Advanced Topics in Orthopedic Radiology: MR ARTHROGRAM

Q. What is MR Arthrogram?
A. MR arthrogram is a combination of MR Imaging (MRI) and fluoroscopic-guided arthrogram for evaluation of joint abnormalities.

Q. What MRI techniques are utilized in MR Arthrogram?
A. After injection of Gadolinium contrast into the joint space, post-contrast FAT SAT sequences are utilized causing the injected dye to be white against dark bones providing maximum tissue contrast. Diluted gadolinium is injected into the joint under fluoroscopic guidance, similar to x-ray arthrogram.

Q. What are some applications?
A. Knee: evaluation of the menisci for recurrent tears after partial meniscectomy (routine MRI may not be able to differentiate between postsurgical changes and recurrent tears).
Shoulder: evaluation of the glenoid labrum (labral tears, SLAP lesion, etc.); post surgical evaluation of the rotator cuff.
Wrist: triangular fibrocartilage complex (TFCC) tear; scapholunate ligament tear; etc.

Q. Is MR Arthrogram performed at AIC?
A. Yes! We have been doing MR arthrograms for some time now mostly on the high-field (1.5 Tesla) short-bore Siemens Symphony MRI magnet. This procedure has allowed diagnosis of subtle joint abnormalities not obvious on routine MR imaging.

Examples of a wrist MR arthrogram (left) showing a tear of the triangular fibrocartilage complex (TFCC), a knee MR arthrogram (middle) with contrast in the joint, and a shoulder MR arthrogram (right) showing disruption of the inferior glenohumeral ligament-labral complex.

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