



Endoscopic resection of large pedunculated colon polyps using only a scissor-type knife: a case series

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Background and Aims: All pedunculated colon polyps (PCPs) should ideally be resected en bloc for accurate histopathological evaluation. However, maneuvering a snare around the large head of a pedunculated polyp with a long, wide stalk can be technically challenging. In addition, clinically significant bleeding after snare polypectomy remains a legitimate concern. Small case series from Asia have supported the feasibility of endoscopic submucosal dissection (ESD) for the removal of these challenging large PCPs. However, ESD is not widely performed in the West because of its technical complexity, steep learning curve, and higher risk of adverse events when compared with conventional endoscopic mucosal resection. Our aim was to demonstrate the feasibility of performing en bloc resection of large PCPs using a scissor-type electrocautery ESD knife when conventional snare polypectomy is not feasible.

Methods: Two patients were found to have large PCPs with wide stalks. Attempts to maneuver a snare around the head of the PCP were unsuccessful, and the decision was to proceed with ESD using the scissor-type knife

Results: Both polyps were successfully resected en bloc using only the scissor-type knife. Both procedures were completed in under 20 minutes with no adverse events. Histopathology results of both polyps were consistent with tubulovillous adenoma with resection margins free of dysplasia, consistent with curative R0 resection.

Conclusion: En bloc resection of large PCPs can be challenging when it is difficult to maneuver the snare around the head of the polyp. In this video, we demonstrate how a dedicated scissor-type ESD knife can facilitate the resection of these lesions. The insulated rotatable blades of the scissor-type knife allow safe and precise dissection of the stalk under direct visualization, which further permits targeted hemostasis when needed. Future studies are needed to corroborate the efficacy and safety of this device for the resection of selected colorectal lesions. (VideoGIE 2020;5:264-6.)

En bloc resection of colorectal polyps helps minimize the risk of recurrence¹ and ensures accurate histopathological assessment for colorectal lesions.^{2,3} However en bloc removal of certain large pedunculated colon polyps (PCPs) can be technically challenging with conventional snare polypectomy and carries a well-recognized risk of clinically significant bleeding.⁴ Various methods have been recommended to minimize the risk of bleeding in this scenario, including the use of a loop ligating device before resection.⁵ However, the optimal strategy for en bloc resection of large PCPs remains in question. Asian studies have demonstrated the feasibility of endoscopic submucosal dissection (ESD) with standard ESD knives as a means to perform en bloc resection of large PCPs while maintaining hemostasis.⁶ Currently, adoption of colorectal ESD in the West has been limited by its steep learning curve and potential higher risk of adverse events.

The scissor-type knife (Clutch Cutter, Fujifilm, Tokyo, Japan) is a Food and Drug Administration–approved

rotatable serrated grasping forceps that allows cutting and coagulation of tissue with its conductive inner grasping portion (Fig. 1). The outer blades of the scissor are insulated, which minimizes inadvertent thermal injury to surrounding tissue.⁷ In this video, we demonstrate the safe and successful en bloc resection of 2 large PCPs using the scissor-type knife (jaw length of 3.5 mm) (Video 1, available online at www.VideoGIE.org).

PATIENTS AND METHODS

Patient 1

A 77-year-old man was found to have a large PCP (25 mm diameter of the head and 10 mm width of the stalk) in the sigmoid colon (Fig. 2). We attempted to place the loop ligating device (Polyloop; Olympus America, Inc, San Jose, Calif, USA) around the stalk for bleeding prophylaxis but were unsuccessful because of the limited space for maneuverability. As such, we decided to proceed with ESD using the scissor-type knife.

