

# AMSER Case of the Month: August 2019

A newborn with vaginal mass

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# Patient Presentation

5-day old ex-FT girl presents to the ED with 2 days of fussiness and decreased urine output. Mother noticed vaginal mass when patient was straining or lying supine.

**ROS:**

- No fever or weight changes
- No skin rashes or easy bruising
- No URI symptoms, diarrhea or vomiting
- No recent trauma or sick contacts.

**Past medical history:**

- NSVD
- Right “renal cyst” noted on prenatal US
- Discharged from the newborn nursery on amoxicillin prophylaxis and scheduled to follow up with urology

**Social/Family History:** Non-contributory

# Pertinent Physical Exam and Labs

**Vitals:** T: 36.5 HR: 118 BP: 90/50 RR: 40 SpO2: 99% RA

- **General:** Non-toxic appearing female
- **Abd:** Soft, non-tender, non-distended. Normoactive bowel sounds. No CVA tenderness.
- **GU:** Purple, round, ovoid mass protruding between the labia.

## Labs:

**CBC:** WBC: **18.02** N:70.0%

**Inflammatory markers:** Procalcitonin: **21.19**

**UA:** Large leuk esterase **Positive for bacteria** 80 WBCs No nitrites

## Cultures:

- **Resp Pathogen PCR, blood and CSF cultures** - negative
- **Urine culture** >100K E coli

What Imaging Should We Order?



# ACR Appropriateness Criteria

**Variant 1:** Age <2 months, first febrile urinary tract infection.

Radiologic Procedure	Rating	Comments	RRL*
US kidneys and bladder	9		←
Voiding cystourethrography	6	Consider this procedure in boys and in the presence of sonographic abnormality.	☢☢
Tc-99m pertechnetate radionuclide cystography	5	Consider this procedure in girls.	☢☢
Tc-99m DMSA renal cortical scintigraphy	3	This procedure is not a first-line test. It could be used 4 to 6 months after UTI to detect scarring.	☢☢☢
<b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			<b>*Relative Radiation Level</b>

