Revised 11.20.2019 RLM

Breast MR Protocols

Br 1: Breast MRI with and without contrast
Br 2: Breast MRI without contrast (implant protocol)

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Br 1: Breast MRI with and without contrast

Indications: high-risk screening, pre-operative breast CA staging, lobular CA, occult breast CA, close or positive surgical margins, post-op scar versus tumor recurrence, problematic mammogram.

Sequences:

- Axial STIR: 4 mm thick.
- Axial pre-Gd 3D FLASH (no fat saturation): 1.5-2 mm thick.
- Dynamic pre- and post-Gd 3D axial FLASH with fat saturation (1 pre, 3 post-Gd time points): 1.5-2 mm thick
- Subtraction sequences for post-Gd axial FLASH (3 time points).
- Sagittal post-Gd FLASH (bilateral): 1.0 mm thick.
- Maximum intensity projections (bilateral)

Comments:

- Schedule 7-14 days after menses, unless pre-op or known breast CA.
- Place skin marker on any palpable lumps.
- Take care to position breast so no skin folds.
- Match FOV in all 3 types of sequences: restrict FOV to anterior portions of the heart, so that spine is excluded.
- Dynamic scan: do not add slices; increase thickness up to 2 mm to get coverage. Run pre-contrast phase, confirm fat sat then inject Gd contrast at 2 mL/sec for 20 sec prior to start of 2nd phase.
- Sagittal recons: bilateral MPR from initial post-contrast phase.

Hanging protocol:

- Dynamic pre-Gd 3D axial FLASH with fat sat
- Dynamic post-Gd 3D axial FLASH with fat sat #1 (non-subtraction)
- Dynamic post-Gd 3D axial FLASH with fat sat #2 (non-subtraction)
- Dynamic post-Gd 3D axial FLASH with fat sat #3 (non-subtraction)
- Sagittal post-Gd 3D FLASH (right).
- Sagittal post-Gd 3D FLASH (left).
- Axial STIR
- Axial pre-Gd 3D FLASH (no fat saturation)
- Dynamic post-Gd 3D axial FLASH with fat sat #1 (subtraction)
- Dynamic post-Gd 3D axial FLASH with fat sat #2 (subtraction)
- Dynamic post-Gd 3D axial FLASH with fat sat #3 (subtraction)
- Maximum intensity projection.

- Scout images.

Sending images to Dynacad: send all raw data EXCEPT for:

- Scout images
- Maximum intensity projections
- Subtraction images

Notify mammo techs to add study to Penrad worklist as soon as study is completed. Verify study has been pushed to Dynacad

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Br 2: Breast MRI without contrast (silicone implant protocol)

Indications: suspected silicone implant rupture

Sequences:

- Axial T1 No Fat Sat
- Axial STIR (bilateral)
- Axial STIR with water saturation (label as *silicone selective*).
- Sagittal T2 FSE with fat saturation (unilateral)
- Sagittal STIR with water saturation (*label as silicone selective*).
- Coronal T2 FSE (no fat sat)

Comments:

- Technologist screening questions: saline implants typically not imaged by MRI, tissue expanders are contraindicated.
- Axial and coronal sequences are bilateral, sagittal sequences are unilateral.