Advances in Digestive Medicine (2016) 3, 128—131

Available online at www.sciencedirect.com

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journal homepage: www.aidm-online.com

CASE REPORT

Massive post-polypectomy hemorrhage: Successful tulip-bundle technique with endoloop for hemostasis

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Received 30 November 2015; accepted 4 January 2016
Available online 5 March 2016

KEYWORDS
Colonoscopy;
Complication;
Polypectomy;
Hemostasis

Summary Colonoscopic polypectomy is a common procedure for removing colonic polyps to prevent subsequent development of colon cancer. Hemorrhage is the most common complication following polypectomy, with a reported rate of 0.3% to 6.0%. The risk increases to 12.5% when the size of the polyp stalk exceeds 1 cm. The most commonly used endoscopic preventive techniques, such as injection therapy, prophylactic use of endoclip, or endoloop, were found to decrease the rate of post-polypectomy hemorrhage, and repeated use of these techniques is useful for controlling bleeding. Here, we reported a case of a 65-year-old man with refractory post-polypectomy hemorrhage for a 2-cm adenomatous polyp. Application of an endoloop using the tulip-bundle technique achieved successful hemostasis. To our knowledge, this is the first report of this technique being used to treat refractory acute post-polypectomy hemorrhage.

Introduction

Colonoscopic polypectomy is a common colonoscopic procedure for removing colonic polyps to prevent subsequent development of colon cancer. Hemorrhage is the most common complication following polypectomy, with a reported rate of 0.3% to 6.0% [1]. The risk of post-polypectomy hemorrhage is up to 12.5% higher when the size of the polyp stalk

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http://dx.doi.org/10.1016/j.aidm.2016.01.002

exceeds 1 cm [2,3]. The most commonly used endoscopic preventive techniques, such as injection therapy with diluted epinephrine or prophylactic use of endoclip [2—5], were found to decrease the rate of post-polypectomy hemorrhage, and repeated use of these techniques is useful for controlling bleeding. Here, we reported a case of a 65-year-old man with immediate post-polypectomy hemorrhage for a 2-cm adenomatous polyp with a 1-cm-thick stalk, despite the use of prophylactic injection and clipping in another endoscopic clinic. Despite the use of several conventional techniques, including injection therapy and heat-probe coagulation, the bleeding persisted and the patient was transferred to our hospital. A repeated colonoscopy revealed spurting from the polypectomy wound and two prophylactically placed endoclips that remained *in situ*. Application of an endoloop using the tulip-bundle technique achieved successful hemostasis. To our knowledge, this is the first report of this technique being used to treat refractory acute post-polypectomy hemorrhage.

Case Report

A 65-year-old man was referred to our emergency department for surgical intervention of refractory post-polypectomy hemorrhage. The patient had a medical history of hypertension, diabetes, and gout. He was not taking aspirin or other anticoagulant medication. According to the referral sheet, the polyp was 2 cm in diameter with a thick stalk in the descending colon. The referring physician had administered a prophylactic injection of diluted epinephrine into the polyp base, with two prophylactic endoclips placed before the procedure. Massive bleeding developed immediately after the procedure, and the referring physician attempted hemostasis with further injection therapy and heat-probe coagulation; however, it was not successful. The patient went into shock and was transferred to our hospital 2 h after the procedure. At the emergency department, the patient was pale and hypotensive, with a systolic blood pressure of 84 mmHg with tachycardia (heart rate: 110 beats/min). Blood test revealed a drop in hemoglobin from 14.2 g/dL to 8.9 g/dL and a normal coagulation profile. An emergent abdominal computed tomography (CT) scan revealed active contrast extravasation in the descending colon (Figure 1, arrow), and a proctology surgeon was consulted for surgical intervention. After discussion with the patient, the patient requested a second attempt at colonoscopy to control his bleeding, and an emergent colonoscopy was performed. A large amount of fresh bloody content was found between the rectum and the descending colon. After copious irrigation with water and positional change, the bleeder source was identified (Figure 2).

The two endoclips remained *in situ*, and active bleeding was observed in the narrow gap between the two endoclips. This finding explained the ineffective clipping and the difficult endoscopic approach to the bleeder source. An attempt with a heat probe, coagulation forceps, and further clipping all failed to approach the bleeder. We further attempted to administer an injection of diluted epinephrine in the base of the stalk remnant, and the remnant slowly began rising, giving the appearance of a new polyp. An endoloop was successfully placed beneath the two previously placed endoclips using the tulip-bundle technique, and the bleeding was successfully controlled

Figure 1 Abdominal computed tomography span revealed active contrast extravasation from the descending colon (arrow).

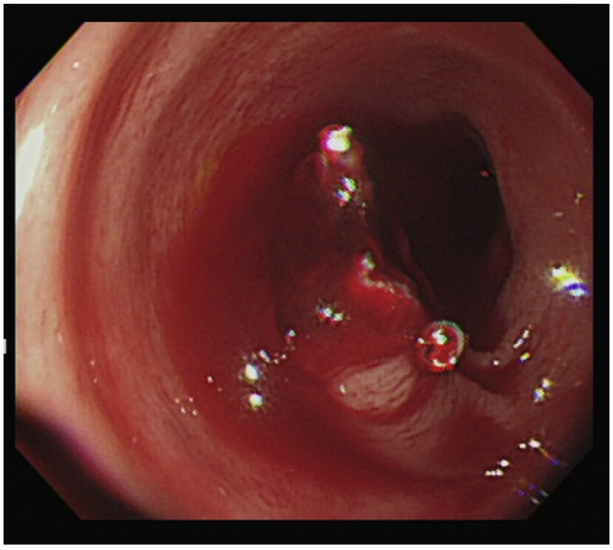

Figure 2 Endoscopic finding of active bleeding from a polypectomy wound. Two endoclips remained in place.