Minimally invasive management of a complex bilateral renal anomaly in an infant

A case of bilateral duplex collecting systems with periurethral ectopic upper pole ureters and a right cecoureterocele

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Newborn female - prenatal UTD

- 18 weeks: UTD A2-3
  - Bilateral hydroureteronephrosis
  - Duplex right system
  - Right ureterocele

- Serial ultrasounds
  - Dilation and cortical thinning continue to progress
Ultrasound - 2 days of life

- **RIGHT system:** Complete duplication and a dilated right upper pole ureter
- **LEFT system:** Severe hydronephrosis. Also a complete duplication
- **BLADDER:** Possible ureterocele
Ultrasound, VCUG - 2 weeks

- Patient doing well, no UTIs
- **Physical exam** unremarkable
- **Repeat renal ultrasound** ~ stable
- **VCUG** w/o evidence of reflux, + filling defects
MAG3 – 6 weeks

- **Right = 71%**
  upper moiety: 54%
  lower moiety: 46%

- **Left = 29%**
  upper moiety: 57%
  lower moiety: 43%
MAG3 – 6 weeks

• Right = 71%
  upper moiety: 54%
  lower moiety: 46%

• Left = 29%
  upper moiety: 57%
  lower moiety: 43%
EUA, Cysto, & Puncture - 8 months

Exam Under Anesthesia
- Orifice to the left of the urethra

Cystoscopy
- Tortuous, dilated left lower pole ureter, no passage of contrast into the pelvis
- Unable to cannulate right orifice
- Right ureterocele decompressed
Surgical Planning - 8 months

PLAN:
Robot-assisted laparoscopic left lower pole pyeloplasty and left upper to lower ureteropyelostomy
Surgical repair - 10 months

**Intra-op findings**
- Additional right ectopic periurethral opening
- Right cecoureterocele
- Patent left UPJ

**Procedure performed:**
robotic- assisted laparoscopic bilateral ureteroureterostomies
Surgical repair - 10 months

Bilateral ureteroureterostomies

- (4) 8 mm ports
- Ectopic (donor) ureter divided at the pelvic brim
- Recipient ureter opened and end-to-side anastomosis was performed over a double J stent in the recipient ureter
Bilateral robotic-assisted ureteroureterostomies

Uncomplicated post-operative course

Advantages
• Single anesthetic
• Minimal blood loss
• Decreased morbidity

• Disadvantages
• Decreased working space
• Increased OR time

→ Bilateral repair safe and effective in this patient
Thank you!