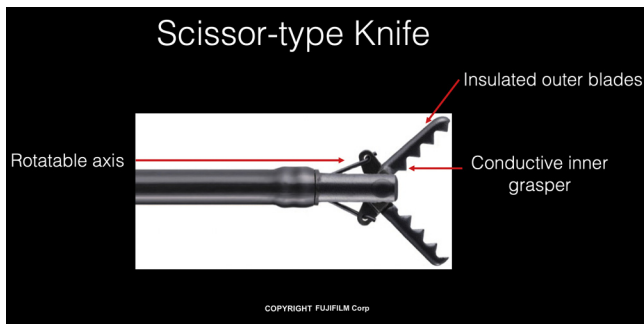


Figure 1. The scissor-type knife is a rotatable serrated grasping forceps that allows cutting and coagulation of tissue with its conductive inner grasping portion. The outer blades of the scissor are insulated, which minimizes inadvertent thermal injury to surrounding tissue. (Used with the permission of FUJIFILM Medical Systems U.S.A., Inc.)

Saline solution with methylene blue was injected into the bottom of the stalk using an injection needle (Needle Master; Olympus, Center Valley, Pa, USA). Although routine submucosal injection is not necessary, we elected to do so to create a submucosal cushion that would facilitate visualization during endoscopic dissection, particularly during the identification of any submucosal vessels. After submucosal injection was completed, sequential dissection of the stalk was performed using the scissor-type knife (Endocut Q mode [effect 2, duration 3, interval 1]; VIO 300D; ERBE, Tübingen, Germany). Procedural bleeding during ESD was easily managed using the same scissor-knife in soft coagulation mode (Soft coag mode [80 W, effect 4]; VIO 300D; ERBE).

Patient 2

A 69-year-old man was found to have a large 32-mm PCP that occupied nearly the entire lumen in the sigmoid colon

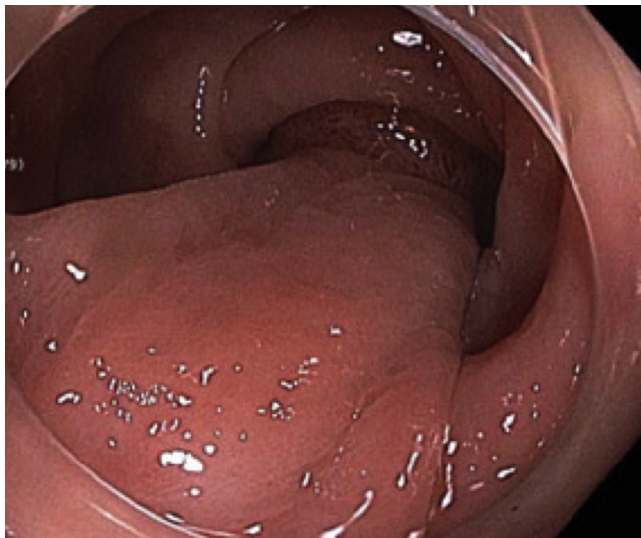


Figure 2. Large pedunculated polyp in the sigmoid colon in Patient 1.

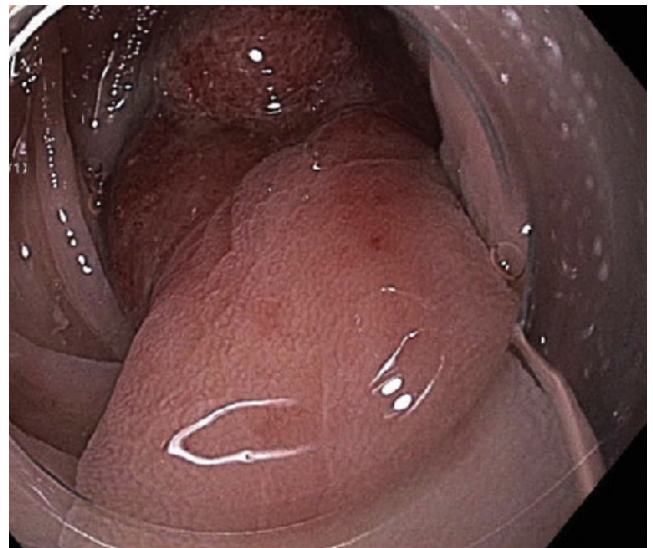


Figure 3. Large nearly obstructing polyp in the sigmoid colon in Patient 2.

on routine colonoscopy (Fig. 3). Based on the size of the head of the polyp and its long stalk, we did not believe the open 20-mm snare or a loop ligating device would easily fit around the polyp, and thus we decided to use the scissor-type knife.