This imaging modality was ordered by the ER physician

# Pediatric Vaginal Mass: Initial Imaging

## US of the Pediatric Female Pelvis

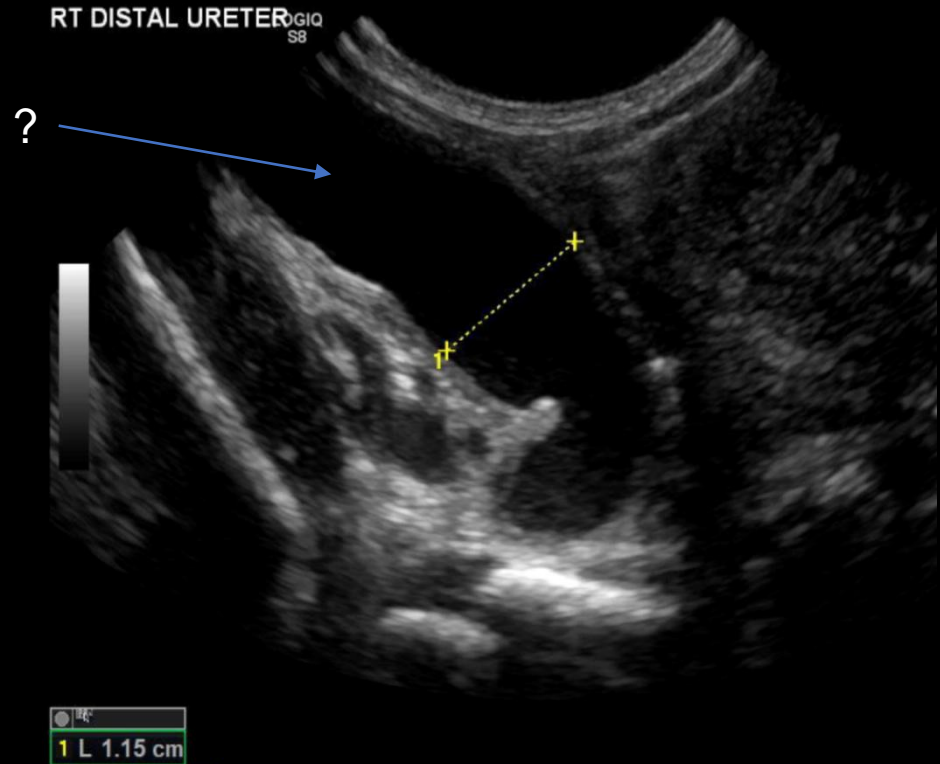
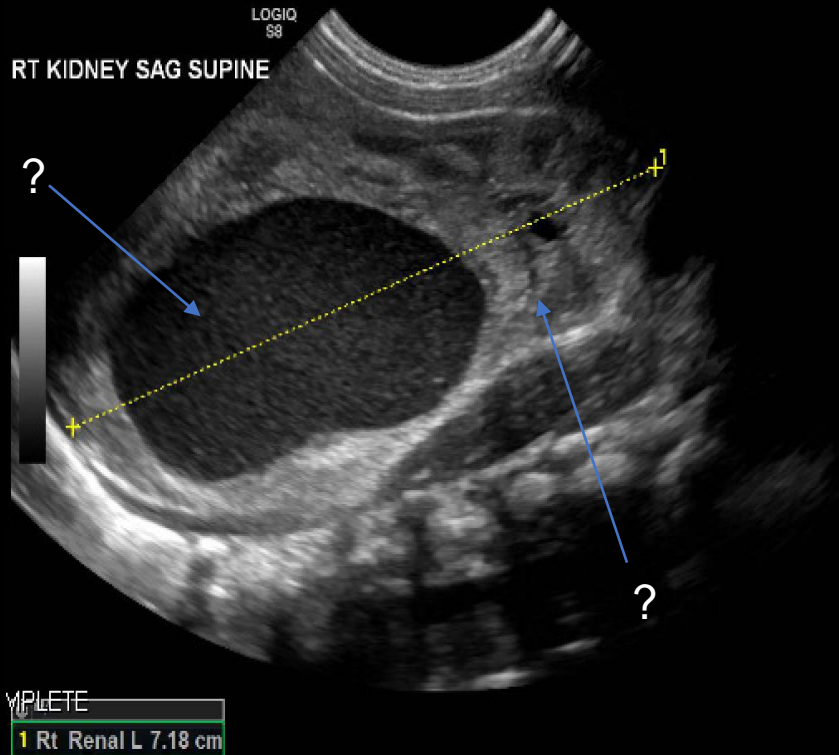
Harriet J. Paltiel , Andrew Phelps <sup>1</sup>

