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PHYSICIAN NEWS

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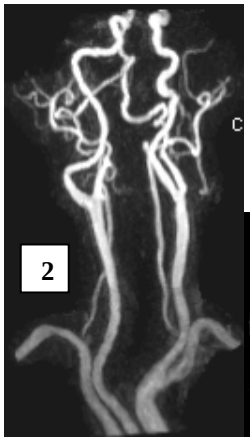
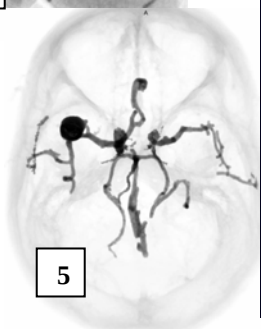
MR & CT ANGIOGRAPHY (MRA/CTA); CORONARY CTA





FIGURES: The above images are some of the cases presented at AIC's "**Fun Presentation Party**" #3. **Fig. 1a-b: Carotid CTA** showing significant stenosis due to calcified plaques. **Fig. 2:** Normal **Carotid MRA**. **Fig. 3a-b:** Normal **Coronary CTA**. **Fig. 4: Renal MRA** showing renal artery aneurysms. **Fig. 5: CTA circle of Willis** showing a large aneurysm. **Fig. 6: Abdominal CTA**. **Fig. 7: CTA Runoff** showing bilateral long segment femoral artery occlusion.

WHEN WOULD YOU DO CTA OR MRA?

Contrast-Enhanced MRA (CE-MRA) is a rapid MRA technique with contrast (takes one breathhold). It is generally better than CTA for most applications since it is not hindered by calcifications or osseous structures. For the brain/circle of Willis, Carotids, Vertibrobasilar system, runoffs, and renals, MRA is preferable. For pulmonary angiogram and aorta, CTA is preferred.

WHAT ARE THE ADVANTAGES/DISADVANTAGES OF MRA?

Advantages: No limitations by heavy calcifications or bony structures. No allergy to iodine contrast.
Disadvantages: Claustrophobia, patient motion.

WHAT ARE THE ADVANTAGES/DISADVANTAGES OF CTA?

Advantages: No claustrophobia. Very fast. Allows for *color* 3D reconstructions. Allows for axial 2D visualization of the area and distinction between soft and calcified plaques and diameter of true lumen.
Disadvantages: Patient may be allergic to iodine-based contrast. Calcifications and bones may get in the way (although can be removed but care must be taken not to accidentally remove a portion of the vessel).

EXPLAIN CORONARY CTA:

A rapid gated CT study during fast infusion of **intravenous** (not arterial) contrast is obtained through the heart and 3D images of the coronaries can be displayed one at a time or all together (top 2 middle **Figures**). It is preferable to slow the heart rate down with a beta blocker. The study should not take more than 5 minutes from start to finish.