Saline solution with methylene blue was injected into the bottom of the stalk using the injection needle. Sequential dissection of the stalk then was performed using the scissor-type knife. No bleeding occurred during the dissection, but visible vessels were pre-emptively treated with the scissor-type knife in soft coagulation mode.

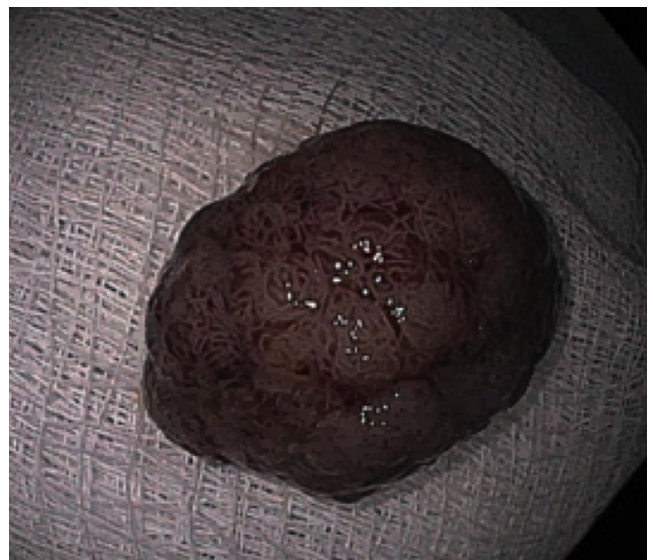


Figure 4. Successful en bloc resection of both polyps with preserved healthy stalk margin.



Figure 5. Successful en bloc resection of both polyps with preserved healthy stalk margin.

RESULTS

Both polyps were successfully resected en bloc with ≥ 5 -mm healthy stalk margin on specimen inspection (Figs. 4 and 5). Dissection of the stalk under direct visualization during the procedure allowed the identification and coagulation of visible vessels using the same scissor-type knife, thereby maintaining adequate hemostasis during the entire procedure. Both procedures were completed in under 20 minutes and with no adverse events. Histopathology results of both polyps were consistent with tubulovillous adenoma with resection margins free of dysplasia, consistent with a curative R0 resection.

DISCUSSION

En bloc resection of large PCPs can be challenging when it is difficult to maneuver the snare around the head of the polyp. In this video, we demonstrated how a dedicated scissor-type ESD knife can facilitate the resection of these selected lesions. The insulated rotatable blades of the scissor-type knife allow safe and precise dissection of the stalk under direct visualization, which further permits targeted hemostasis when needed and circumventing the need to place a loop ligating device.⁸

Our video adds to the growing literature regarding the use of scissor-type knives in successfully removing large PCPs en bloc. Yamamoto and Shafazand⁹ previously described successful ESD of pedunculated polyps with wide stalks using a different scissor-type knife (SB Jr;

Sumitomo Bakelite, Tokyo, Japan). Unlike in the study by Yamamoto and Shafazand,⁹ the thicker and fully serrated jaws of the scissor-type knife used in our video may potentially provide more-effective hemostasis of large submucosal vessels. Future studies are needed to corroborate the efficacy and safety of this device for the resection of selected colorectal lesions.

DISCLOSURES

Dr Draganov is a consultant for Boston Scientific and Olympus. Dr Yang is a consultant for Boston Scientific, US Endoscopy, and Lumendi. All other authors disclosed no financial relationships.

Abbreviations: ESD, endoscopic submucosal dissection; PCP, pedunculated colon polyps.

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