



Case Report

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Functional Urinary Retention in Children and Adolescents: A Case Report

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Citation Parvizi M, Hooman N, Kaviyani M. Functional Urinary Retention in Children and Adolescents: A Case Report. Case Reports in Clinical Practice. 2026; 11(1): 45-50. DOI:10.18502/crcp.v11i1.22176

Running Title Functional Urinary Retention



Article info:

Received: January 19, 2026

Revised: February 8, 2026

Accepted: February 19, 2026

Keywords:

Urinary retention; Somatoform disorders; Anxiety; Children; Adolescent; Psychosomatic medicine

ABSTRACT

Functional urinary retention is an uncommon but important cause of lower urinary tract symptoms in children and adolescents. We report three pediatric patients with retention despite negative evaluations for obstruction, infection, or neurological disease. In each case, psychosocial stressors (developmental anxiety, family reinforcement, school distress) contributed. Multidisciplinary management improved symptoms in two patients; outcome was uncertain in one. These cases highlight the need to consider functional urinary retention when organic causes are excluded and to involve mental health professionals early.

Introduction

Urinary retention is difficulty or inability to empty the bladder, usually due to obstruction, neurological diseases, infections, or medication effects. However, some patients have voiding difficulty without structural or physiological abnormalities – functional urinary retention (FUR) [1-4]. It remains underrecognized. Psychogenic FUR is linked to emotional distress, somatization, anxiety, and trauma [5-7]. It is most frequent in young women but occurs at any age. Patients often undergo extensive workups, yet

imaging, neurological exam, and labs show no organic cause [8,9]. Delayed psychological consideration leads to unnecessary procedures and reinforcement of maladaptive behaviors.

FUR often coexists with anxiety, somatic symptom disorder, school avoidance, and distress-triggered symptoms [10]. In adolescents, psychological distress manifests as urinary difficulties, weight changes, or somatic complaints without medical explanation [8,10-12]. Early recognition prevents symptom chronicity and reduces unnecessary care. Despite the growing awareness of psychogenic and functional urinary retention, the literature remains

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limited, mostly single cases or specific syndromes like Fowler's syndrome. Broader psychosomatic patterns are less commonly described [4,6,8]. We present three cases (two children with acute urinary retention, one adolescent with a complex psychosomatic presentation) illustrating psychological pathways and the need for integrated psychiatric assessment.

Case presentation

Case 1

A 4-year-old girl presented with acute urinary retention shortly after toilet training began. Developmental history was unremarkable. Family history: maternal grandmother had urinary stones; paternal cousin had OCD, illness anxiety disorder, and ADHD. Parents described her as oppositional, stubborn, and occasionally bullying, in a permissive environment. Four days before admission, she had abdominal pain and vomiting; the next day she had not urinated. On exam: afebrile, stable, distressed, clinging to father, crying. Suprapubic fullness was present; no neurological deficits. Height 108 cm, weight 17 kg.

Timeline

- **Day 0:** Admitted; voiding difficulty returned; constipation improved with suppository; hematuria noted.
- **Day 1:** ~30 hours anuria; catheterization with immediate diuresis
- **Hospital course:** Psychiatric consultation, transfer to psychosomatic unit, behavioral and family interventions.
- **Day 4:** Abdominal pain and vomiting, soon after toilet training began
- **Follow up:** Stable voiding, improved behavior; fluoxetine tapered and stopped over 4 months; no relapse.

Renal/bladder ultrasound and urine culture were normal; vital signs and physical examination were unremarkable. Gastroenterology found no pathology; constipation improved with initial management. Given normal investigations, temporal association with toilet training start, distress/avoidance during voiding, and anxiety-related behaviors, FUR was diagnosed. She was transferred to a pediatric psychosomatic unit. Formulation centered on toileting anxiety, separation

distress, and caregiver accommodation reinforcing symptoms. She received gradual exposure-based toilet training with rewards; extended family involvement was reduced. Parent Management Training (PMT) was introduced. Catheterization was avoided. Medications: clonidine as needed, fluoxetine for anxiety. A turning point occurred when she stood near the toilet for two hours and voided without catheter, significantly improving her confidence. In the following weeks, she achieved steady independent toilet voiding and showed clearer emotional regulation. Fluoxetine was tapered and discontinued over four months without symptom recurrence. Behavioral patterns improved in home and clinical settings.

Case 2

A 12-year-old girl was admitted for recurrent episodes of acute urinary retention. She described sudden inability to start urinating with increasing suprapubic pressure. She denied fever, dysuria, flank pain, previous urinary tract disease, or kidney stones. Past medical history was unremarkable; she took no long-term medications. Family history contained no known neurological or urological disorders. On presentation, she was afebrile and hemodynamically stable. The abdomen was soft with suprapubic fullness suggesting bladder distention; no flank tenderness. Neurological examination (lower extremity strength, sensation, gait, perineal reflexes) was entirely normal, with no spinal abnormalities or autonomic dysfunction.

