

## Pediatric MR Urography Protocol with Sedation

Indication: hydronephrosis, urinary tract obstruction, renal anomaly

Patient requirement/prep:

NPO after midnight

Propofol preferred for sedation

IV Ringer's solution:

4 cm<sup>3</sup>/kg per hour for first 10 kg of patient's weight

2 cm<sup>3</sup>/kg per hour for next 10 kg of patient's weight

1 cm<sup>3</sup>/kg per hour for each kilogram above 20 kg Pt weight

Bladder Catheteration using pediatric Foley balloon, left on free drainage (clamp if image for bladder)

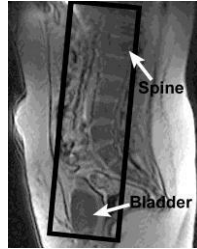
IV Lasix 1mg/kg up to 20 mg, give after Scout, or 15 min before contrast

Gd 0.1 mmol/kg up to 20 cc, inject at 0.1 cc/sec + 12cc saline flush

Pulse Sequences:

1. Ax FIESTA
  - a. Adrenals + kidney, slice/gap = 3/0-1, matrix = 256
2. Ax T1 in/out phase
  - a. adrenals + kidney, slice/gap = 3/0-1, matrix = 256
3. Ax T2 FRFSE with resp trig
  - a. adrenals + kidney, slice/gap = 3/0-1, matrix = 256
4. Obl Cor T2 FRFSE Fat-Sat with resp trig
  - a. kidneys + bladder, slice/gap = 3/0-1, matrix = 256
5. Obl Cor T2 SSFSE
  - a. kidneys + bladder, slice/gap = 3/0, matrix = 256
6. Thin section 3D Asset Obl Cor MRU with resp trig

- a. kidney
- b. Use
- c. TR/TE  
320  
Obl  
Cor

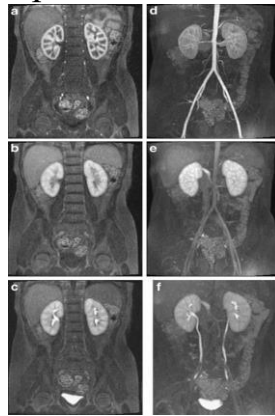


+ bladder  
MRCP protocol  
= infinity/600, slice/gap = 1/0, matrix =



MRU

- 7. Pre-contrast Obl Cor LAVA or 3D SPGR Fat-sat
  - a. Kidney + bladder
- 8. Post-contrast **Multiphase** Obl Cor LAVA or 3D SPGR Fat-sat
  - a. Gd dose 0.1 mmol/kg, max 20ml
  - b. 12 ml saline flush
  - c. Injection rate **0.1** ml/s, start scan immediately
  - d. Cover kidney to bladder
  - e. Non BH
  - f. Slice/gap = 2/1, matrix = 256
  - g. Scan 66 phases or 8-10 min



Example:

- 9. Post Ax, Sag LAVA or 3D SPGR Fat-sat
  - a. Kidney + bladder
  - b. Slice/gap = 1/0