before patients undergo magnetic resonance imaging scans, the Food and Drug Administration advises.

Prompted by less than half a dozen reports of burns associated with patches that contain trace amounts of aluminum or other metals, the FDA issued a public health advisory in March. The burns, reported in nicotine patches, have been described as similar to a "serious sunburn," Dr. Sandra Kweder, deputy director of the FDA's Office of New Drugs, said during a telebriefing.

The advisory applies to all patches, even those without metals, because not all patches carry a warning about the risk, and metal may not be visible. Clinicians should instruct patients about when to remove patches before procedures and about replacing them afterward, the advisory said.

About 60 medicated patches are on the market. Uses include smoking cessation, contraception, hormone therapy, and pain treatment.

More than 25% of them contain metal, Dr. Kweder said. Even transparent patches may contain metals.

The FDA is reviewing the labeling and composition of all transdermal medication patches, and is working with manufacturers to improve labeling, which could include some type of warning on the patch.

—Elizabeth Mechcatie

The advisory is available online at www.fda.gov/medwatch/safety/2009/safety09.htm#Transdermal.