

Endoscopic Clipping for a Hemorrhagic Ileal Ulcer Caused by *Campylobacter* Enterocolitis

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A 35-year-old man was admitted with nausea and hematochezia for two days. He had a medical history of ileocecal resection for intussusception of unspecified etiology in his youth. There were no pre-existing conditions or post-surgery complications. He mentioned that he had diarrhea after eating chicken one month prior. Physical examination showed a blood pressure of 106/74 mmHg and a heart rate of 97/m. The abdomen was nontender with increased bowel sounds. Laboratory examination showed a hemoglobin level of 10.4 g/dL. Although the contrast abdominal CT scan showed no evidence of active bleeding with extravasation, an emergency colonoscopy was performed, which revealed a 20 mm sized ulcer in the terminal ileum proximal to the anastomosis, with an exposed vessel regarded as a stigmata of recent hemorrhage (Fig. 1A). Hemostatic clipping was successfully achieved (Fig. 1B). The intraluminal fluid culture yielded *Campylobacter jejuni*. After azithromycin was administered, he was discharged uneventfully. A follow-up colonoscopy four weeks later confirmed the improvement of the *Campylobacter*-induced ulcer with scar formation (Fig. 1C). He is scheduled to have an annual follow-up colonoscopy.

Although it is well known that *Campylobacter* is a major enteropathogen worldwide and causes diarrhea, fever, and bloody stool,¹ massive intestinal hemorrhage is extremely rare.^{1,2} *Campylobacter* has numerous virulence

mechanisms including adhesins, invasion antigens, and proteases,³ which damage intestinal tissue, resulting in ulceration and severe enterocolitis. Although most *Campylobacter* enterocolitis cases last less than one week, approximately 20% of patients present prolonged carriage of the organism for 2 to 10 weeks,¹ as shown in this case. As transmission occurs most commonly by eating undercooked chicken and exposure to sick pet dogs,¹ long-term management for preventing recurrent infection is required for patients.

Endoscopic treatments have been reported for gastrointestinal hemorrhage caused by various pathogens which frequently cause deep ulceration. Epinephrine injection, argon plasma coagulation, and hemoclip placement have been achieved for amoebic and typhoid hemorrhagic ulcers.^{4,5} Hemoclip placement has the apparent advantage of mechanically grasping a bleeding vessel to achieve effective hemostasis without causing chemical or thermal ulceration or perforation in the relatively thin-walled intestinal tract. To the best of our knowledge, this is the first case report of successful endoscopic clipping for hemorrhagic ulcer in *Campylobacter* enterocolitis.

The ileocecal area and terminal ileum are affected by various diseases because of the presence of abundant immune apparatus, such as Peyer's patches, including infection, inflammatory bowel diseases, tuberculosis, and

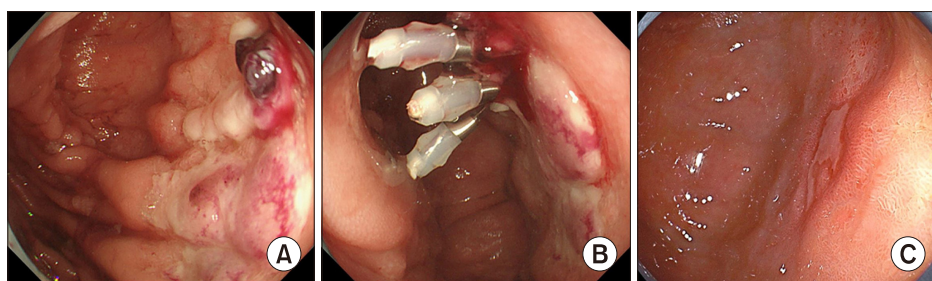


FIG. 1. (A) Colonoscopy revealed an ulcer with an exposed vessel in the terminal ileum. (B) Hemoclippings were successfully achieved at the vessel. (C) Follow-up colonoscopy revealed the improvement of the ulcer with scar formation.

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Bechet's disease. The characteristics of these endoscopic images are important for differential diagnosis, moreover, a careful history taking of the patients is extremely helpful. *Campylobacter* enterocolitis should be included as a differential diagnosis for patients with lower gastrointestinal bleeding.

CONFLICT OF INTEREST STATEMENT

None declared.

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