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## Correspondence

# Concurrent *Campylobacter jejuni* bacteremia and intussusception in an immunocompetent five-year-old child



### KEYWORDS

Bacterial enteritis;  
Intussusception;  
*Campylobacter jejuni*;  
Bacteremia

**Abstract** Bacterial enteritis has been reported to be a risk factor for childhood intussusception. However, no case report concerning children with concurrent *Campylobacter* bacteremia and intussusception were found in the literature.

Herein, we report a 5-year-old male preschool child who presented symptoms of infectious diarrhea, and ileocecal type intussusception and *Campylobacter jejuni* bacteremia were found after a series of investigations.

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Dear Editor,

*Campylobacter* spp. is a food- and water-borne bacteria that usually causes diarrhea in humans and animals,<sup>1</sup> and *Campylobacter*-related bacteremia has been reported in approximately 0.1%–1% of patients with early acute infection.<sup>2</sup> Most of these patients were asymptomatic. Symptomatic cases typically present with fever, headache, malaise, and abdominal pain; the abdominal pain may mimic pain caused by appendicitis, colitis, or intussusception.<sup>3</sup>

We report the case of a previously healthy 5-year-old boy who presented at the emergency department with a history of fever, abdominal pain, and diarrhea since two days. Physical examination revealed hyperactive bowel sounds and epigastric tenderness; however, no mass lesion was palpated.

Abdominal radiograph showed increased bowel gas in the abdomen and pelvis; however, a paucity of air in the right lower quadrant of the abdomen was noted (Fig. 1A). Owing to the suggestive radiological findings, abdominal sonography was performed to rule out intussusception. Sonography showed “doughnut (target)” and

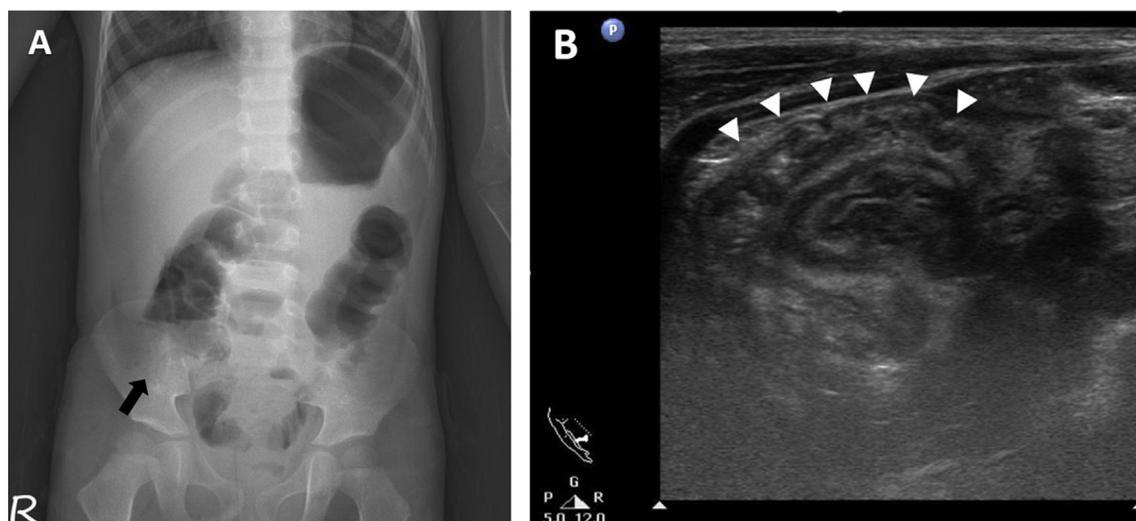
“pseudokidney” signs in the right lower quadrant along with several enlarged mesenteric lymph nodes (size: <1.5 cm) in the vicinity (Fig. 1B); therefore, ileocecal-type intussusception was highly suspected. The patient was administered adequate sedative agents, and he was prepared for a warm saline hydrostatic reduction. After reduction, the abdominal ultrasound showed partial resolution of the target lesion (residual segment, <3 cm).

Blood culture; hemogram; and C-reactive protein, liver, and renal function tests were performed for further evaluation. The boy was admitted for further observation due to partial reduction of intussusception.

After admission, he received supportive care, and under close surveillance of clinical symptoms and signs of intussusception. The fever gradually abated, and his appetite improved. He passed a loose stool on one occasion. Stool analysis showed 1–3 white blood cells under a high power field, whereas no red blood cells were noted; the occult blood test was equivocal, and stool culture was not collected then. Follow-up sonography for intussusception showed no evidence of the target lesion in the abdomen; therefore, he was discharged with a stable condition on day 2 after admission. His general condition was found to be

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**Fig. 1.** A plain abdominal film in standing position. (black arrow ->paucity of air in the right lower quadrant of the abdomen). B. An abdominal ultrasound showed “doughnut (target)” and “pseudokidney” signs in the right lower quadrant. (white triangle ->several enlarged mesenteric lymph node, size: <1.5 cm).

good on follow-up at our outpatient department three days after discharge.

However, we were informed that blood culture showed a growth of *Campylobacter jejuni* 10 days after inoculation; a sensitivity test revealed susceptibility to erythromycin and azithromycin.

The patient was immediately called back to our outpatient department to collect his stool for bacterial culture. The stool specimen also yielded *Campylobacter jejuni*, which showed the same antibiogram as that of his blood culture. Therefore, concurrent bacterial enteritis and intussusception were happened to this patient, complicated with *Campylobacter jejuni* bacteremia.

Several reports have highlighted the potential relationship between bacterial or viral infection-related acute gastroenteritis and intussusception in pediatric patients.<sup>4,5</sup> Rotavirus vaccination may also be a risk factor for intussusception in young infants. The etiology of intussusception in patients with acute enteritis is believed to involve mesenteric lymphadenopathy, which provides the anatomical leading points to bring about intussusception.

The patient presented almost a co-occurrence of symptoms of bacterial enteritis and intussusception. The findings are consistent with the results of a study by Nylund et al. (2010)<sup>4</sup>, which showed a significantly higher risk for intussusception during the first 30 days after bacterial enteritis.

Patients infected with *Campylobacter jejuni* usually shed the organism in stools for weeks, whereas some patients may shed for months. Our patient had a positive stool culture about one month after the onset of diarrhea, conveyed the organism still colonized in his gastrointestinal tract.

In a nation-wide study in Finland by Benjamin et al. (2011)<sup>3</sup>, patients with diagnoses of *Campylobacter jejuni* or *Campylobacter coli* bacteremia often experienced self-limiting disease, and the prognosis of the disease was

typically good, regardless of appropriate antibiotic therapy, which was in accord with our patient.

We put emphasis on a timely abdominal ultrasound is useful to make a diagnosis of intussusception, which may occur following *Campylobacter* infection and may be fatal in the event of delayed diagnosis and management.

### Conflicts of interest

The contributing authors all declare no conflicts of interest.

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jmii.2018.09.004>.

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