

CASE REPORT

Urine Like Diarrhea in Older Children: Two Case Reports

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ABSTRACT

Background: 'Urine-like diarrhea' is seen in Congenital Chloride-Losing Diarrhea (CCLD), which usually starts during the neonatal period. But without a prior history of CCLD, it is rare in older children, and there are no reported cases till now.

Case presentation: Two Bangladeshi children presented with 'urine-like diarrhea' for more than 14 days, without any previous history or suggestive findings. All investigations were negative for any etiology except fecal impaction seen on abdominal x-ray. After disimpaction, both children dramatically improved.

Conclusions: Colonic fecal impaction can present as persistent diarrhea. Keywords: Urine-like diarrhea, fecal impaction, persistent diarrhea, older children.

Keywords: Urine-like diarrhea; Fecal impaction; Persistent diarrhea; Constipation



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INTRODUCTION:

Introduction: Diarrhea is defined as three or more loose stools per day, or more frequent than normal for the individual. If the condition persists for 14 days or more, it is categorized as persistent diarrhea.¹ 'Urine-like diarrhea' is seen in congenital chloride-losing diarrhea (CCLD), which is severe, life-threatening secretory diarrhea; onset is during the 1st week of life and persists lifelong.² CCLD occurs due to mutations in the SLC26A3 gene, leading to defective chloride-bicarbonate exchanges with the resultant loss of chloride and retention of bicarbonate [3]. In older children, an acute onset of watery stool resembling urine, which lasts for several days, is rare. Due to its rarity, we are presenting two successfully managed cases.

Case study 1:

A 10-year-old Bangladeshi girl presented with frequent passage of explosive watery stool without any fecal matter (mother explained it as 'urine-like diarrhea') for 15 days. She experienced mild cramping abdominal pain before the passage of stool. There was no blood in the stool. She had no history of taking any non-food items (pica), purgatives, or antibiotics; no gluten sensitivity or known food allergy; and no recent travel history. Physical examinations were unremarkable with normal anthropometry except for an ill-defined mobile mass in the right

iliac fossa. On digital rectal examination, the rectum was empty. There was no feature of intestinal obstruction. Without fever, tenesmus, severe abdominal pain, or blood in stool, it was unlikely to be infectious or inflammatory in origin. Prior to referral, she had received ciprofloxacin, metronidazole, probiotics, and oral rehydration solution (ORS) without improvement. To exclude factitious diarrhea, the patient remained under strict 24-hour medical and parental observation, ensuring no access to irrigation tools or external fluids. Laboratory investigations, including a complete blood count and serum electrolytes (with bicarbonate), were within normal limits. Stool microscopy, cultures, and reducing substances were negative, with a stool pH of 6. Stool analysis confirmed a secretory pattern (stool osmotic gap $\approx$ 26 mOsm/kg) with characteristically low electrolytes ($\text{Na}^+ < 10$ mmol/L, $\text{Cl}^- < 15$ mmol/L). To find out the causes of secretory diarrhea, we went for a colonoscopy, esophagogastroduodenoscopy, and computed tomography of the abdomen, and all these were normal, which ruled out inflammatory bowel disease (IBD), celiac disease, or any tumor. The histopathology of the biopsy from the colon was normal. Anti-HIV I & II were negative, and the thyroid profile was normal (table 1). Before the colonoscopy, we did a plain x-

ray of the abdomen, which showed huge fecal impaction in the cecum and ascending colon. During bowel preparation with polyethylene glycol (PEG) 3350 and a sodium phosphate enema (2.5 mL/kg), a large volume of retained fecal matter was evacuated. Following disimpaction, the patient's bowel habits normalized within 24 hours. Based on the clinical resolution and radiological findings, a diagnosis of persistent watery diarrhea secondary to proximal fecal impaction was established.

