

MR Imaging Protocol for Autologous Chondrocyte Implantation (ACI)
01/01/2001

Please have the patient arrive a half-hour early for the study so that you may inject them with intravenous Magnevist (ProHance, Omniscan and other non-ionic agents may not produce as good a cartilage/fluid differentiation) and then have them do active range of motion exercise within the limits of their rehabilitation protocol.* This promotes uniform enhancement of the joint fluid for the study without directly sticking a needle into the joint – an “intravenous” MR arthrogram.

Then perform:

Coronal images: T1-weighted, FSE Proton Density with fat saturation (TE 25) and STIR

Axial images: Dual echo FSE T2-weighted (TEs of 45 and 133ms)

Sagittal images: FSE Proton Density with (TE 25) and without (TE 45) fat saturation

We also obtain T1-weighted images with fat saturation in 2 planes orthogonal to the grafts, e.g. sagittal and coronal for an MFC graft, sagittal and oblique coronal for the trochlea.

The field of view is 14-16 centimeters, matrix 512, slice thickness 3.5 – 4mm. We adjust the FOV and matrix size to the SNR of the magnet and patient size.

If there are any questions feel free to contact Dr. Winalski. He can be reached by email at: carl@bwh.harvard.edu.

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* Exercises can include walking, treadmill walking, stationary bicycling. The patient is well informed and knows what he/she can and cannot do within the parameters of the rehabilitation. Exercise should be for a minimum of 15 minutes and start ASAP after injection (while blood level is high). Then try to start MR scanning within 45 minutes of the injection.