### ^ Author Affiliations

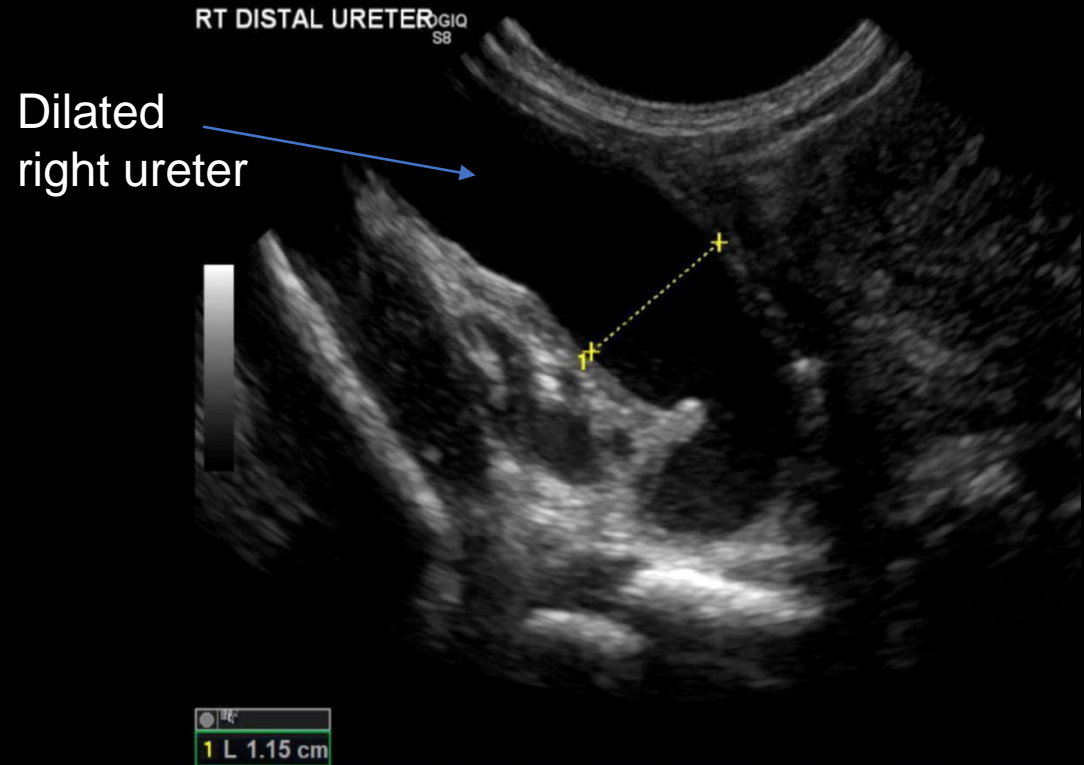
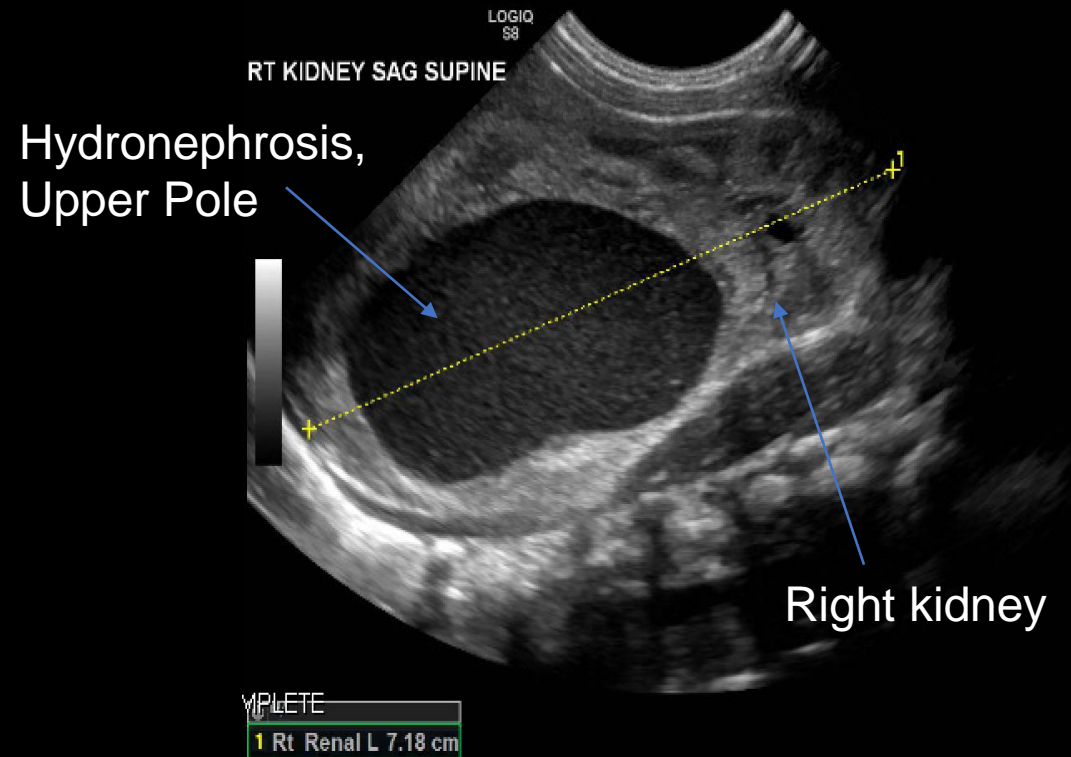
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The most common indications for imaging of the pelvis in girls include ambiguous genitalia, prepubertal bleeding, primary amenorrhea, pelvic mass, and pelvic pain. Ultrasonography (US) is the main imaging modality used in the investigation of these disorders with cross-sectional modalities, including computed tomography (CT) and magnetic resonance (MR) imaging, reserved for further characterization of congenital malformations or tumors (1–4).

