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# Clinical Communications: Adults

## ACUTE URINARY RETENTION CAUSED BY AN OVARIAN TERATOMA—A UNIQUE PEDIATRIC PRESENTATION AND REVIEW

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☐ **Abstract—Background: Acute urinary retention (AUR) is a rare diagnosis both in pediatric and adult female populations, especially when compared to adult males. AUR occurs in women at a rate of 7 in 100,000 per year in a 1:13 female to male ratio. Multiple studies have shown that within the pediatric population AUR is far less common in females and is caused by different pathologies than AUR in adult women. Case Report: We report the case of an 11 year-old prepubescent female who presented to the emergency department with acute urinary retention found to be caused by a mature cystic ovarian teratoma. Why should an emergency physician be aware of this?: Our case is unique in that it describes an ovarian mass leading to AUR which has not previously been described in the pediatric literature. We will review the causes of AUR in the pediatric female population and compare these to the causes of AUR in other populations.** 

☐ **Keywords—acute urinary retention; AUR; bladder; dermoid cyst; mature cystic teratoma; ovarian teratoma; ovary; pediatric urinary retention; teratoma; urethra; urinary retention**

### INTRODUCTION

Acute urinary retention (AUR) is a rare diagnosis both in pediatric and adult female populations, especially when compared to adult males. AUR occurs in women at a rate of 7 patients per 100,000 per year and in a female:male ratio of 1:13 (1). Multiple studies have shown that within the pediatric population AUR is far less common in females and is caused by different pathologies than AUR in adult women (2–5). We report the case of an 11-year-old prepubescent female who presented to the emergency department with acute urinary retention found to be caused by a mature cystic ovarian teratoma. We will review the causes of AUR in the pediatric female population and compare these to the causes of AUR in other populations.

### CASE REPORT

An 11-year-old previously healthy female with no significant medical history presented to the emergency department with 18 hours of acute urinary retention. The patient had been in her normal state of health when she developed an urge to urinate. However, she could only produce a few drops when she attempted to void. Over the course of the subsequent 18 hours, the patient continued to have a periodic need to void with similar results. A few hours into the initial onset of symptoms, the patient developed nonspecific, generalized abdominal pain and an urge to defecate. She was able to produce a single, nonbloody,



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nonmucoid, watery stool, but the abdominal pain persisted. The patient took a single dose of ibuprofen and acetaminophen before her presentation to the emergency department with minimal relief of her pain.

Upon arrival to the emergency department, the patient continued to report an inability to produce a normal urinary stream. She denied a recent history of gross hematuria, dysuria, or foul-smelling urine. She denied bowel or bladder incontinence and recent trauma or illness. She denied pain, paresthesia, or decreased sensation in her legs or perineum. Her medical history was significant for constipation that had resolved >1 year earlier. The patient was premenarchal, fully immunized, and generally in good health. She denied taking any medications and denied any toxic exposure.

The physical examination revealed a well-nourished, alert, prepubescent female in mild distress. Vital signs at the time of presentation were as follows: heart rate, 102 beats per minute; respiratory rate, 20 breaths per minute; blood pressure, 133/79 mm Hg, temperature, 36.5°C (97.9°F); and oxygen saturation 100% on room air. Her abdomen was distended and diffusely tender to palpation. There were no palpable abdominal masses, and no hepatosplenomegaly or costovertebral angle tenderness. Bowel sounds were normal. Cardiac and respiratory examinations were significant for mild tachycardia and hypertension. She appeared to be well hydrated, with moist mucous membranes. A pelvic examination revealed Tanner stage II pubic hair with normal external genitalia and no apparent abnormalities. A rectal examination revealed normal rectal tone with an absence of palpable stool in the rectal vault. The remainder of the physical examination, including a thorough neurologic examination, was unremarkable; the patient was able to ambulate with a normal gait.

A point of care bedside ultrasound was performed in the emergency department and revealed bladder fullness (>12 cm bladder diameter) and mild bilateral hydronephrosis. A Foley catheter was used to remove 2 L of urine. The initial laboratory evaluation was significant for leukocytosis with left shift (15,200 white blood cells with 91% neutrophils). A basic metabolic panel was within normal limits (creatinine, 0.4 mg/dL). Urinalysis revealed a specific gravity of 1.015 with pH of 6.5, 2 to 5 white blood cells and 0 to 2 red blood cells per high power field, and she was negative for nitrites and leukocyte esterase with few bacteria. An abdominal radiograph revealed a nonobstructive bowel gas pattern with small volume colonic stool, which was considered normal.

The urology department was consulted. Given the patient's age, clinical presentation to the emergency department, and lack of clear inciting cause, it was thought that a behavioral etiology was most likely. Following initial treatment in the emergency department, the patient was admitted to the pediatric floor for clean intermittent catheterization and further management of her acute urinary retention.

On admission, an ultrasound performed by radiology revealed a thin-walled anechoic cyst measuring approximately 14 cm within the pelvis containing trace layering debris and nonvascular internal septations, possibly arising from the right ovary. No normal right ovarian tissue was visualized. Based on these findings, the cyst was believed to be most likely of epithelial origin, but a lymphatic malformation or mesenteric cyst could not be ruled out.

The decision was made to surgically remove the cyst based on a computed tomographic scan of the abdomen and pelvis that revealed hydroureteronephrosis (Figure 1). Evaluation of the cystic fluid revealed nonmalignant cells. An ovary-sparing laparoscopic ovarian cystectomy was subsequently performed. The pathology results were consistent with a mature cystic teratoma. On postoperative day 1, the patient was pain-free, able to ambulate, maintain oral hydration, and void spontaneously.

## DISCUSSION

AUR is a rare presentation in both adult and pediatric females, especially in comparison to adult males. The mean annual incidence of AUR was recently found to be 8.48 per 100,000 children presenting to a tertiary care medical center with several pediatric studies revealing a 1:3 female:male ratio (2). In adults, AUR is found at a female:male ratio of 1:13, and occurs most frequently in men as a consequence of benign prostatic enlargement, constipation, and prostate cancer (1).

Urinary retention has been defined in the pediatric literature as an inability to empty the bladder volitionally for >12 hours with a volume of urine greater than expected for the patient's age ([age in years] × 30 cc) or a palpable distended bladder (3). Our patient's distended bladder and 2 L of retained urine qualify for the diagnosis

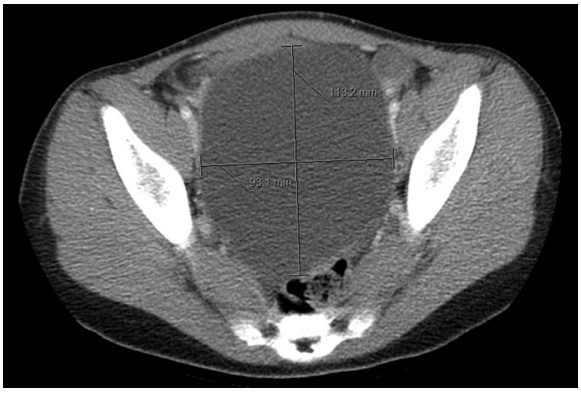


**Figure 1. Computed tomographic scan of the abdomen and pelvis. Note the 11.3 cm × 9.3 cm cystic mass filling the patient's pelvis, displacing and compressing the bladder anteriorly.**