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CASE REPORT | ENDOSCOPY

Colonic Diverticulitis After Endoscopic Band Ligation Performed for Colonic Diverticular Hemorrhage

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Abstract

A 72-year-old woman presented with massive hematochezia. Colonoscopy revealed active bleeding from a diverticulum in the ascending colon, diagnosed as colonic diverticular hemorrhage. Endoscopic band ligation (EBL) was performed for the hemostasis. The patient developed abdominal pain in the right lower quadrant 1 day after EBL. Computed tomography (CT) demonstrated dirty fat around the ascending colon and thickened peritoneum without perforation or abscess formation, consistent with uncomplicated diverticulitis. The patient was discharged with intravenous antibiotic therapy 5 days after EBL. Attention should be given to the occurrence of colonic diverticulitis after EBL for colonic diverticular hemorrhage.

Introduction

Colonic diverticular hemorrhage is the most common cause of lower gastrointestinal bleeding; it has an increasing incidence because of the increased use of anti-platelet agents and non-steroidal anti-inflammatory drugs (NSAIDs).[1,2] Recently, endoscopic band ligation (EBL) has been used for the treatment of colonic diverticular hemorrhage because the rate of successful hemostasis is high and colonic diverticula can resolve after EBL.[3-5] To date, complications arising from EBL have not been reported.

Case Report

A 72-year-old woman with a history of ischemic heart disease and regular aspirin consumption presented with massive hematochezia. She was febrile with a white blood cell count on admission of 4,100/μL. Enhanced computed tomography (CT) demonstrated extravasation in the ascending colon (Figure 1). Colonoscopy after bowel purge revealed active bleeding from a diverticulum located in the ascending colon (Figure 2). The bleeding diverticulum was marked with a hemoclip, and the colonoscope was removed then reinserted with a band-ligator device (MD-48710 EVL Device, Sumitomo Bakelite Co. Ltd., Tokyo, Japan; Figure 2). The colonic diverticulum was suctioned into a cup, and the elastic O-band was released. The diverticulum was everted and banded after EBL (Figure 2), allowing successful hemostasis.

The next day, she developed right lower quadrant abdominal pain and her body temperature increased to 38.1°C. Her white blood cell count was 7,400/μL and C-reactive protein level was 0.64 mg/dL. Abdominal CT showed dirty fat around the ascending colon and thickened peritoneum with no perforation nor abscess formation (Figure 3), consistent with uncomplicated diverticulitis arising from EBL. Conservative therapy with intravenous antibiotic (cefmetazole sodium 1 g every 8 h) was started. The patient was discharged 5 days after EBL; no other complications or re-bleeding were observed during a 2-month follow-up period.

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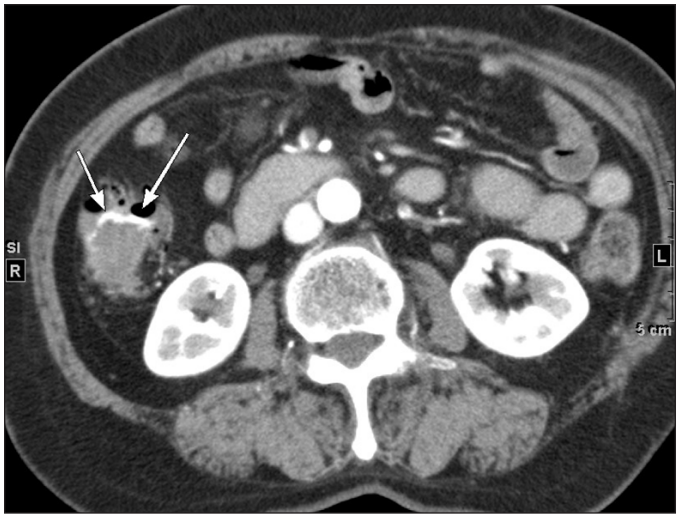

Figure 1. Enhanced CT demonstrated extravasation in the ascending colon.

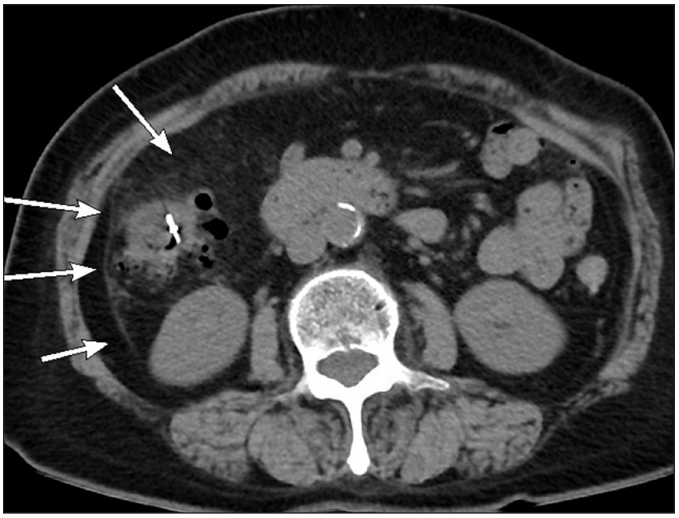

Figure 3. CT revealed dirty fat around the ascending colon and thickened peritoneum without perforation or abscess formation. The marking hemoclip can be observed in the ascending colon.

