

PHOTOCLINIC

# Acute Ileocolitis Secondary to Group A Streptococcus in an Otherwise Healthy Girl

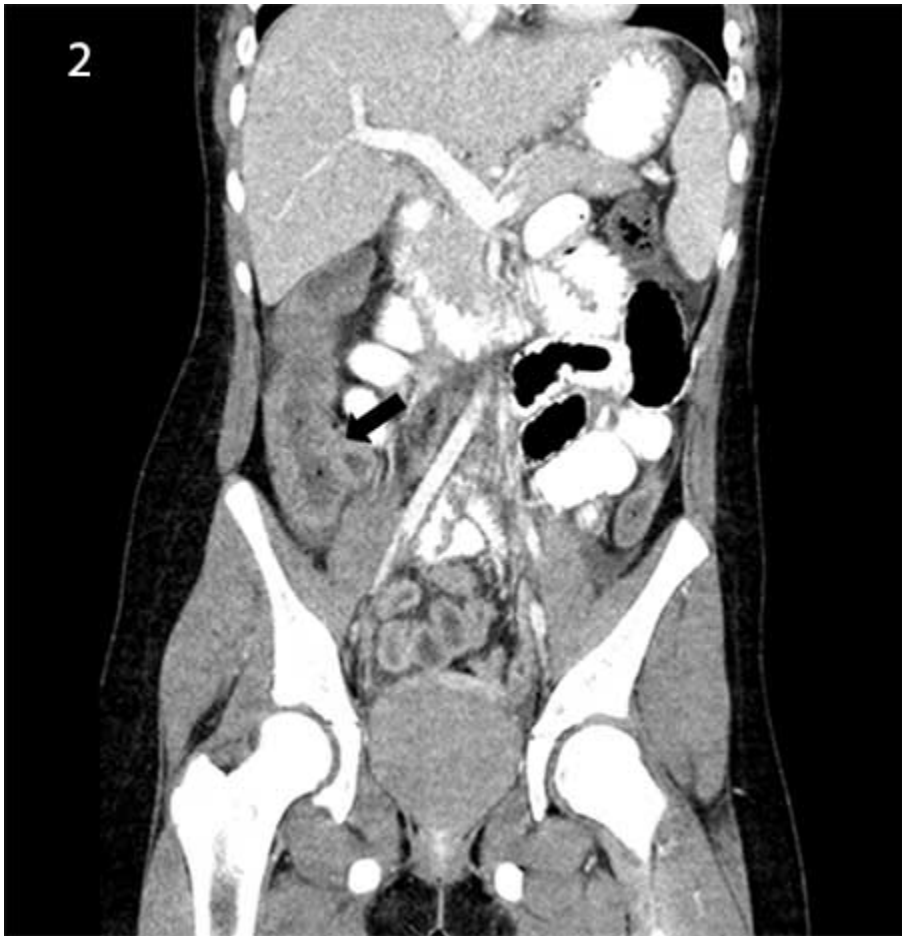
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A 10-year-old girl who was otherwise healthy presented at the emergency department (ED) with a 4-day history of fever (maximum temperature of 40°C), diffuse abdominal pain, vomiting, and bloody diarrhea. She was dehydrated and had a pulse of 151 beats/min, blood pressure of 98/63 mm Hg, and peritoneal signs that included generalized abdominal tenderness, guarding, and rigidity. Laboratory test results showed a white blood cell count of  $44.1 \times 10^9/L$  (reference range,  $3.5\text{-}10.5 \times 10^9/L$ ) and C-reactive protein of 454 mg/L (reference range,  $\leq 8$  mg/L). Abdominal ultrasonography was ordered to evaluate for acute appendicitis, and results were inconclusive.

Following the abdominal ultrasonography, a computed tomography (CT) scan of the abdomen and pelvis was performed. The CT excluded acute appendicitis but showed diffuse wall thickening and inflammatory change surrounding the terminal ileum, suggesting terminal ileitis (**Figure 1**). The girl was discharged home with instructions to follow up as an outpatient. One day later, her abdominal pain worsened, and a repeat abdominal CT scan showed progression of the wall thickening at the terminal ileum to involve the right colon, with delayed passage of contrast distal to the terminal ileum (**Figure 2**).



The girl was admitted to the pediatric intensive care unit and given a normal saline fluid bolus. Blood and stool culture were obtained. Other stool studies, including *Clostridium difficile*, adenovirus, vancomycin-resistant *Enterococcus*, rotavirus, enterovirus, norovirus, Shiga toxin polymerase chain reaction, Giardia, and Cryptosporidium antigens were all negative. She was started on broad spectrum antibiotics and antifungal medication (vancomycin, cefepime, metronidazole, and fluconazole).

The pediatric surgery department was consulted and recommended no surgical intervention because of the lack of identifiable surgical cause and the patient's critical status. The patient responded gradually to fluid resuscitation, inotropic support, and antibiotics. Both blood and stool cultures grew *Streptococcus pyogenes*. Antibiotics were discontinued, and piperacillin/tazobactam was started. The girl continued to improve clinically, and her inflammatory markers trended down. Repeat blood cultures were negative for *S pyogenes*. She received piperacillin/tazobactam for 10 days and was de-escalated to oral amoxicillin for 2 weeks. Her course was complicated by right lower lobe pneumonia that required treatment with intravenous ceftriaxone for 2 weeks.

Two months later, the girl had a follow-up magnetic resonance enterography with results that showed significant improvement in her bowel thickening. No endoscopic evaluation was performed because symptoms had resolved and the findings on abdominal MRI were reassuring.

## DISCUSSION

Group A  $\beta$ -hemolytic streptococcus (GABHS) is a common cause of acute bacterial pharyngitis and other cutaneous and invasive infections in children.<sup>1</sup> Invasive infections have an estimated incidence in children of 2 to 3 cases per 100,000 per year, with a 2% to 8% mortality rate.<sup>2,3</sup> Multiple organisms have been identified as a cause of primary peritonitis.<sup>4</sup> To our knowledge, the literature has reported only 4 cases of GABHS peritonitis in previously healthy patients aged 7 months to 14 years.<sup>5,6</sup> These patients were treated with fluid resuscitation and antibiotics, and they underwent exploratory laparotomy because they were acutely ill and secondary causes of peritonitis could not be ruled out definitively with diagnostic imaging.

In this case, we have described a 10-year-old girl with rapidly progressing acute abdomen, peritonitis, and ileocolitis secondary to GABHS. The case was managed successfully without the need for surgical intervention. It is important for clinicians to consider invasive GABHS infection in the differential diagnosis of patients with acute abdomen and the radiologic finding of acute ileocolitis because early recognition and timely interventions can improve outcomes and decrease mortality and morbidity.

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## References

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