

# Things Are Not Always What They Seem

## Two Cases of Child Maltreatment Presenting With Common Pediatric Chief Complaints

Adam A. Vukovic, MD, MEd,\* Meifawn D. Poole, DO,† Erin F. Hoehn, MD,‡  
Alicia K. Caldwell, MD,† and Amanda C. Schondelmeyer, MD, MSc§,||

### CASES

**Abstract:** We describe 2 cases of child maltreatment who presented as common pediatric conditions: preseptal cellulitis and gastroenteritis. The first case is an 8-year-old girl who presented with progressive right eye pain, swelling, and discharge. She was initially treated for preseptal cellulitis, but eye cultures ultimately grew *Neisseria gonorrhoeae*. Further investigation revealed sexual abuse by a male family member. The second case is a 2-year-old previously healthy girl who presented with 6 hours of emesis, lethargy, and abdominal pain. Initially attributed to viral gastroenteritis, her serum blood urea nitrogen and creatinine were above what was expected for her clinical course, and she later developed signs of peritonitis. She was ultimately found to have a large bladder wall defect secondary to inflicted blunt abdominal trauma. These cases are presented to emphasize the need for pediatricians to consider child abuse even when patients present with common pediatric complaints.

**Key Words:** bladder rupture, child abuse, child maltreatment, gonococcal conjunctivitis

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Child maltreatment involves any act(s) either committed or omitted by a caregiver resulting in either potential or realized harm of a child.<sup>1</sup> A national survey of children up to 17 years of age published in 2015 noted that 25% of respondents experienced child maltreatment; 15% acknowledged maltreatment within the calendar year preceding publication. Furthermore, while emotional abuse and neglect were the most commonly cited forms of abuse, 1 in 10 children experienced physical abuse.<sup>2</sup> Medical providers often rely on social risk factors and characteristic injuries to suspect child maltreatment, which frequently leads to missed cases.<sup>3</sup> For example, at least 25% of abused infants have an identifiable abusive injury that was missed at a previous encounter.<sup>4</sup> When those characteristic features are not present, providers may be more likely to miss cases. This has significant and potentially deadly consequences for the patient.<sup>5–7</sup> We present 2 patients initially evaluated in the emergency department (ED) for common chief complaints and no characteristic features suggestive of abuse who were ultimately found to be victims of child maltreatment, highlighting the need for constant vigilance in the setting of atypical clinical presentations.

From the \*Division of Pediatric Emergency Medicine, Department of Pediatrics, Monroe Carrell Jr Children's Hospital at Vanderbilt, Nashville, TN; and †Department of Pediatrics and Divisions of ‡Emergency Medicine and §Hospital Medicine, Department of Pediatrics, and ||James M. Anderson Center for Health Systems Excellence, Cincinnati Children's Hospital Medical Center, Cincinnati, OH.

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Reprints: Adam A. Vukovic, MD, Med, 2200 Children's Way, Nashville, TN

37232 (e-mail: adamv916@gmail.com).

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### Case 1

An 8-year-old girl presented to the ED with right eye pain and swelling. Her history was significant for right eye erythema that began 3 days prior to presentation, initially evaluated at an outside hospital and treated with topical antibiotics. With worsening pain, swelling, and erythema over the following 2 days, she presented to our institution. Other than tactile temperatures and pain with eye movement, her history was unremarkable.

On arrival, the patient appeared shy but was cooperative with examination. Vitals were as follows: temperature 37.6°C, heart rate (HR) 108 beats/min, respiratory rate 20 breaths/min, blood pressure (BP) 106/69 mm Hg, and oxygen saturation 100% on room air. On eye examination, the patient had significant right eyelid edema with upper and lower eyelid margins that were difficult to separate despite warm soaks. She was tender along the orbital ridge and the right zygomatic arch. Erythema extended to the right zygomatic arch. There was thick, purulent discharge at the lid margin. The left eye was normal in appearance without erythema or edema. The patient exhibited right eye pain with lateral and upward movement of the eyes. Partial visualization of the pupil showed a round pupil with normal direct and consensual light responses, from 5 mm to 3 mm. She had significant chemosis. She did not exhibit any proptosis. The remainder of her examination was nonfocal including normal oropharynx with moist mucous membranes; clear lungs; normal heart tones without murmur; soft abdomen without rebound, guarding, or tenderness; normal capillary refill in extremities; and gross neurologic examination without any deficits.

A computed tomography (CT) scan of the orbits revealed inflammatory changes of the preseptal space with asymmetric abnormal conjunctival enhancement on the affected side and mild sinus disease. There was no postseptal involvement or proptosis. A culture of the exudate was taken. No other laboratory tests were obtained in the ED. The patient was admitted to the hospital on empiric coverage with ampicillin/sulbactam for presumed diagnosis of preseptal cellulitis.