# Renal Ultrasound

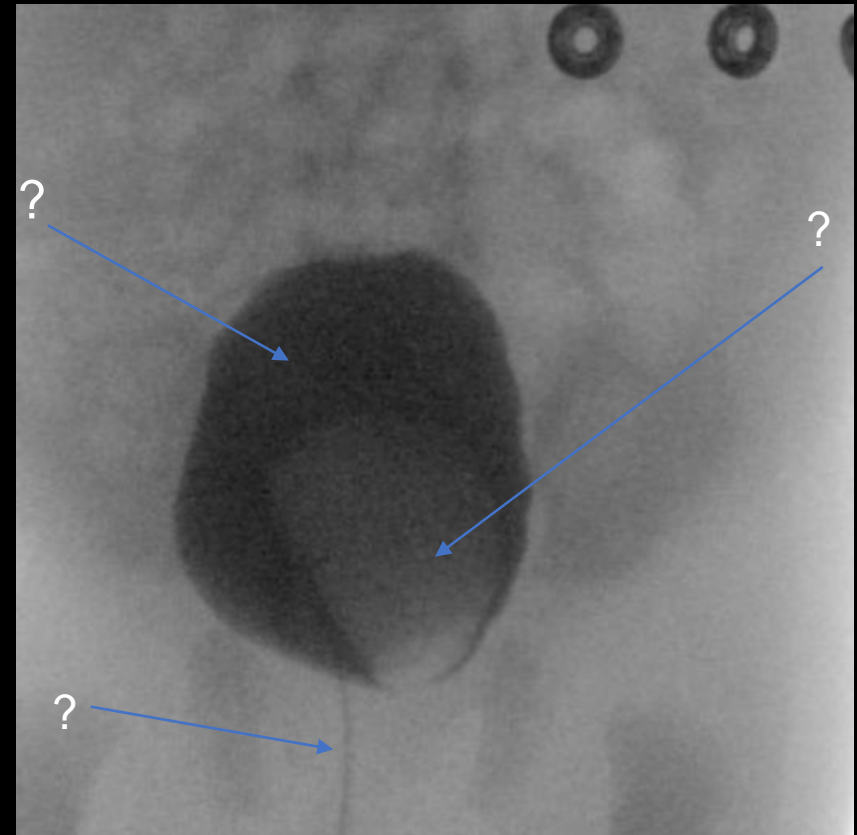
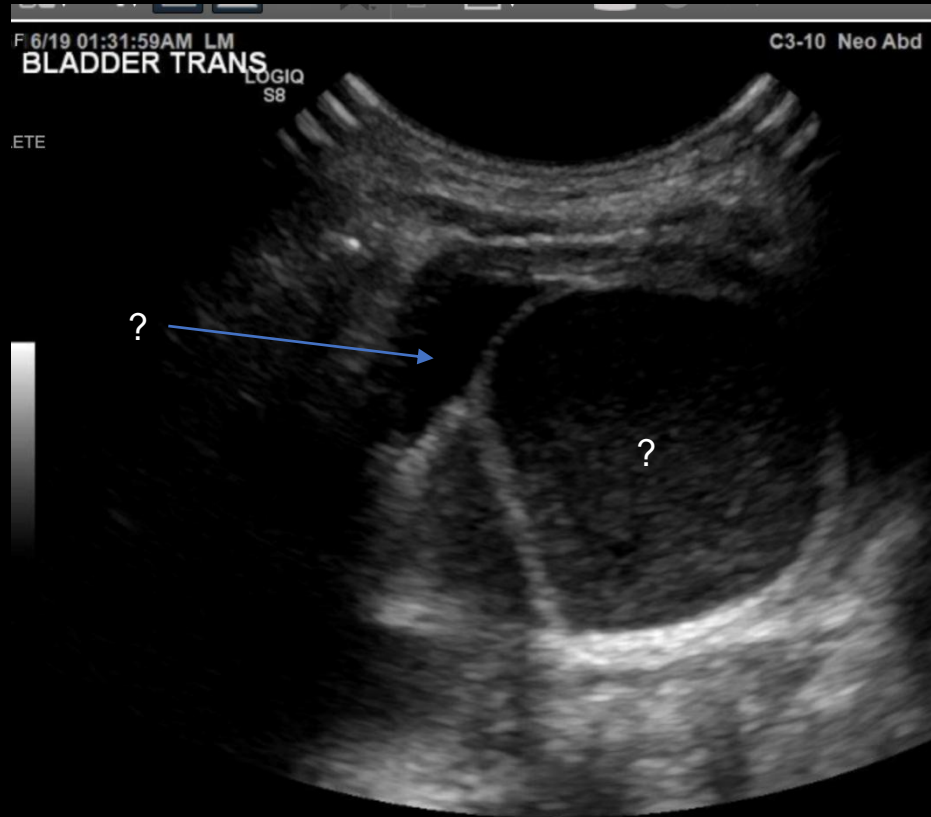


