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Case Report

Unusual presentation of *Campylobacter diarrhea* in a 12-week-old infant: a case report

Sahithi Putcha*

NRI Medical College, Guntur, Andhra Pradesh, India

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***Correspondence:**
Dr. Sahithi Putcha,
E-mail: putcha.sahithi@gmail.com

ABSTRACT

Campylobacter infection is a common cause of bacterial gastroenteritis in children. However, it typically presents with symptoms such as fever, diarrhea, and abdominal pain. We reported an unusual case of *Campylobacter diarrhea* in a 12-week-old infant who initially presented with decreased appetite and blood in stool, without fever or diarrhea. Then subsequently infant had developed fever and diarrhea. The case highlights the importance of considering atypical presentations of *Campylobacter* infection in young infants, leading to timely diagnosis and appropriate management.

Keywords: *Campylobacter* infection, Diarrhea, Fever, Infant

INTRODUCTION

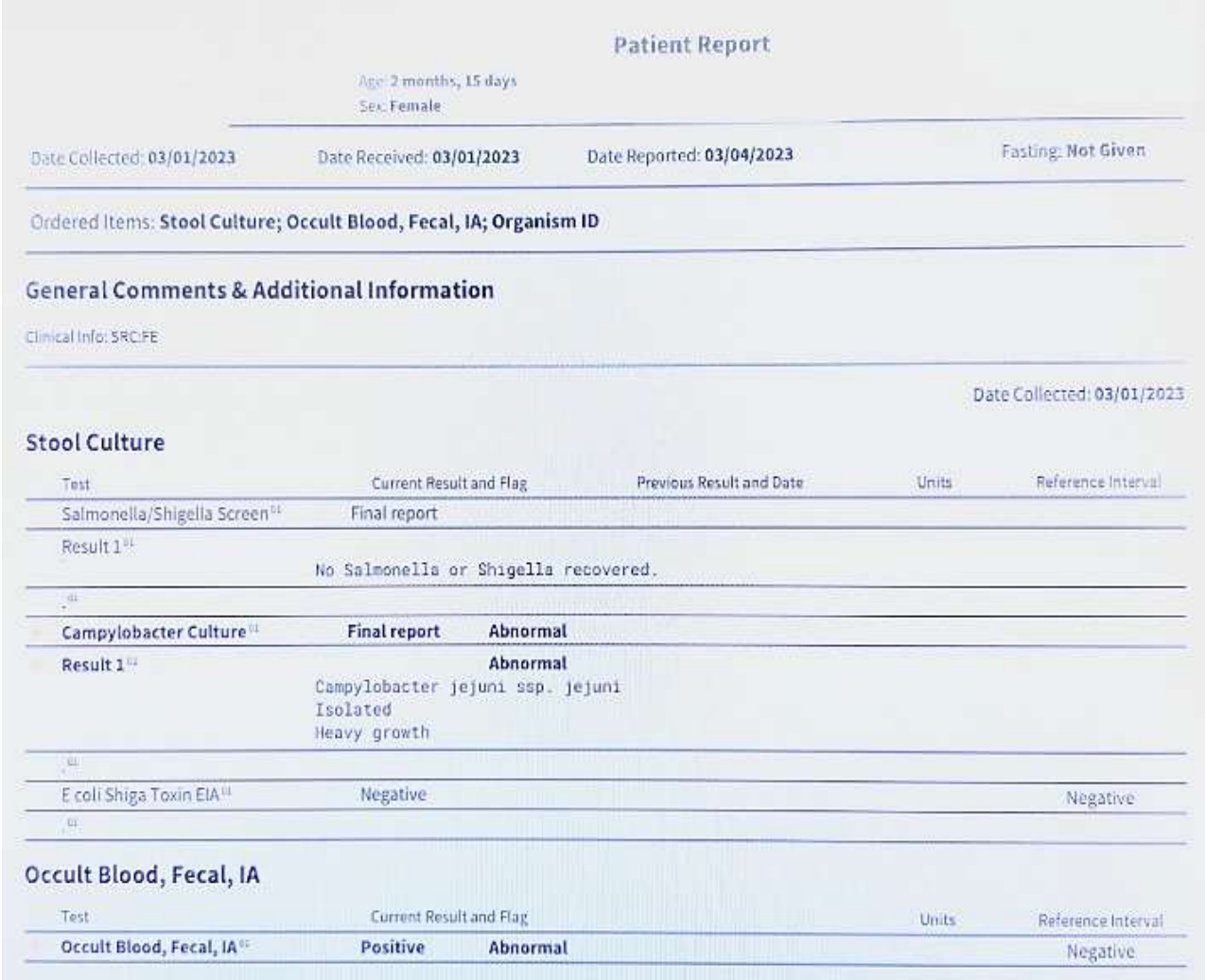
Campylobacter is a gram-negative bacterium commonly associated with gastroenteritis in children. The foodborne diseases active surveillance network (food net) surveillance group, a project of the CDC and Emerging Infections Program, has documented 28.4 cases per 100,000 infants.[1] *Campylobacter* species cause gastroenteritis and typically present with diarrhea that may or may not be bloody, emesis, and abdominal pain.[2] However, the presentation of *Campylobacter* infection can vary, leading to diagnostic challenges. This pathogen is also associated with post-infectious auto-immune sequelae including Guillain-Barré syndrome. We presented a case of *C. diarrhea* in a 12-week-old infant with an unusual initial presentation of decreased appetite and blood in stool, without fever or diarrhea.

