REVIEW ARTICLE

Transparent cap scope tamponade: an inexpensive, efficient, and underappreciated maneuver for bleeding visualization and hemostasis

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Background and Aims: Low-grade bleeding is commonly encountered during endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD), and there are several hemostasis techniques that can be used, each with advantages and disadvantages. One efficient, inexpensive, and underappreciated technique is the use of a distal attachment on the endoscope to provide immediate scope tamponade that quickly stops most low-grade bleeding.

Methods: The use of the distal attachment during endoscopic resection improves scope stability, and when low- to moderate-grade bleeding occurs, it can be used in conjunction with water infusion to quickly allow visualization of the source of the bleed. Subsequently, the tip of the distal attachment can be easily applied to the source of the bleeding, allowing immediate control or allowing time to retrieve a more definitive hemostatic device.

Results: Four cases are presented demonstrating the valuable uses of the transparent distal cap attachment during EMR of a variety of colonic lesions.

Conclusions: Using the distal attachment cap to provide scope tamponade is an effective, inexpensive, and underappreciated strategy to achieve hemostasis in low- to moderate-grade intraprocedural bleeding. (VideoGIE 2025;10:333-5.)

BACKGROUND

Low- to moderate-grade bleeding commonly occurs as a result of therapeutic endoscopic interventions such as endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD). Much has been published on endoscopic hemostasis technique, and guidelines exist for these approaches including injection therapy, bipolar and unipolar thermal coagulation, over and through-the-scope endoscopic clips, endoscopic band ligation, spray therapy, and even metal stent placement.[1-6] One such guideline recognizes the distal cap attachment for its usefulness in endoscope stabilization[7]; however, the simple use of endoscopic tamponade with the distal attachment cap as a first step or primary hemostatic measure appears to be underappreciated. The use of tamponade to control bleeding is a common and well-accepted technique for surgical or traumatic bleeding, and this video demonstrates how a standard clear distal cap attachment on the endoscope provides immediate and effective pressure for low- to moderate-grade bleeding until the injured vessel stabilizes or allows time for a more definitive hemostasis device to be introduced.

Abbreviations: EMR, endoscopic mucosal resection; ESD, endoscopic submucosal dissection; NICE, NBI International Colorectal Endoscopic Classification.

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GENERAL TECHNIQUE

Setup

The distal cap attachment is produced by multiple manufacturers in a variety of sizes. Before use, ensure that the cap sufficiently fits the endoscope planned for the procedure. In some cases, the cap may be slightly loose if the cap

diameter is too wide for the endoscope tip. In such scenarios, if no other cap size is available for proper fitting, our experience is to simply apply tape to the exterior of the cap to ensure its attachment before use. When placing the cap on the endoscope, there are a few considerations to ensure optimal placement positioning. First, several caps have a small hole, or internal drainage, which is designed to allow for a clear endoscopic view without fluid retention, and thus should be placed at the scope 6-o'clock position to facilitate drainage of fluid from the cap.[8] It is important to avoid aligning the internal drainage hole with the working channel of the endoscope, because if this occurs, instruments that are being introduced through the endoscope can get caught on the drainage hole. Lastly, the rim of the cap should extend 3 to 4 mm off the endoscope and is not intended to provide a long chamber, such as a distal attachment for endoscopic variceal band ligation or use of over-the-scope clips.

Endoscopic technique

The distal cap attachment should be used to advance the endoscope toward the site suspected of bleeding, and light pressure can be applied to the bleeding vessel or area to provide a tamponade effect. In addition, concurrent water flushing can significantly improve visualization of the precise source of the bleeding vessel as well as provide additional tamponade. Scope tamponade itself may be enough to achieve hemostasis or provide initial hemostasis while additional therapies or interventions are prepared and used as demonstrated in our subsequent cases.

