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Case-based Management of Colon Polypectomy in Patients Taking Antithrombotic Medications



Richard S. Kwon, MD, MS
University of Michigan

MODERATOR



Thomas J. Savides, MD, FASGE
University of California, San Diego

EXPERT

Introduction

The use of antithrombotic agents (e.g., aspirin, non-steroidal anti-inflammatory drugs, thienopyridines, warfarin, etc.) to prevent thrombotic events has significantly increased with the expanding elderly population and use of drug-eluting coronary stents. This raises the complexity of care in these patients who are now at increased risk of bleeding during and after common endoscopic procedures. In this issue of *ASGE Leading Edge*, an actual case of post-polypectomy bleeding after screening colonoscopy encountered in a patient using antithrombotic agents is discussed. For this case, Richard Kwon, MD will unveil the case to our discussant one section at a time. Thomas Savides MD, FASGE will then offer detailed comments about each individual section before the next part is revealed.



MODERATOR

Richard S. Kwon, MD, MS
University of Michigan

Case Presentation

A 61-year-old male presents to the office for consultation regarding colorectal cancer screening. He has no gastrointestinal symptoms, and he has never had a colonoscopy. His mother had colon cancer in her 60s.

Relevant past medical history includes coronary artery disease (with a myocardial infarction ten months ago followed by a three-vessel coronary artery bypass graft nine months ago), a small pulmonary embolus two years ago, peripheral vascular disease (bilateral iliac stents five years ago and left-to-right femoral-femoral bypass six months earlier following repeated vascular thrombosis which developed while off of clopidogrel), and a transient, ischemic attack ten years ago.

His relevant current medications include aspirin (81 milligrams), clopidogrel (75 milligrams), fentanyl patch, and pantoprazole.



EXPERT

Thomas J. Savides, MD, FASGE
University of California, San Diego

Break Point

This patient is an appropriate candidate for colon cancer screening based on his age, his family history of colon cancer in his mother, and the fact he never had a screening colonoscopy. Several studies have demonstrated that use of aspirin alone would not put him at increased risk of bleeding after colonoscopy, including polypectomy.¹⁻⁴ There is less data regarding the safety of the use of clopidogrel before colonoscopy. However, studies to date suggest that although clopidogrel by itself may not increase the risk of polypectomy bleeding, the combination of aspirin and clopidogrel is an independent risk factor for post-polypectomy bleeding.³⁻⁶

When approaching patients on antithrombotic medications *prior to* endoscopic procedures, one needs to consider if the patient is at high or low risk for a thromboembolic event if the antithrombotic drug is stopped, and whether the procedure to be performed carries a high or low risk for procedure-related bleeding. Given that he had iliac stent thrombosis after stopping clopidogrel, this patient is considered to be at high risk for a thromboembolic event. A screening colonoscopy would be considered a low-risk procedure, although it may evolve to a high-risk procedure if a polypectomy is required for a polyp greater than 1 cm in diameter.

In contrast to antithrombotic therapy *after* coronary artery stent placement, the optimal recommendations to prevent graft occlusion after peripheral vascular surgery are uncertain. Guidelines published in 2008 by the American College of Chest Physicians Practice recommend continuous aspirin indefinitely after infrainguinal vascular surgery.⁷ However, a recent study suggests that dual antiplatelet therapy (aspirin and clopidogrel) significantly reduces graft occlusion of patients who received prosthetic grafts.⁸

For removal of polyps less than 1 cm in diameter, current ASGE and European Society for Gastrointestinal Endoscopy (ESGE) guidelines recommend to continue aspirin and clopidogrel.^{3,4} If a polypectomy for a polyp greater than 1 cm is to be performed, both societies recommend to stop administering clopidogrel and continue with aspirin.^{3,4} Given that the duration of action of clopidogrel is three to seven days, one would usually prefer to stop the clopidogrel at least seven days prior to the colonoscopy.

In this specific case, I would discuss use of anticoagulants with the patient's vascular surgeon to decide if clopidogrel could be stopped temporarily for this elective procedure. Alternatively, I would ask the surgeon to consider whether clopidogrel could be stopped permanently, and if the colonoscopy could be delayed until the requirement for anticoagulation is complete (i.e., analogous to stopping the clopidogrel in drug-eluting coronary stents after twelve months).

As would be done for any patient concerned about colon cancer screening, I would discuss the risks, benefits and alternatives of all the options for colon cancer screening (e.g., fecal immunohistochemistry tests, CT colonography, and colonoscopy) with emphasis on the risks of bleeding and thromboembolic events. Given his family history of colon cancer, my preference would be to do a colonoscopy in order to both detect and obtain pathologic sampling of any polyps. If the vascular surgeon said the clopidogrel could be stopped, then I would perform the colonoscopy with the patient still on 81 mg of aspirin.

