



Abdominal MRA

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Standard uses: Pre surgical planning for stent-grafts, Abdominal aortic aneurysm, For the evaluation vasculitis, Mesenteric Ischemia, Post-surgical Follow-up, Aortic Dissection

Patient prep: NPO for 4 hours prior to study is possible

Oral contrast: None

Coverage: Must include origin of celiac artery, origin of superior mesenteric artery (SMA), right and left renal arteries to the branching in the renal hilum with no motion blurring

Contact rad as necessary.

Intravenous contrast: Single dose gadolinium.
Adult - 0.5 mmol/mL, maximum 20mL. Administer 2mL per second, example - MultiHance/ProHance/Doterem
0.25 mmol/mL, maximum 10mL, Administer 1.5mL per second, example - Gadavist

Anti-peristaltic agent: None.

SUMMARY:

1. Localizer
 - a. Breath hold
 - b. Free Breathing
2. Cor T2 HASTE
3. Ax Trufi
4. Ax In and Out
5. Ax HASTE
6. Cor T1 Ultra-fast 3D Pre
7. Cor T1 Ultra-fast 3D arterial

SEQUENCES:

1. Localizer
 - a. Breath hold
 - b. Free Breathing



2. Coronal T2 HASTE Ultra-fast SE (HASTE, SSFSE, FASE)

- a. Breath hold, concatenation/multi-breath hold is less desirable than single breath hold
- b. Large FOV. Complete front to back coverage.
- c. Goal parameters
 - i. Slice thickness 3mm, 0.6mm Gap (20%)

3. Axial T2 Trufi (Trufi, Fiesta, Cosmic, Balanced FFE, True SSFP)

- a. Multiple breath holds
- b. FOV to patient anatomy. Slices should sufficiently cover the entire abdomen from the diaphragm down to the symphysis pubis.
- c. Goal parameters
 - i. Slice 4mm
 - ii. Distance 0.4mm (10%)

4. Axial In and Out of Phase GRE

- a. Multiple breath holds
- b. FOV to patient anatomy. Slices should sufficiently cover the entire abdomen from the diaphragm down to the symphysis pubis.
- c. Goal parameters
 - i. Slice thickness 5mm
 - ii. Distance 0.5mm (10%)

5. Axial T2 Ultra-fast (HASTE, SSFSE, FASE)

- a. Multiple breath holds
- b. FOV to patient anatomy. Slices should sufficiently cover the entire abdomen from the diaphragm down to the symphysis pubis
- c. Goal parameters
 - i. Slice thickness 5mm
 - ii. Distance 0.5mm (10%)

6. Cor T1 Ultra fast 3D-GE (FLASH, SPGR, T1-FFE, RF Spoiled SARGE, RSSG) pre-contrast

- a. Breath hold
- b. Plan the coronal slices on the axial plane, angling the positioning block parallel to the midline along the right and left kidneys. An appropriate angle must be applied in the sagittal plane, parallel to the Inferior vena cava, ensuring slices cover the entire Inferior vena cava. FOV must adequately encompass the entire IVC.
- c. Goal parameters
 - i. Slab slices ≤ 1 mm, (ACR slice thickness ≤ 3.0 mm, reconstructed slice interval ≤ 1.5 mm, Voxel volume ≤ 6.0 mm³)

7. Cor T1 Ultra fast 3D-GE (FLASH, SPGR, T1-FFE, RF Spoiled SARGE, RSSG) post-contrast

- a. Copy parameters from pre-contrast Cor T1
- b. Trigger off descending aorta if scanner is capable or start at 20 seconds.

NOTE: Add Subtractions and MIP Rotate