The patient showed some clinical improvement early in her hospitalization; however, her eye culture grew *Neisseria gonorrhoeae* at 36 hours, which was confirmed on repeat testing. Ophthalmology was consulted, and the patient was started on moxifloxacin drops and erythromycin ointment. She also received ceftriaxone and azithromycin while awaiting additional sexually transmitted infection laboratory test results, all of which were negative.

Given the suspicion for sexual abuse after obtaining the culture result, the hospital child abuse team was consulted. The patient ultimately disclosed that a male adult relative had inappropriately touched her genital region, and child protective services and the local police department were notified to further investigate the case. Ultimately, the patient was discharged home on a course of amoxicillin-clavulanate, moxifloxacin drops, and Erythromycin

ointment. In her follow-up visit with ophthalmology, she was asymptomatic, and her examination was normal.

## Case 2

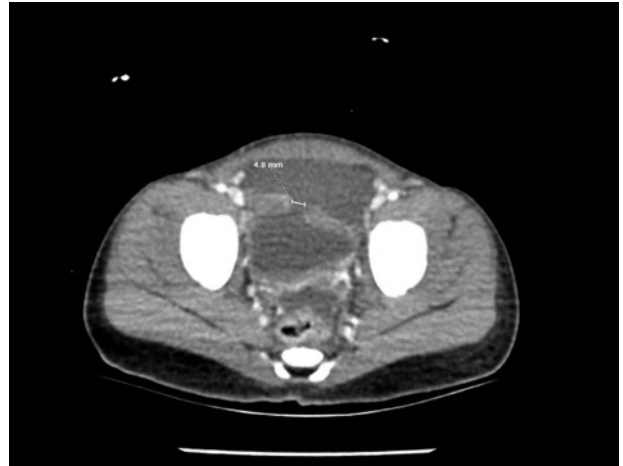
A 2-year-old previously healthy girl presented to ED with emesis and lethargy. She was in her usual state of health several hours before presentation when she suddenly began having abdominal pain, temperature to 37.7°C, and 6 episodes of nonbloody, nonbilious emesis. She was also noted to have poor urine output during this time, but no diarrhea. She became progressively less active at home, so her parents brought her to the ED.

In the ED, she was noted to be listless and ill-appearing. Vital signs were as follows: temperature 37.8°C temporal, HR 140 beats/min, respiratory rate 28 breaths/min, BP 103/61 mm Hg, and oxygen saturation 100%. Examination of scalp revealed scattered alopecia. Mucous membranes were moist; there was brown material on her tongue. Lungs were clear to auscultation bilaterally. Cardiovascular examination revealed tachycardia without murmur. Abdominal examination was notable for significant suprapubic tenderness without rebound or guarding. Extremity examination was notable for capillary refill of 3 seconds. She demonstrated a grossly normal neurologic examination. Her skin was warm and dry without bruises or abrasions. A peripheral intravenous catheter was inserted, blood was sent for laboratory tests, and she received two 20-mL/kg boluses of normal saline with improvement in her tachycardia but had no urine output. Initial laboratory test results were significant for venous pH 7.299, partial pressure of carbon dioxide 38.4 mm Hg, base deficit 8 mmol/L, white blood cell count 18,900/ $\mu$ L (86% neutrophils), hemoglobin 12.2 g/dL, blood urea nitrogen (BUN) 30 mg/dL, creatinine (Cr) 1.27 mg/dL, anion gap of 20 mmol/L, aspartate aminotransferase 102 U/L, and alanine aminotransferase 131 U/L. Initial urinalysis showed large blood (>50 red blood cells per high-power field), 5 to 9 white blood cells per high-power field, large protein and small ketones, negative leukocyte esterase, and negative nitrite. An abdominal x-ray showed mild gaseous distention with no signs of obstruction. The working diagnosis in the ED was gastroenteritis with acute kidney injury. She was admitted to the pediatric intensive care unit (PICU) given her altered mental status and laboratory abnormalities.

In the PICU, she was started empirically on ceftriaxone. She had a urinary catheter placed to monitor urine output. A renal ultrasound was performed, which showed normal kidneys, compressed bladder with catheter in place, and a moderate amount of complex ascites. Renal function was closely monitored; Cr peaked at 1.47 mg/dL, but within 12 hours of admission, it improved to 0.32 mg/dL. Her mental status improved, and she had adequate but grossly bloody urine output. Her Foley catheter was removed, and she was transferred to the hospital medicine service for further management.

Shortly after transfer from the PICU, she had several episodes of bilious emesis and progressive lethargy. On examination, she had abdominal distension with voluntary and involuntary guarding. Vitals were significant for BP 86/64 mm Hg, HR 148, and temperature 37.1°C. She was given a 20 mL/kg normal saline bolus, but had persistent tachycardia without additional urine output. Abdominal, pelvic, and head CT scans were obtained. The head CT was normal, but the CT of the abdomen and pelvis showed 1.6  $\times$  0.5-cm anteroinferior bladder wall defect, free intraperitoneal fluid, and signs of ileus (Fig. 1). Given these results, pediatric surgery and urology were consulted, and the patient was taken emergently to the operating room.