If the vascular surgeon said the dual antiplatelet therapy could never be stopped, then I would discuss the risks of performing the colonoscopy (and any possible therapy) on both clopidogrel and aspirin with the patient. If a small polyp less than 1 cm was found, I would do a polypectomy. However, if a large polyp greater than 1 cm was found, then two options would be considered: 1) I could biopsy the polyp and plan later to discuss potential risks of polypectomy after the pathology had returned or 2) the

polyp could be removed using endoscopic techniques to minimize bleeding (i.e., endoloops or clips) if I felt it could be safely and easily removed and the patient understood the potential risks of bleeding. In either option, I would document my discussion with the patient about the risks, benefits, and alternatives and then proceed as preferred by the patient.



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Richard S. Kwon, MD, MS
University of Michigan

Case Presentation

Vascular surgery is consulted, and the decision is made to continue both the aspirin and clopidogrel. Colonoscopy reveals five polyps including: 10 mm in the cecum, 10 mm near the hepatic flexure, 9 mm in the transverse colon, 15 mm in the sigmoid colon, and 7 mm in the rectum (Image 1A-D). Small, scattered diverticula in the sigmoid colon were also noted.

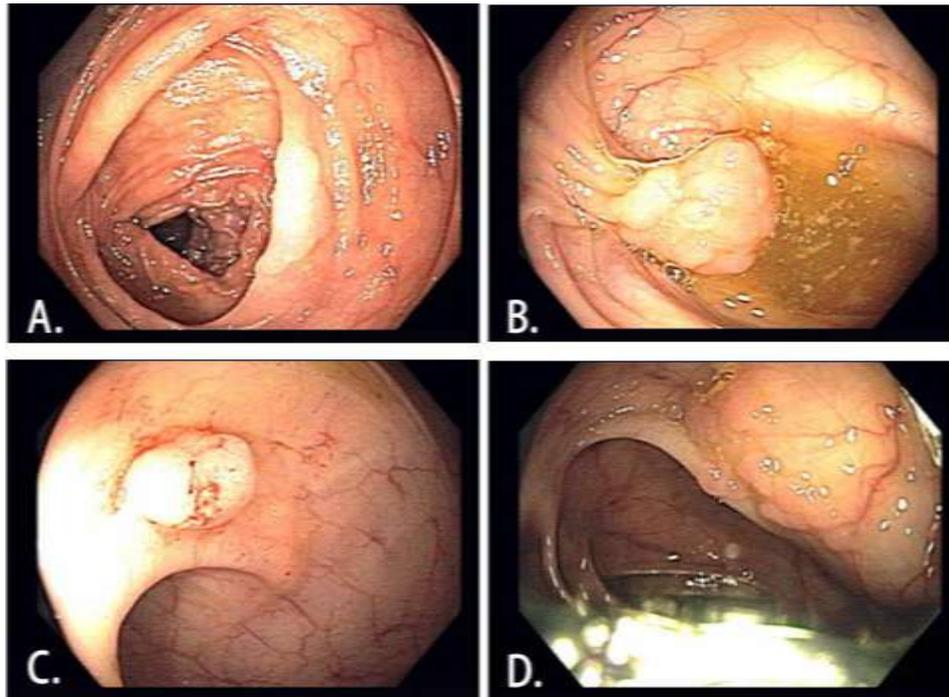


Image 1 (A-D): Endoscopic pictures of four of the five polyps found on colonoscopy



EXPERT

Thomas J. Savides, MD, FASGE
University of California, San Diego

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Current recommendations state that polypectomy can be performed for polyps <1 cm in a patient taking aspirin and clopidogrel who is considered at high risk for vascular thrombosis if dual antiplatelet therapy is stopped.^{3,4} Image 1A shows a 10 mm sessile polyp; which, given its flat nature and to minimize bleeding, I might remove with multiple biopsies only. Image 1B shows a pedunculated polyp. Given the long stalk, I would likely use an endoloop or clips in an effort to reduce the risk of bleeding. Image

1C seems to be a medium-sized polyp that could be removed with snare cautery. Given that it seems broad-based and larger (15 mm), has prominent vasculature and almost appears to be a submucosal lesion, Image 1D is most bothersome to me. I would think twice about removing this polyp now and might just obtain tissue biopsy for histology and defer definitive removal until pathology is revealed. If I decided to remove this polyp, I would likely consider using an endoloop and hemoclips, possibly with submucosal epinephrine injection.