# Renal Ultrasound



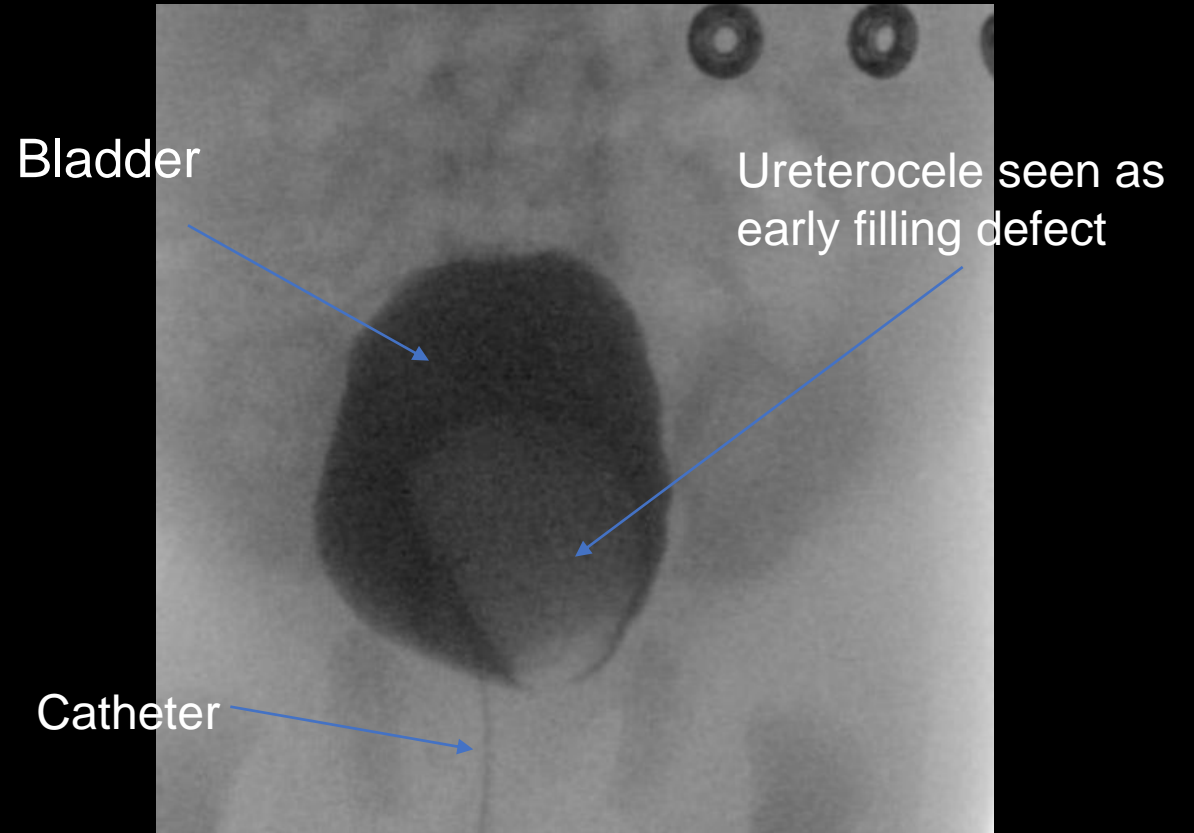
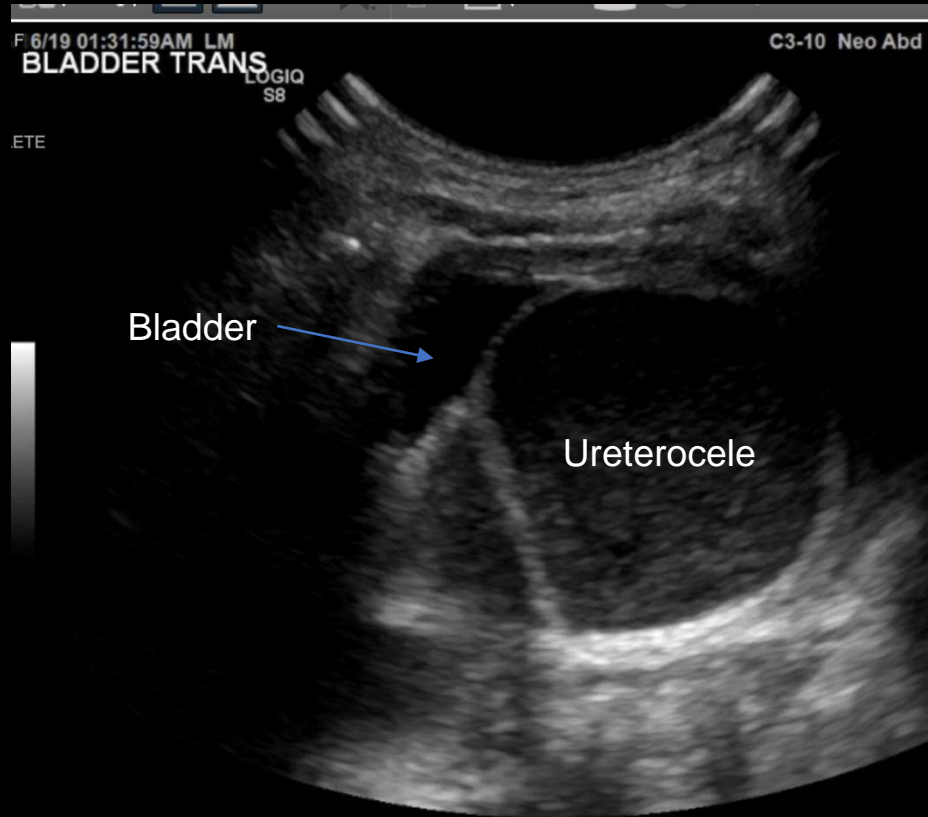