Diagnostic laparoscopy was initially attempted, but the bladder wall defect could not be visualized, and the procedure was converted to an open laparotomy. The patient was noted to have



**FIGURE 1.** Computed tomography scan of abdomen/pelvis demonstrating anteroinferior bladder wall defect with free intraperitoneal fluid.

a 5-cm bladder wall defect, which was repaired. The patient tolerated the procedure well and was transferred to the floor postoperatively. She did well for the remainder of her hospitalization and demonstrated normal spontaneous voiding once the Foley was removed. Voiding cystourethrogram prior to discharge showed no residual intraperitoneal leak.

Of note, the patient had no reported history of trauma prior to her presentation. However, on further chart review, she had previous ED presentations for vaginal discharge and conjunctival hemorrhages, which were thought to be possible sentinel injuries. Social work and the hospital child abuse team were consulted for further investigation given the strong suspicion for inflicted trauma as the cause of her injury, which was confirmed during their investigation. She was removed from her parents' custody and discharged home in the custody of another family member.

## DISCUSSION

Child maltreatment continues to be a frequent but often unrecognized and underreported issue and includes physical abuse, sexual abuse, emotional abuse, and neglect.<sup>8</sup> More than 1500 children die annually in the United States secondary to child maltreatment.<sup>8</sup> Children who survive their maltreatment often have ongoing medical and psychiatric illnesses throughout their lifetime, with anxiety, depression, suicidality, and cardiovascular and lung disease all occurring at higher rates among abused children.<sup>9–15</sup> Beyond the psychosocial aspects of direct maltreatment, these long-term effects of child maltreatment incur huge individual and societal costs.<sup>10</sup>

In our first case, an 8-year-old girl presented with ocular findings initially concerning for preseptal cellulitis. The degree of exudative drainage, however, was uncharacteristic of this diagnosis, but very consistent with gonorrhea conjunctivitis, which is exceedingly rare in school-age children.<sup>16,17</sup> While this alternatively could have reflected bacterial conjunctivitis with associated reactive inflammatory changes, it was worsening despite otherwise appropriate antibiotic management, prompting the ocular culture that yielded the diagnosis and prompted the disclosure of sexual abuse. Gonorrheal conjunctivitis in a prepubertal child should be considered sexual abuse until proven otherwise and should always prompt further investigation and sexually transmitted infection testing. There have been reports of nonsexual transmission via fomites or during epidemics in institutions; however, sexual contact is the most likely cause of transmission of gonorrhea in a prepubertal child.<sup>18–21</sup>

In our second case, we describe a victim of physical abuse including blunt abdominal trauma who presented with bladder rupture and resultant pseudorenal failure. The bladder is an abdominal organ prior to 6 years of age, making it vulnerable to rupture with blunt abdominal injury.<sup>22,23</sup> Despite this injury risk, bladder rupture in the setting of nonaccidental trauma is rare and infrequently reported in the literature.<sup>22–25</sup> Intraperitoneal bladder rupture results in the development of urinary ascites, which leads to abdominal distension, peritonitis, oliguria/anuria, and peritoneal resorption of urine. One important feature in this case was the elevated BUN and Cr on initial laboratory evaluation, which was disproportionate to a reportedly short duration of illness prior to presentation. While initially attributed to acute kidney injury in the setting of acute viral gastroenteritis, the true etiology of her elevated BUN and Cr in this case was peritoneal resorption of urinary ascites. This phenomenon, termed “pseudorenal failure” has been reported in the literature and noted in prior cases of bladder rupture in the setting of child abuse.<sup>22,23,26</sup>

Another important laboratory feature for this patient was the elevated liver enzymes. Elevation in liver enzymes is not a common finding in routine viral gastroenteritis; however, it has been associated with nonaccidental trauma. Studies have shown that when there is concern for physical abuse elevated aspartate aminotransferase or alanine aminotransferase greater than 80 U/L is 83.8% sensitive and 83.1% specific for abuse and should prompt more definitive diagnostic testing.<sup>27</sup> Had child abuse been on the initial differential diagnosis, these laboratory results may have prompted further testing when they resulted. This again stresses the importance of keeping child abuse on the differential for patients without clear diagnoses.

## CONCLUSIONS

Constant vigilance is imperative for identifying cases of potential child maltreatment. Although historical presentations and physical findings characteristic of abuse may suggest the possibility of inflicted injury to medical providers, presentations with subtle, atypical, or absent findings can go unrecognized. Further, caregivers in the setting of inflicted physical or sexual trauma are often either not forthcoming with information or are not privy to the etiology of patient complaints when they are not the aggressor. Medical providers should take this into account when the history of the present illness seems discordant with physical examination findings or laboratory results and should maintain a high suspicion of child maltreatment in these settings.

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