

CLINICAL VIGNETTE

An Atypical Presentation of the Most Common Bacterial Diarrheal Infection: Shigellosis in a 27-Year-Old Daycare Goer

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Introduction

Shigella is a family of bacteria, transmitted fecal-orally, responsible for most cases of bacterial diarrhea. In immunocompetent hosts, the infection typically resolves within seven days without treatment.¹ In severe cases, bacteremia, seizures, reactive arthritis, hemolytic uremic syndrome, as well as intra-abdominal pathology including intestinal obstruction, perforation, and toxic megacolon can occur.² We describe a case of a young woman who had symptoms of shigellosis for over one month prior to seeking treatment; she presented with severe sepsis attributed to the infection without other complications of severe disease.

Case Presentation

The patient is a 27-year-old female who presented with fever. Over the past five years she had multiple viral and bacterial infections. She has cerebral palsy complicated by gastrostomy tube dependence, seizure disorder, and severe disability resulting in complete dependence on family. She presented with one month of fever, diaphoresis, cough with secretions, and frequent large volume stools, along with lethargy and intermittent mild headaches. She is unable to communicate at baseline, however, per her aunt, this presentation was similar to her last episode of pneumonia due to rhinovirus. She originally presented to urgent care, who redirected her to the emergency department when preliminary labs showed a lactate of 53 mg/dL.

Upon presentation to the emergency department, she was afebrile with heart rate 105, blood pressure 136/72, respiratory rate 30, and oxygen saturation 92% on room air. Her exam was notable for diaphoresis, heavy oral secretions without increased work of breathing, and a soft abdomen with guarding. The remainder of her exam, including her mental status, was at baseline per family. Her labs were notable for white blood cell count $8 \times 10^3/\mu\text{L}$ (baseline lymphopenia, $2 \times 10^3/\mu\text{L}$), hemoglobin 13.6 g/dL, platelet count $139 \times 10^3/\mu\text{L}$ (baseline chronic thrombocytopenia typically 70-90), and a repeat lactate of 57 mg/dL with associated anion gap metabolic acidosis. Venous blood gas on presentation showed pH 7.44 and pCO₂ 35. She was fluid resuscitated and started on broad-spectrum antibiotics for empiric treatment of sepsis. Given her elevated lactate and increased stooling with guarding on abdominal exam, CT abdomen and pelvis showed no intra-abdominal pathology. Blood cultures and respiratory cultures showed no

evidence of infectious pathogens. The day after admission, her lactate improved to 10 mg/dL and her anion gap returned to normal limits. Her tachycardia and respiratory status also improved. Stool enteric pathogen PCR was positive for shigella without shiga toxin detection. The case was reported to the Department of Public Health. The microbiology lab attempted to isolate the Shigella to evaluate for susceptibilities, but they were unable to isolate the organism, which is not uncommon.³ After three days of hospitalization with intravenous fluid resuscitation and de-escalation of antibiotics to cefixime for treatment of shigellosis, her diaphoresis, large volume stools and abdominal exam improved.

Discussion

There are numerous components of this case that make it an atypical presentation of a very common bacterial diarrheal infection. The majority of cases are self-limited and resolve without treatment within seven days.¹ This patient had typical shigellosis symptoms for one month. Although not confirmed bacteremic, her presentation was consistent with severe sepsis, including a relative leukocytosis, tachypnea, tachycardia, and anion gap metabolic acidosis with elevated lactate. This suggests she had systemic infection with likely associated severe dehydration. The only isolated infectious organism was Shigella in her stool, and all of her symptoms, including diaphoresis, frequent large volume stools, lethargy and headache, improved with targeted treatment. Her cough was later attributed to uncontrolled asthma.

Despite her duration of symptoms and severe sepsis, she had no signs of systemic complications, including intra-abdominal pathology. This patient also did not have many other metabolic disturbances seen systemically with severe Shigella.⁴ Arguably, her most alarming metabolic disturbance was her severe lactic acidosis. Interestingly, volume depletion is uncommon in most cases of shigellosis.⁵ It is presumed that losses from one month of fever and frequent stooling contributed to this patient's tachycardia, hypoperfusion, and lactic acidosis. In her case, no seizures were reported at home by her family or noted during the admission.

The patient is in daycare, which likely points towards her exposure. Fortunately, when she became symptomatic, her family kept her home, and she did not return to the facility

during the course of her illness. No other clients of the daycare reported similar symptoms at the time of presentation. Additionally, no one in the family home had similar symptoms but were cautioned on the high risk for transmission.⁶

Conclusion

A 27-year-old female who presented with severe sepsis due to a *Shigella* infection without other systemic complications of the disease. Shigellosis is a common bacterial diarrheal infection that typically self-resolves within seven days of symptom onset.¹ Diarrhea caused by *Shigella* is typically bloody or mucoid and is rarely large volume as seen in our patient.⁵ Although there are numerous severe consequences of *Shigella* infection, this patient had none. Fortunately, despite its high infectivity rate, no other members of her family or community had symptoms to suggest transmitted infection.⁶

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