

SEATTLE CANCER CARE ALLIANCE BREAST MRI PROTOCOL

Protocol utilized from Spring 2002-Spring 2004
GE Echospeed 1.5T with version 9.0 software

1. Schedule in 60 minute appointment. Routine screening for MRI contraindications.
2. IV in place prior to scanning.
3. Position breasts in bilateral Medical Devices phase array breast coil. (4 or 7 channel)
4. Scanning.
 - a. Axial localizer: 3-plane loc, 48 FOV, 10mm skip 2.5mm, 256x128, 1 nex, bilat phase array coil (Autoshim was used)
 - b. Left/Right 3D Sagittal: Fast GRE, TR 17, TE Out of phase, flip angle 45, 31.2 Hz, 18-22 FOV (patient size dependent), 3mm thick, 256x192, 1 nex, fat sat, no phase wrap, variable bandwidth, ZIP 512, freq direction AP. Use unilateral portion of the coil for each breast (L_Breast, R_Breast). Autoshim was used. THIS SEQUENCE SHOULD HAVE A T2* APPEARANCE, WATER (CYSTS) SHOULD BE HYPERINTENSE.
 - c. Left/Right 3d Sagittal Fast SPGR: 3D FSPGR, TR 17, TE Out of phase, flip angle 35, 31.2 Hz, 18-22 FOV, 3mm slices, 256x192, 1 nex, fat sat, no phase wrap, variable bandwidth, freq direction AP, ZIPx2. Use unilateral portion of the coil for each breast (L_Breast, R_Breast). Autoshim was used. THIS SEQUENCE IS USED FOR THE MASK ON SUBSEQUENT SUBTRACTIONS.
 - d. Repeat Left/Right 3d Sagittal Fast SPGR immediately post-contrast. The standard dose of gadolinium should be administered 1-2 cc/second by either hand or power injector. The breast with known cancer should be scanned immediately post-contrast, then immediately switch to alternate breast. THIS SEQUENCE IS FOR EVALUATION OF ENHANCING MASSES.
 - e. Repeat Left/Right 3d Sagittal Fast SPGR. ALSO FOR ENHANCING MASSES, BUT TO DETERMINE IF THERE IS PROGRESSIVE ENHANCEMENT VS. WASHOUT EFFECT.

PIXEL SIZE for Sag FSPGR sequences = 0.78 x 1.04mm²

5. Post-processing
 - a. Subtract the pre-contrast 3d FSPGR sequence from the first post-contrast 3d FSPGR, each breast.
 - b. Axial and coronal reformats from first contrast series, each breast.
 - c. MIP (left to right rotation) of first contrast series each breast.