CASE REPORT

A 12-week-old female infant was brought to the pediatric outpatient clinic in New Jersey with a chief complaint of decreased appetite and blood in her stool. The infant was accompanied by mother who reported that the infant had decreased appetite, irritable and three episodes of blood in the stool in last two days. The child had no history of fever or diarrhea. She was born at term via normal vaginal delivery, and her immunization status was up to date. The family denied any recent travel or sick contacts. On examination, the infant appeared well-nourished and hydrated. Vital signs were within normal limits. The abdominal examination was unremarkable, with no tenderness or palpable masses. Laboratory investigations revealed a mild leukocytosis (white blood cell count: 13,500 cells/mm^3) with a left shift. Stool cultures were ordered, and the patient was advised to continue breast milk or formula feeds while monitoring for any further symptoms.

In this case, the initial symptoms of decreased appetite and blood in stool without fever or diarrhea raised the possibility of food protein-induced proctocolitis or viral gastroenteritis. Food protein-induced proctocolitis is a common condition in infants, characterized by bloody stools without systemic symptoms. Viral gastroenteritis can also present with similar symptoms, although fever is often observed.

Over the next 48 hours, the infant developed a low-grade fever (38.3 °C) and an increase in the frequency of loose stools. The stool consistency progressed to watery diarrhea, for 8 to 10 times a day which prompted the family to seek medical attention again. The infant had watery stools on this visit, and appeared moderately dehydrated, with dry mucous membranes and decreased urine output. Repeat laboratory investigations were ordered. A repeat stool culture was obtained, and empiric treatment with oral rehydration solution and broad-spectrum antibiotics was initiated.



Patient Report

Age: 2 months, 15 days
Sex: Female

Date Collected: 03/01/2023 Date Received: 03/01/2023 Date Reported: 03/04/2023 Fasting: Not Given

Ordered Items: Stool Culture; Occult Blood, Fecal, IA; Organism ID

General Comments & Additional Information

Clinical Info: SRCIFE

Date Collected: 03/01/2023

Stool Culture

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Salmonella/Shigella Screen	Final report			
Result 1	No Salmonella or Shigella recovered.			
Campylobacter Culture	Final report Abnormal			
Result 1	Abnormal Campylobacter jejuni ssp. jejuni Isolated Heavy growth			
E coli Shiga Toxin EIA	Negative			Negative

Occult Blood, Fecal, IA

Test	Current Result and Flag	Units	Reference Interval
Occult Blood, Fecal, IA	Positive Abnormal		Negative

Figure 1: Stool culture report.

Laboratory investigations revealed a leukocytosis (white blood cell count: 15,500 cells/mm³) with a left shift, elevated C-reactive protein levels, and metabolic acidosis. Stool examination demonstrated the presence of red blood cells and fecal leukocytes. No ova, cysts, or parasites were identified. The stool culture report returned positive for *Campylobacter jejuni*.

The diagnosis of *C. diarrhea* was established, and the infant was started on oral azithromycin (Zithromax 100 mg/5ml oral suspension) at a dose of 3.75 ml/day for 5 days. Supportive measures, including oral rehydration solution, were implemented to correct the dehydration and acid-base imbalance. The fever subsided, and the diarrhea gradually improved over the next week. Serial stool cultures were negative for *Campylobacter* after completion of antibiotic therapy.

Hygiene measures play a vital role in preventing and managing *Campylobacter* infections. Education regarding proper hand hygiene, safe food preparation and consumption, and avoiding cross-contamination was emphasized to caregivers.

DISCUSSION

Campylobacter infection typically presents with fever, abdominal pain, and diarrhea. However, our case highlighted an atypical presentation of *Campylobacter* infection in a 12-week-old infant.

The incubation period for *C. jejuni* is between 1-7 days and initial symptoms may include a prodrome phase, often accompanied by fever, headache, malaise and myalgias. This early prodrome is generally followed by

cramping abdominal pain, high fever (up to 104 °F), and numerous, often bloody or mucoid loose bowel movements.[3] Infants and young children may have bloody diarrhea without a fever.[4]

In this case, the initial symptoms of decreased appetite and blood in stool without fever or diarrhea raised the possibility of food protein-induced proctocolitis or viral gastroenteritis. Food protein-induced proctocolitis is a common condition in infants, characterized by bloody stools without systemic symptoms. Viral gastroenteritis can also present with similar symptoms, although fever is often observed. The subsequent development of fever and watery diarrhea prompted further investigation, leading to the diagnosis of *C. jejuni* infection.

Campylobacteriosis is primarily acquired through contaminated food or water sources, but direct person-to-person transmission can also occur. The infection can lead to various complications, including dehydration, electrolyte imbalances, and bacteremia.

If antibiotic treatment is indicated, a macrolide is the drug of choice for *C. jejuni* infections. The American Academy of Pediatrics recommends a treatment course of 5-7 days with a macrolide such as erythromycin or azithromycin.[4]

Complications caused by *Campylobacter* gastroenteritis are rare, although early-onset and late-onset complications have been described. Early-onset complications include septic arthritis, bursitis, osteitis, soft tissue infections, erythema nodosum, glomerulonephritis, haemolytic anaemia, IgA nephropathy, post-infectious irritable bowel syndrome, and intestinal perforation. *Campylobacter* is also the most identified cause of Guillain-Barré syndrome and can cause reactive arthritis as a late-onset complication.[5] Prompt diagnosis and appropriate antibiotic therapy are crucial for optimal management and prevention of complications.

CONCLUSION

This case report describes an unusual presentation of *Campylobacter diarrhea* in a 12-week-old infant, initially presenting with decreased appetite and blood in stool, without fever or diarrhea. The subsequent development of fever and watery diarrhea prompted further investigations, leading to the diagnosis of *C. jejuni* infection. This case emphasizes the importance of considering atypical presentations of *Campylobacter* infection in young infants, enabling timely diagnosis and appropriate management. Education regarding proper hand hygiene, safe food preparation and consumption, and avoiding cross-contamination should be emphasized to caregivers.

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