CASES

Case 1

A 70-year-old woman is undergoing EMR of a 5 × 4-cm Paris IIa, NICE I and II rectal mass lesion. The mass is lifted with targeted submucosal injections with a lifting solution of diluted epinephrine (1:500,000) in saline solution and resected in sections using an electrocautery snare (Captivator I; Boston Scientific, Marlborough, Mass, USA). During resection, multiple bleeds occur and the distal cap attachment is used to quickly apply direct pressure on the bleeding sites, allowing the procedure to continue uninterrupted. In addition to applying direct pressure with the distal cap, water flushing on the identified bleeding site is used, which provides improved visualization and a greater hemostatic effect. In this case, scope tamponade is all that is needed to achieve hemostasis.

Case 2

A 55-year-old man presented for EMR of a 5-cm Paris Is, NICE II cecal mass lesion that involves the appendiceal orifice. EMR is begun and after injection and lifting of the lesion, bleeding immediately begins on initial resection,

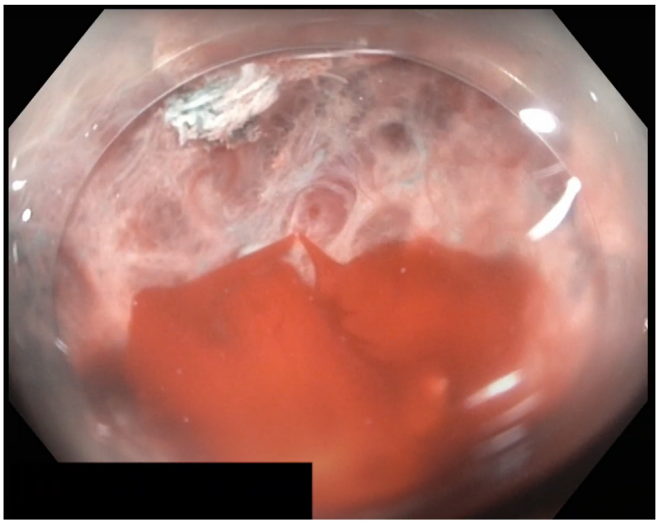

Figure 1. Direct pressure applied by the distal transparent cap with concurrent water flushing allowing for identification of the exact site of a bleeding vessel and allowing water tamponade.

and a through-the-scope clip (Instinct Plus Clipping Device; Cook Medical, Bloomington, Ind, USA) is deployed at the identified bleeding vessel. Despite successful clip placement, diffuse bleeding from the EMR site recurs, and thus the scope tamponade technique is used with a subsequent decrease in the rate of bleeding from the resection base allowing time for the team to prepare additional modalities of achieving hemostasis. Snare tip soft coagulation using the electrocautery snare is used in this case to ablate several bleeding sites followed by hemostatic spray (Hemospray; Cook Medical) is applied to the entire resection site because of continued low-grade bleeding.

Case 3

An 83-year-old woman presented for EMR of a 5 × 3-cm Paris Is, NICE II mass lesion in the distal ascending colon. The mass is lifted and the polypoid lesion is resected in sections using an electrocautery snare. Intraprocedural bleeding is encountered, and the endoscopist uses the distal cap to apply direct pressure on the suspected source of bleeding. Continuous water flushing provides additional tamponade effect as well as helps identify the culprit vessel (Fig. 1). Snare tip soft coagulation is applied to the bleeding vessel, followed by the use of hemostatic grasping forceps (Coagrasper Hemostatic Forceps; Olympus, Tokyo, Japan) to obliterate the vessel.