Case study 2:

A 13-year-old Bangladeshi boy presented with a passage of 'urine-like stool' (Fig. 1 and video 1) for 25 days. Several times per day he experienced mild cramping abdominal pain that was followed by explosive watery bowel movements without any fecal matter. Similar to the previous case, he had no suggestive history and physical findings except an ill-defined mobile mass in the right iliac fossa. On digital rectal examination, the rectum was empty. There was no suggestive history regarding any etiology. He received ORS after each bowel motion. Like previous cases, we excluded the possibility of factitious diarrhea. Laboratory studies showed a normal complete blood count, normal serum electrolytes, thyroid profile, and negative anti-HIV I & II serology. Stool routine & microscopic examinations were normal, culture-negative, stool for reducing substance negative, and stool pH was 6. He had a stool osmotic gap of less than 50 mmol/L (Table 1), suggesting a secretory nature of diarrhea. A plain x-ray of the abdomen showed a huge fecal impaction (Fig. 2). His colonoscopy, esophagogastroduodenoscopy, and computed tomography of the abdomen were normal (table 1), which ruled out IBD, coeliac disease, or any tumors. Similarly, during colonoscopy preparation, a large amount of fecal matter passed with watery stool (video 2). The next day after that, stool became normal like in the previous case (video 3). After evaluating history, physical findings, and investigations, we also concluded that this case is diarrhea due to fecal impaction.

As this urine-like diarrhea in older children is a unique presentation and we successfully managed several cases, in our hospital facility this diarrhea is known as 'BB-Diarrhea'/'Bazlul-Benzamin Diarrhea.' We managed these children with polyethylene glycol 3350 (1 gm/kg/day) as maintenance therapy for 2 months followed by gradual tapering. On follow-up, they had been doing well without any further events. This sustained clinical recovery further supports the diagnosis of persistent watery diarrhea secondary to occult proximal fecal impaction rather than a primary secretory or factitious disorder.



Fig 1: Watery stool without any fecal matter.



Fig 2: Huge fecal impaction in the caecum, ascending colon and descending colon

Table X. Laboratory and Diagnostic Investigations of the Two Cases

Investigation	Case 1	Case 2	Reference Range / Normal
Complete Blood Count (CBC)			
Hemoglobin (g/dL)	11.2	12.5	12.5–16.1
WBC ($\times 10^9/\text{mm}^3$)	7.28	7.50	4.0–10.5
Platelets ($\times 10^9/\text{mm}^3$)	3.66	2.80	1.5–4.0
Inflammatory Marker			
High-sensitivity CRP (mg/L)	0.9	2.5	<5
Serum Electrolytes			
Sodium (mmol/L)	142	137	135–145
Potassium (mmol/L)	4.3	3.8	3.5–5.5
Chloride (mmol/L)	106	102	98–106
Stool Investigations			
Reducing substances	Absent	Absent	—
Stool RME	Pus cells 0–2/HPF, No RBC	Pus cells 0–3/HPF, No RBC	<5/HPF
Stool culture (<i>Salmonella</i> , <i>Shigella</i> , <i>Vibrio cholerae</i>)	No growth	No growth	—
<i>Clostridium difficile</i> toxin A/B (RT-PCR)	Negative	Not done	—
Stool sodium (mmol/L)	<10	Not done	20–30
Stool potassium (mmol/L)	<2	Not done	55–75
Stool chloride (mmol/L)	<15	Not done	15–25
Stool pH	6.0	6.0	6.0–7.2
Stool osmolality (mOsm/kg)	<50	<50	—
Calculated stool osmotic gap (mOsm/kg)	$\approx 26^\dagger$	Not done	50–135
Imaging			
Plain abdominal X-ray	Fecal impaction (right colon)	Fecal impaction (right colon)	—
Barium follow-through	Normal	Normal	—
Colonoscopy	Normal	Normal	—
Esophagogastroduodenoscopy	Normal	Normal	—
Contrast-enhanced CT abdomen	Normal	Normal	—
Serology			
tTG IgA (U/mL)	0.9	0.7	<4
Total IgA (g/L)	1.2	2.0	0.42–2.95
Serum calcitonin (pg/mL)	<2	Not done	<4
Serum gastrin (pg/mL)	25.8	Not done	13–115
Histopathology (colon biopsy)	Not done	Normal	—
HIV I & II	Negative	Negative	Negative
Thyroid Profile			
TSH ($\mu\text{IU/mL}$)	4.4	3.8	0.5–4.5
FT4 (pg/mL)	1.65	1.40	0.77–2.08

Abbreviations: CBC, complete blood count; CRP, C-reactive protein; CT, computed tomography; FT4, free thyroxine; HPF, high power field; IgA, immunoglobulin A; RBC, red blood cells; RME, routine microscopic examination; RT-PCR, reverse transcription polymerase chain reaction; TSH, thyroid-stimulating hormone; tTG IgA, tissue transglutaminase immunoglobulin A.