Discussion

Several endoscopic treatments such as epinephrine injection, contact thermal therapy, endoscopic clipping, and EBL have been used for hemostasis of colonic diverticular hemorrhage.[3-8] Contact thermal therapy and/or epinephrine injection may run the risk of perforation or penetration because the wall of the colon is thin and most colonic diverticula lack a muscular layer.[9] Direct placement of hemoclips to the bleeding point at a diverticulum is difficult; in many cases, indirect placement of hemoclips to close the orifice of the bleeding diverticula is needed.[7,8] However, indirect placement cannot completely occlude the vasa recta at the diverticulum. Rebleeding sometimes occurs after endoscopic clipping; therefore, other interventions such as transarterial embolization or colectomy would be needed.[8]

Although completion of EBL is time-consuming because of the need for reinsertion of the colonoscope, EBL can stop bleeding completely regardless of the bleeding point location (dome or neck of the diverticulum). EBL is a safe and effective endoscopic treatment for colonic diverticular hemorrhage.[3-5] To date, complications arising from EBL such as perforation or penetration have not been reported. This may be because the ligated diverticulum, which contains a submucosal layer and/or muscularis propria, is gradually replaced by granulation tissue.[3,4,10]

However, uncomplicated diverticulitis occurred in our case. Although the CT 1 day post-EBL did not demonstrate perforation, we cannot rule out the possibility of microperforation due to marked degree of aspiration during EBL procedure or necrosis of the banded tissue. Carbon dioxide has been routinely used during the procedures and microbubbles could be quickly absorbed if microperforation occurred. Nonetheless, this complication is managed conservatively without surgery; replacement by granulation tissue may gradually proceed along with improvement of the inflammation. Although EBL is considered a safe and effective endoscopic treatment for colonic diverticular hemorrhage, attention should be given to the possibility of colonic diverticulitis as a post-procedural complication.

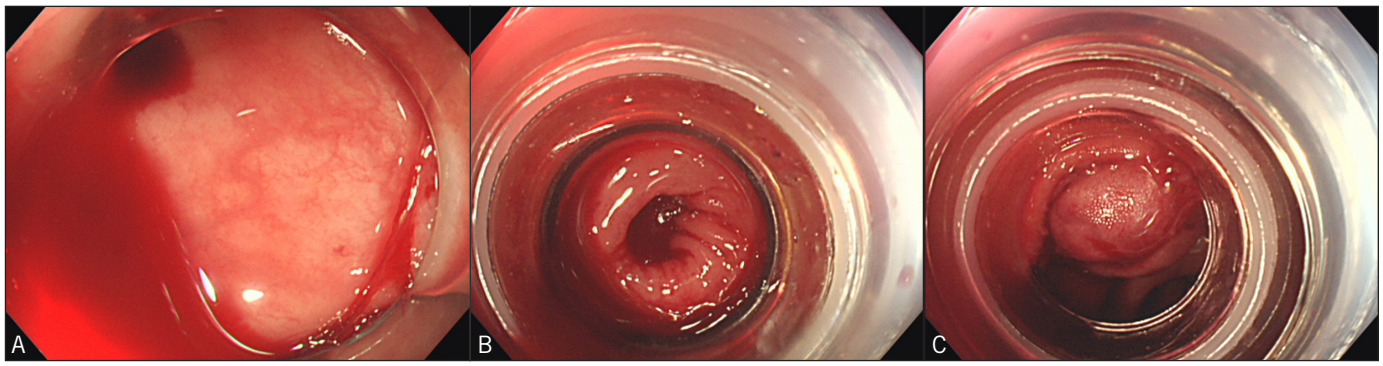

Figure 2. (A) Endoscopic view of active bleeding from a diverticulum in the ascending colon. (B) The targeted diverticulum observed through the reinserted colonoscope with attached band-ligator. (C) Endoscopic band ligation (EBL) was completed and the bleeding stopped.

Disclosures

Author contributions: Both authors contributed equally to the creation of this manuscript. N. Ishii is the article guarantor.

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