Case 4

An 82-year-old woman presented for EMR of a Paris Is, NICE II mass lesion in the distal rectum and anal canal. The lesion is lifted away with several targeted submucosal injections, and the electrocautery snare is used to resect the lesion in sections down to the submucosa and

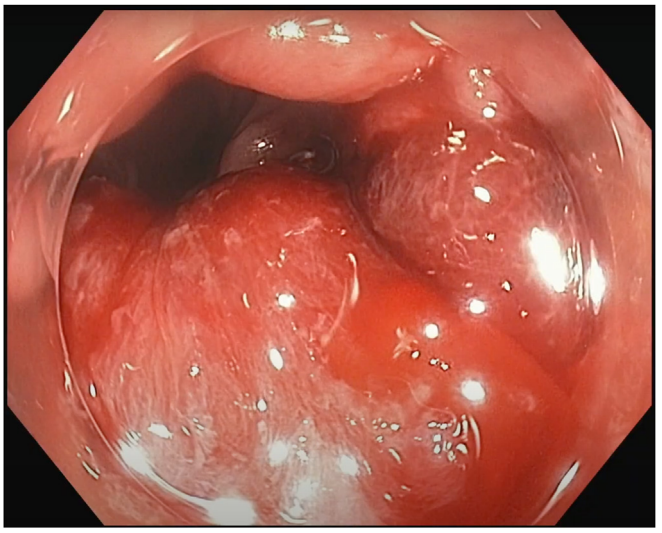

Figure 2. Marked bleeding encountered from hemorrhoidal vein after resection of rectal lesion that extended into the anal canal. The distal cap is used to provide excellent visualization and initial hemostasis via scope tamponade.

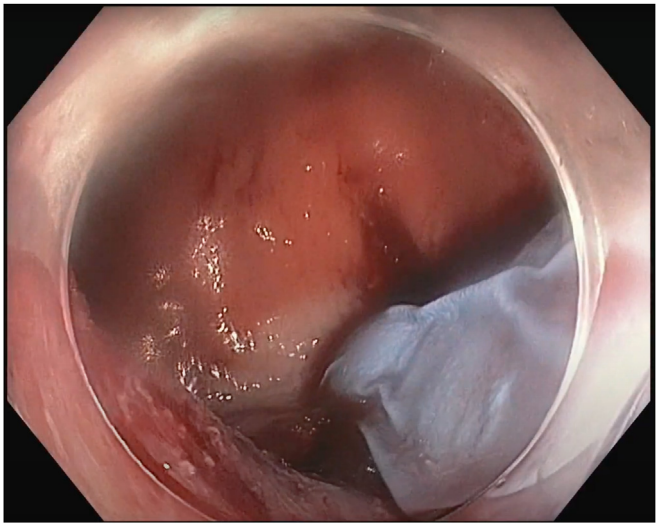

Figure 3. Endoscopist's finger guided to the bleeding site allowing more definitive pressure hemostasis after identification of the bleeding vessel using the distal cap attachment.

muscularis propria. After resection, marked bleeding from a hemorrhoidal vein occurs (Fig. 2), and the distal cap attachment is used to isolate the site of injury and provide initial hemostasis with direct pressure with concurrent water flushing. In this case, scope tamponade is insufficient in providing complete hemostatic control, and thus the endoscope is used to guide the endoscopist's index finger to apply more significant and prolonged direct pressure and hemostasis to the bleeding hemorrhoidal vein (Fig. 3). Given the complexity of the case in addition to ongoing minor diffuse bleeding from the resection site, hemostatic powder (Hemospray; Cook Medical) is also applied.

DISCUSSION

Applying pressure with a standard clear distal endoscope attachment, as demonstrated here, is a simple, inexpensive, effective, and underused technique in achieving initial hemostasis during intraprocedural bleeding. As demonstrated in these cases, the scope tamponade technique is helpful in providing primary hemostasis, identifying the bleeding vessel with concurrent water flushing and providing the endoscopist initial stabilization and time to prepare and apply additional therapies to achieve complete hemostasis. The distal cap attachment also has the added benefit of assisting with visualization and stabilization of the endoscope where acute angles or tissue redundancy would have otherwise precluded good visualization needed for a safe and complete resection. Although the cases demonstrated in this case series are examples of how this technique is used in the setting of EMR, this technique can be used effectively in a variety of endoscopic procedures in which bleeding is encountered.

PATIENT CONSENT

Informed patient consent was obtained prior to publication of this article.

DISCLOSURES

The authors have no conflicts of interest to disclose.

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