



MRI Cervix

MRI Pelvis WO and With Contrast

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Standard uses: Cervical cancer staging

Patient prep:

- (1) NPO for at least 4 hours prior to study
- (2) Void before examination

Oral contrast: None.

Coil: Phase array body coil.

Coverage: Large FOV includes iliac crests to perineum. Small FOV includes cervix and entire uterus.

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, Eovist

Other: If possible, use of **STERILE** gel is preferred to reduce irritation such as bacteriostatic surgical lubricant (Surgilube) **Do not use ultrasound gel**, this is external use only and will be an irritant.

INSTRUCTIONS:

Patient will self-administer approximately 30-60 cc of vaginal gel.

Anti-peristaltic agent: None.

NOTES:

- 1. Small FOV T2 plane through the cervix is **VERY** important.
- 2. Unless otherwise noted, planes are orthogonal (to the magnet) axial, coronal, sagittal (i.e., not specifically oriented to an organ).
- 3. Place a SAT band over the anterior belly fat on all sequences.
- 4. Ensure phase encoding direction is right to left on all sequences.

SUMMARY:

- 1. Localizer
- 2. Cor T2 (large FOV)
- 3. Ax In and Out
- 4. Sag T2 (small FOV)



5. Ax T2 (large FOV)
6. Ax T2FS (large FOV)
7. Obl Ax T2 (small FOV – to cervix)
8. Obl Cor T2 (small FOV – to cervix)
9. Obl Ax Vibe pre-contrast
10. Obl Ax Vibe post-contrast (x3)
11. Cor Vibe post-contrast
12. Sag Vibe post-contrast
13. Ax Diff with ADC map
14. Subtractions (axial x 3)

Sequences:

- 1. 3 plane localizer**
- 2. Coronal T2 Ultra fast SE (HASTE, SSFSE, FASE) without fat suppression**
 - a. FOV: Iliac crests to symphysis pubis.
 - i. Complete front to back coverage (skin to skin)
 - b. Goal parameters
 - i. 7 mm thickness, 25% gap (1.5 mm)
- 3. Axial T1 GRE in and out of phase**
 - a. Iliac crests to symphysis pubis
 - b. Goal parameters
 - i. Slice thickness 4 mm
 - ii. In plane acquired resolution = 2
- 4. Sagittal T2 fast SE (Turbo SE, Fast SE) without fat suppression - small FOV**
 - a. FOV: Should be relatively small = cover the entire uterus and cervix – Mid-sacrum to the symphysis pubis Ideal
 - b. Goal parameters
 - i. Slice thickness 2 mm
 - ii. In plane acquired resolution = < 1mm
- 5. Axial T2 Ultra fast SE (HASTE, SSFSE, FASE) without fat suppression**
 - a. Large FOV: Iliac crests to symphysis pubis.
 - b. Goal parameters
 - i. Slice thickness 4-4.5 mm
 - ii. In plane acquired resolution = < 1mm
- 6. Axial T2 Ultra fast SE (HASTE, SSFSE, FASE) with fat suppression**
 - a. Large FOV = Superior iliac crest to perineum
 - b. Goal parameters
 - i. Slice thickness 4-4.5 mm
 - ii. In plane acquired resolution = < 1mm
- 7. Oblique axial T2 fast SE (Turbo SE, Fast SE) without fat suppression - small FOV**



- a. FOV = Cover entire uterus
 - i. CC extent: At least sacral promontory to below perineum
 - ii. PLANE angulation: Thin slice “true” axial to plane of the CERVIX = short axis to the CERVIX
- b. Goal parameters
 - i. FOV approximately 200 mm
 - ii. Slice thickness 3 mm, 0% gap
 - iii. In plane acquired resolution = < 1mm

8. Oblique coronal T2 fast SE (Turbo SE, Fast SE) without fat suppression - small FOV

- a. FOV = Cover entire uterus and adjacent structures
 - i. Slices should extend superiorly into bladder and sacrum, covering entire region of interest
 - ii. PLANE ANGULATION: Thin slices “true coronal” to #7. (i.e., in the plane of the CERVIX = long axis to the CERVIX
- b. Goal parameters
 - i. Slice thickness 3 mm
 - ii. In plane acquired resolution = < 1mm

9. Oblique axial T1 Ultra fast 3D-GRE with fat suppression (VIBE, LAVA, TIGRE) pre-contrast

- a. FOV: Superior iliac crest through the perineum
 - i. Same plane angulation as #7.
- b. Goal parameters
 - i. Thickness: <= 3 mm

10. Oblique axial T1 Ultra fast 3D-GRE with fat suppression (VIBE, LAVA, TIGRE) post - contrast (x3)

- a. FOV – as #9.
 - i. Same plane angulation as #7.
- b. Slice thickness <= 3 mm
- c. Timing: 25 sec, 60 sec, 2 min

11. Coronal T1 Ultra fast 3D-GRE with fat suppression (VIBE, LAVA, TIGRE) post-contrast

- a. FOV: Cover front to back (skin to skin), including at least from uterus/sacral promontory to perineum
- b. Slice thickness <= 3 mm
- c. Timing: after last axial post in #10, approx. 3 min delay post injection

12. Sagittal T1 Ultra fast 3D-GRE with fat suppression (VIBE, LAVA, TIGRE) post-contrast

- a. FOV: Cover pelvic organs, extending into each femoral head
- b. Slice thickness <= 3 mm
- c. Timing: after coronal #11, approx. 4 min delay post injection

13. Axial DWI with ADC map

- a. FOV: Iliac crests to symphysis pubis.
- b. Goal parameters
 - i. DWI: 50/400/800
 - ii. ADC map

Subtraction series: 3 total (axial)