

### Advanced MR and CT ARTHROGRAPHY (DIRECT & INDIRECT)

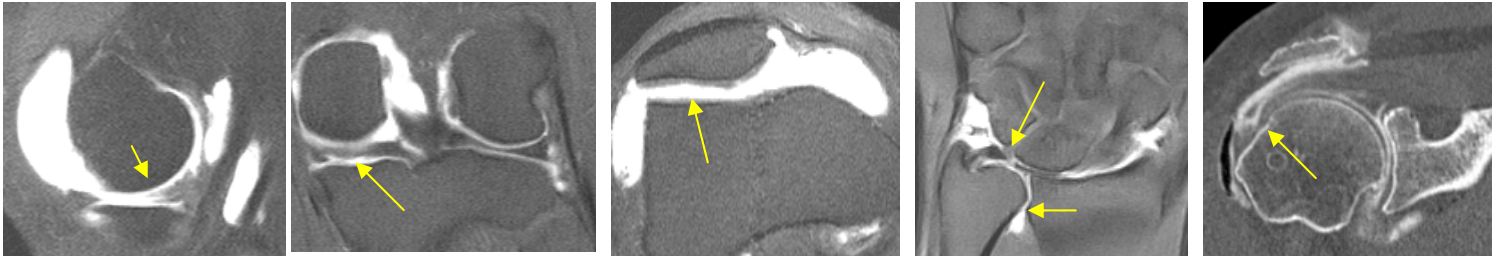


FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

#### **Q. WHAT IS MR ARTHROGRAPHY?**

In MR arthrography, intra-articular **diluted Gadolinium** is injected and MRI images with fat suppression are obtained. This causes the injected dye to be white against dark bones providing maximum tissue contrast. **INDIRECT MR ARTHROGRAHY** can be performed with IV gadolinium contrast and use of delayed imaging.

#### **Q. WHAT IS CT ARTHROGRAPHY?**

In CT arthrography, intra-articular low-osmolar, non-ionic contrast is injected and **high-resolution, 0.5 mm isotropic axial cuts (only available at AIC)** are obtained through the joint on **AIC's new 16-slice CT** capable of obtaining up to **40 slices per second**. Subsequently, exquisite 3D/Multiplanar reformations are obtained on an advanced 3D workstation. We prefer CT arthrography to MR arthrography in claustrophobic patients who cannot tolerate a high-field MRI.

#### **Q. HOW IS INTRA-ARTICULAR CONTRAST INJECTED?**

It can be performed either under x-ray fluoroscopy, or more recently under **real-time CT fluoroscopy (in the Antelope Valley, currently available only on AIC's 16-slice CT)**.

#### **Q. WHAT ARE SOME APPLICATIONS?**

**Knee:** Chondromalacia; evaluation of the menisci for recurrent tears after partial meniscectomy (routine MRI may not be able to differentiate between postsurgical changes and recurrent tears); etc. **FIG. 1-2** show a recurrent tear of the posterior horn of the medial meniscus in a post-operative patient on MR arthrogram, and **FIG. 3** shows chondromalacia patella.

**Shoulder:** Chondromalacia; evaluation of the glenoid labrum (labral tears, SLAP lesion [Superior Labrum Anterior Posterior tear], etc.); post-surgical evaluation of the rotator cuff for recurrent RCT tears; etc. **FIG. 5 (CT arthrogram)** shows a small full-thickness rotator cuff tear with injected intra-articular contrast communicating with the subacromial bursa through a small perforation.

**Wrist:** Triangular fibrocartilage complex (TFCC) tear; scapholunate ligament (SLL) tear; etc. **FIG. 4** is an MR arthrogram showing a small perforation in the TFCC with contrast communicating with the distal radioulnar joint.

**Hips/Ankle/Elbow:** Chondromalacia; acetabular labral abnormalities; ligament tears; etc.

**ADVANTAGES of MR/CT Arthrography:** enhances accuracy of RCT tears in the shoulder to nearly 100%, and also greatly improves diagnosis of labral or biceps tendon pathology including SLAP lesions; nearly 100% accuracy in the wrist for ruling out TFCC or SLL tears; significantly improves diagnosis of chondromalacia in any joint. Most shoulder MRI's should be done with arthrography to avoid confusing partial or small full-thickness tears with tendonitis, and also to adequately evaluate the biceps tendon and glenoid labrum.

For more information, you may call me at (661) 949-8111.

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