Timeline

- Day 0: Admitted for acute urinary retention; recurrent voiding difficulty.
- Day 1: Initial labs/imaging – no infection, obstruction, or neurological deficit.
- Day 2: Psychosocial evaluation completed; family reinforcement of symptoms noted.
- Days 3–5: Behavioral and supportive interventions; nephrological monitoring; spontaneous voiding gradually improved.
- Day 6: Successful independent urination; no catheter needed.
- Day 7: Discharged stable; outpatient psychiatric follow-up arranged.

Initial labs showed mild pyuria and microhematuria with negative urine culture. Renal function,

electrolytes, inflammatory markers, and CBC were normal; renal/bladder ultrasound revealed no structural pathology. Catheterization drained clear urine, but she continued to have difficulty initiating voiding independently. Psychosocial assessment revealed that voiding difficulties emerged precisely when parental attention became pronounced – a pattern compatible with reinforcement of help-seeking behaviors. Given the absence of organic pathology and the psychosocial context, FUR was diagnosed. The family initially declined psychiatric admission, but she received daily psychiatric support while under nephrology care. Treatment focused on reducing voiding anxiety and rebuilding confidence using relaxation, scheduled voiding, and predictable routines. Parent sessions aimed to minimize symptom reinforcement and encourage a calm approach. Staff promoted gradual independence and limited excessive accommodation. Over several days, her ability to initiate urination progressively improved. At discharge, she was voiding spontaneously and consistently with no recurrence of acute retention. Outpatient psychiatric follow-up was arranged, although long-term adherence could not be verified.

Case 3

A 14-year-old girl, second of three siblings from eastern Iran, was admitted to a tertiary pediatric nephrology center in Tehran for a 10-day multidisciplinary evaluation after one month of worsening urinary retention. Her medical history included familial Mediterranean fever, Henoch-Schönlein purpura (diagnosed at age 7, treated for 2 years then lost to follow-up), hypothyroidism, appendectomy, and recurrent epistaxis. Developmental milestones were normal. Family history: paternal grandfather on dialysis for renal failure. Urinary symptoms intensified at the school year's start. Her mother performed intermittent home catheterization ~3 times/day. On admission, she was taking terazosin (half tablet daily), baclofen twice daily, and had previously used domperidone. Earlier hospitalization records (4 days, 28 days, 2 weeks) were unavailable, so previous labels such as "lazy bladder" or suspected detrusor underactivity could not be verified. On presentation, the patient was stable, afebrile, and hemodynamically normal (BP 110/65 mmHg, RR 19/min, O₂ saturation 96%). Weight 51 kg, height 154 cm, eGFR 94.6 mL/min/1.73 m². She reported lifelong constipation that had worsened over six months. Neurological examination revealed no focal abnormalities; spine inspection was unremarkable.

Timeline

- **6 months prior:** Hospitalizations for presumed gastric ulcer (no documentation).
- **Subsequent period:** Gradual onset of urinary retention; later 28-day hospitalization with reported "bladder tracing" suggesting detrusor underactivity (unverifiable).
- **3 weeks prior:** Reported UTI, requiring 2-week hospital stay (no documentation).
- **1 month prior:** Urinary retention markedly worsened, coinciding with school term start; mother began intermittent catheterization at home (~3 times/day).
- **Current admission:** 10-day multidisciplinary inpatient evaluation.

Voiding cystourethrogram and renal-bladder ultrasonography were normal. CBC, electrolytes, and renal function were within normal range. MRI of the brain and spine was unremarkable. Laboratory tests including ceruloplasmin and rheumatological screening revealed no neurological or metabolic causes. Urodynamic study was attempted but could not be completed because the patient was unable to cooperate during symptomatic episodes; earlier claims of detrusor underactivity remain unconfirmed. Tests for celiac disease were negative; stool studies were unremarkable; abdominal ultrasound was normal; upper endoscopy revealed no pathology. Recommendations included medical management of constipation while avoiding suppositories and enemas. Nutritional and psychiatric evaluations were initiated in parallel. Psychiatry was consulted for school refusal, emotional distress, and possible psychosomatic involvement. The patient reported low mood, irritability, reduced motivation, and diminished academic engagement during the pandemic. She denied major sleep/appetite disturbance but admitted restricting food intake to reduce voiding urge. There was no evidence of panic disorder, GAD, OCD, PTSD, or trauma-related symptoms. Her affect occasionally appeared incongruent with distress severity—a feature seen in functional presentations. No ADHD, autism spectrum disorder, intellectual disability, or learning disorder was identified. Maternal history of mood disorder (treated with valproate and venlafaxine) was noted.

The findings suggested a multifactorial contribution: repeated medical encounters, high caregiver involvement, invasive procedures,

symptom-linked attention, and academic stress may have maintained symptoms. Causality was unproven, but all were clinically relevant. During hospitalization, she attended two psychotherapy sessions (emotion regulation, CBT for bodily symptoms) with parental guidance to reduce reinforcement of urinary symptoms while supporting graded voiding attempts. The team recommended completing medical evaluation, transfer to a psychosomatic inpatient program, a behavioral voiding plan, reduced catheterization, and pharmacotherapy if mood symptoms persisted. The family declined transfer and requested discharge. Because she had been performing frequent home catheterization and had modified the treatment plan independently, a medicolegal consultation was obtained. After discussing the risks of repeated catheterization, the father formally requested discharge under his personal responsibility, which was documented. The family planned further care elsewhere; long-term outcome was unclear due to early departure from the recommended plan.