† Calculated as stool osmolality $- 2 (\text{Na}^+ + \text{K})$.

DISCUSSION:

Watery diarrhea is a common issue in children.¹ Our patients have been experiencing persistent diarrhea with urine-like, watery stool. Watery diarrhea can be caused by osmotic, secretory, or inflammatory factors, or a combination of these.^{4,5} In our cases, the diarrhea was secretory (stool osmotic gap of less than 50 mmol/L). There are various potential causes for these conditions, including laxative use, celiac disease, tropical sprue, microscopic colitis, and endocrine tumors such as VIPoma, carcinoid, gastrinoma, and thyroid medullary cancer. Prolonged infectious diarrhea (lasting more than 2 weeks) may be caused by persistent or recurrent infections.^{4,5} We excluded all the possible causes of infectious diarrhea through history and investigations. Celiac crises in untreated cases present with explosive watery diarrhea with hypoproteinemia and metabolic and electrolyte changes. Both cases were thriving well without any prior history of gluten sensitivity with normal celiac screening.⁶

Paradoxical diarrhea (also known as overflow diarrhea) occurs when liquid stool leaks around the hard, impacted fecal matter in the rectum with frequent, small, watery bowel movements that occur mostly involuntarily. This condition may also be caused by a growth in the pelvic region or urinary retention.^{7,8} Our cases, was not paradoxical diarrhea as in both cases rectum was empty and they used to defecate several times voluntarily with clear watery stool in large volumes, without any fecal matter.

Fecal impaction is defined as a large amount of hard, compressed fecal mass that is impacted at the level of the bowel and cannot be expelled spontaneously, resulting in colonic or rectal distention. In our cases, the rectum was empty, but a huge fecal impaction was present in the cecum and colon. We propose an alternative physiological mechanism in these specific cases. The massive fecal impaction in the right colon likely acted as a "gateway", and greater accumulation of secreted liquid proximal to the obstruction, allowing only the low-solute mucus and water secreted. Continuous mucosal stimulation by the fecal mass may further enhance secretory activity and lead to profuse mucous secretion, producing stool that resembles clean water.⁹ This condition explains the watery stool in our cases. Usually fecal accumulation occurs from distal to proximal unless an anatomical defect impedes the normal progression of feces, but in both cases no structural abnormality was found, as both the barium study and colonoscopy were normal, and histopathology was also normal. Fecal stasis for a long period may give rise to this pattern of fecal impaction. We could not perform a genetic study due to lack of facility, but secondarily, we excluded genetic possibility as both children were doing well after disimpaction and symptoms did not persist. These cases diverge from known patterns in pediatric constipation, and there is a lack of comparable cases in the existing literature. As these cases were very atypical, they visited several physicians without improvement. However, after proper evaluation, we managed the cases and diagnosed them as persistent diarrhea due to fecal impaction.

CONCLUSION: Colonic fecal impaction can cause persistent diarrhea with urine-like stool in children.

Statement of Ethics: The parents provided written informed consent for publication of the case reports and any accompanying images. Ethical approval was taken from the departmental review board, department of pediatrics, Sylhet M. A. G. Osmani Medical College Hospital, Bangladesh (No. 08/SOMCH/2025).

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Author's Contribution:

Md B: Conceived and designed the study, involved in data collection, performed statistical analysis and writing the manuscript.

ASM BK: Collected the data, critical review and preparation of manuscript.

All authors have read, approved the final manuscript and are responsible for the integrity of the study.

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