# Pelvic Ultrasound and Voiding Cystourethrography





# Pelvic Ultrasound and Voiding Cystourethrography



# Final Diagnosis

- ❑ Normal appearing uterus
- ❑ Duplicated right renal collecting system
- ❑ Large obstructing ureterocele at the base of the bladder
- ❑ Severe right hydroureteronephrosis of the upper pole moiety
- ❑ Fine echogenic debris within the upper pole collecting system and ureterocele – exclude superimposed infection

## Note:

- Ureteroceles are not usually detected on physical exam
- This one must have been big enough and partially prolapsed into the urethra to be seen through the vaginal wall

# Ureterocele

❑ **Definition:** Congenital cystic dilation of the distal intravesical ureter

❑ **Cause:** Unknown, but likely related to errors in urinary tract development during embryogenesis

❑ **Types of ureterocele:**

- ❑ 20% Single vs **80% duplicated system**
- ❑ 60-80% Ectopic – extends into bladder neck or urethra
- ❑ 15% Orthotopic – located completely within the bladder

❑ **Epidemiology:**

- ❑ More common in Caucasians
- ❑ 4-7 times in females than males
- ❑ 1 per 5000 – 12000 general peds admission

❑ **Management goals:**

- ❑ Preserve renal function
- ❑ Eliminate infection, obstruction and reflux
- ❑ Maintain urinary continence
- ❑ Minimize surgical morbidities

❑ **Main treatment modalities:**

- ❑ Conservative management with medications
- ❑ Surgery: transurethral incision, ureterocele excision or ureteroureterostomy

❑ **Many complications:**

- ❑ Urinary tract dilation and obstruction
- ❑ UTI in 50% of patients with duplicated system ureterocele and postoperative vesicoureteral reflux (VUR)
- ❑ Vesicoureteral reflux in 50%-75% with duplicated system ureterocele
- ❑ Renal insufficiency, chronic kidney disease, and renal dysplasia in 70%

# Hospitalization course

- ❑Foley catheter placed for urinary tract drainage
- ❑Urology was consulted and performed transurethral incision of ureterocele in the OR, which the patient tolerated well
- ❑Foley catheter was removed 2 days later, and the patient passed trial of void
- ❑Completed ampicillin and ceftazidime for 48 hour sepsis rule out
- ❑Then, switched to 10 day course of cefdinir for moderately resistant E coli UTI
- ❑Discharged on day 3 with plans to follow up with urology

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3. Fernandez-Pineda I, Spunt SL, Parida L, Krasin MJ, Davidoff AM, Rao BN. [Vaginal tumors in childhood: the experience of St. Jude Children's Research Hospital](#). *J Pediatr Surg*. 2011 Nov;46(11):2071-5. doi: 10.1016/j.jpedsurg.2011.05.003. PubMed PMID: 22075335; PubMed Central PMCID: PMC3476720.
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