Outcomes Summary

No organic etiology was found in any case. Outcomes varied: Case 1 resolved with behavioral strategies, parent training, and short-term fluoxetine. Case 2 improved with inpatient behavioral support, but outpatient adherence was uncertain. Case 3 had a negative comprehensive workup; the family declined psychosomatic care, so long-term outcome is unknown. These cases suggest that functional urinary retention in children/adolescents can improve when psychosocial factors are addressed, but outcomes depend on engagement with multidisciplinary care (Table 1).

Discussion

FUR sits between urology, nephrology, and psychiatry [13]. This series shows that psychological distress and family dynamics can cause and maintain voiding dysfunction. All three had negative organic workups, fitting functional somatic disorders [14]. Ruling out organic disease is necessary but can prolong hospitalization and raise anxiety, as in Case 3 (multiple admissions without answer) – resembling somatic symptom disorder [15]. Psychiatric consultation should be integral, not a last resort. Secondary gain (unintentional psychosocial benefit) was present: extra parental attention, rewards, focus on the sick role, reinforcing symptoms via operant conditioning [16]. Maladaptive parenting responses (high accommodation, anxiety) maintain symptoms [17]. Case 2 had clearly problematic parenting dynamics; Case 1 made parent training a cornerstone of treatment. Once established, family responses to symptoms can become more powerful than the original trigger (e.g., anxiety in Cases 1 and 3).

Developmental stage influenced presentation. The 3-year-old (Case 1) showed regressive, anxiety-linked non-verbal distress. The adolescent (Case 3) had a layered presentation with chronic medical conditions and social anxiety – common in functional somatic symptoms [18,19]. Treatment response was linked to addressing psychological and family factors. Case 1 benefited from a structured psychiatric plan [20,21]: this approach included pharmacotherapy with an SSRI, individualized behavioral therapy using reward systems, and Parent Management Training (PMT) to reduce symptom reinforcement while strengthening

Table 1. Clinical characteristics of patients with functional urinary retention

Parameter	Case 1	Case 2	Case 3
Age / Sex	3 yrs 8 mo / F	12 yrs / F	14 yrs / F
Presenting complaint	Acute retention after toilet training	Recurrent acute retention	Chronic recurrent retention, worsened over month
Duration of symptoms	4 days	Recurrent episodes	~6 months
Trigger	Toilet training initiation	None identified	School term onset
Associated symptoms	Abdominal pain, vomiting, constipation, anxiety	Suprapubic discomfort	Chronic constipation, low mood, school refusal, food restriction
Physical examination	Suprapubic fullness; neuro normal	Distended bladder; neuro normal	Non-focal neuro; stable
Key investigations (labs/imaging)	Normal	Mild pyuria/microhematuria; imaging normal	All normal (VCUG, MRI, labs)
Key interventions	Behavioral plan, PMT, fluoxetine, avoided catheterization	Behavioral support, parent training	CBT, parent guidance; family declined psychosomatic admission
Hospital outcome	Spontaneous voiding	Spontaneous voiding	Partial evaluation; care declined
Follow-up	Stable, medication tapered	Referral made; adherence unknown	Uncertain

adaptive behaviors. Case 3 highlights difficulties when engagement with psychosocial treatment is limited; despite identified anxiety and possible secondary gains, the family declined recommended psychosomatic admission, substantially restricting therapeutic progress. Case 2 represents an intermediate trajectory: early improvement with behavioral support but uncertain long-term outcome due to logistical barriers and incomplete follow-through. Taken together, we propose a structured pathway after excluding organic causes: assess primary psychopathology (anxiety, depression), reinforcement contingencies, and family dynamics. Coordinated management: nephrologist/urologist provides oversight; psychiatrist treats comorbidity; psychologist delivers CBT and PMT [22]. Limitations: retrospective, single center, small sample, incomplete follow-up for Cases 2 and 3. Prospective studies are needed.

Conclusion

Urinary retention may be a somatic expression of psychological distress rather than a structural disorder. Relying solely on a biomedical framework leads to repeated investigations and iatrogenic harm. Early psychiatric assessment and a multidisciplinary biopsychosocial approach are essential for accurate diagnosis and successful treatment of functional urinary retention.

Acknowledgment

We thank all study participants and the professionals at the Aliasghar Clinical Research Development Center for their support and assistance.

Ethical Considerations

Ethics Statement

The Institutional Review Board of Iran University of Medical Sciences reviewed this study and approved it (reference: IR.IUMS.REC.1404.932).

Funding

This work received funding from Iran University of Medical Sciences.

Conflict of Interests

The authors declare no conflicts of interest in relation to this work.

Author contributions

Each author contributed substantially to this work, including conception and manuscript writing. All authors took part in drafting, revising, and critically reviewing the manuscript. They approved the final version, agreed on the journal for submission, and accept accountability for all aspects of the research.

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