Endoscopic clips alone do not appear to decrease post-polypectomy bleeding in polyps less than 1 cm in diameter, but they may help decrease post-polypectomy bleeding in polyps greater than 1 cm.^{9,10} A prospective, randomized study found that pre-polypectomy submucosal injection with epinephrine followed placement of a detachable snare (endoloop) was associated with significantly less post-polypectomy bleeding compared to epinephrine injection alone.¹¹ Another prospective, randomized study found a reduced rate of re-bleeding with placement of a detachable snare on the polyp stalk followed by polypectomy and clip placement on residual stalk, compared to pre-injection of the polyp with epinephrine followed by snare polypectomy.¹²

Again, I am not sure I would remove all of these polyps, but if I (or someone else) did, again, I would consult the vascular surgeon and hopefully be able to stop at least the clopidogrel for seven to ten days to minimize bleeding risk, realizing that the risk of post-polypectomy bleeding usually occurs in the first week after polypectomy but can occur at any time within the first month after polypectomy.^{13,14}



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Richard S. Kwon, MD, MS
University of Michigan

Case Presentation

The polyps are removed with either saline-lift and hot snare or forceps alone. There is no immediate post-polypectomy bleeding noted during or at the end of the procedure (Image 2). No hemoclips or endoloops are applied before or after polypectomy.

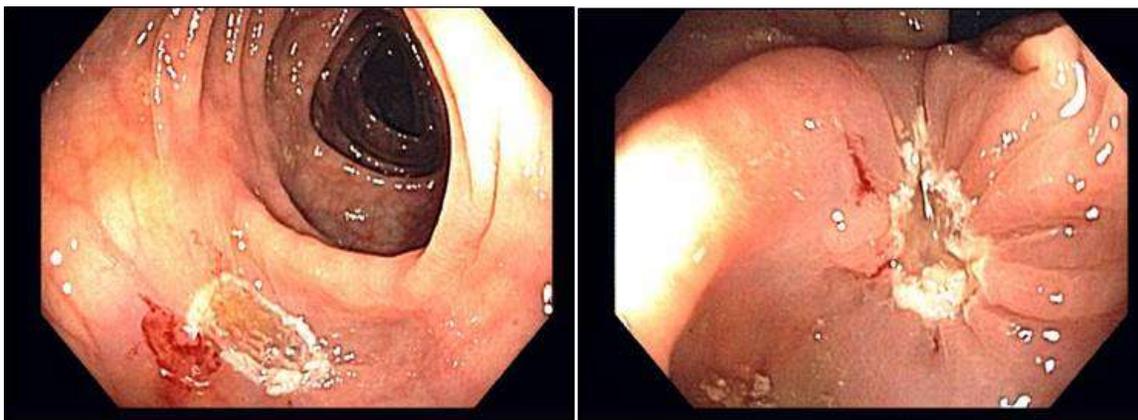


Image 2. Two of the polypectomy sites at the time of colonoscopy

The patient is discharged with instructions to undergo a repeat colonoscopy in one year. He returns to the Emergency Department that evening with five episodes of hematochezia. His initial blood pressure is 58/32 mmHg and normalizes appropriately with intravenous fluids. His hemoglobin on presentation is 9.1 gm/dL (baseline is roughly 8.5 gm/dL). The patient is transferred to the Intensive Care Unit (ICU) where he continues to have hematochezia and his hemoglobin drops to 6.9 gm/dl, despite transfusion of two units of packed red blood cells. His systolic blood pressure generally remains in the range of 150 mmHg but transiently decreases to 80 mmHg.



EXPERT

Thomas J. Savides, MD, FASGE
University of California, San Diego

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Given the moderate mucosal defects in the post-polypectomy sites shown, I would have placed endoscopic clips to close the sites. However, it must be acknowledged that prophylactic clip placement has not been shown to decrease delayed bleeding after colonoscopic polypectomy in low-risk patients with polyps less than 1 cm in diameter.⁹ Nevertheless, because our patient is at high risk for post-polypectomy bleeding, I would want to reduce those chances.

Within hours of polypectomy, the patient developed severe gastrointestinal bleeding with hematochezia, hypotension and decreased hemoglobin — despite transfusion of two units of packed red blood cells. The presumption is that this is a severe post-polypectomy bleed, but given that the patient is on aspirin and clopidogrel, one also must consider the possibility of a severe coincidental upper gastrointestinal bleed due to gastric or duodenal ulceration. The clinical presentation of massive upper GI bleeding and severe lower GI bleeding can be identical.

Initial management of this patient (as is the case for any severe gastrointestinal bleed) requires resuscitation with intravenous fluids and packed red blood cells. To avoid causing any thrombotic events, I would not give platelets at this time. The patient should be admitted to the ICU given his unstable condition and need for emergency endoscopy in a few hours. A nasogastric tube should be placed and gastric contents aspirated to determine the presence of any blood. If a large amount of red blood was found indicating an upper GI bleed (noting that in 15% of cases, there can still be a duodenal ulcer bleed in setting of non-bilious aspirate) then emergency endoscopy, with possible prophylactic airway intubation, would be needed. If no blood is found in the upper GI tract, then I would administer an urgent bowel prep with 4-8 liters of polyethylene glycol over two to four hours using a nasogastric tube. Additionally, a promotility drug such as metoclopramide or erythromycin could be given to maximize cleansing of the colon as prior to emergency colonoscopy.¹⁵

Despite fluid and blood resuscitation, if the patient continued to be hemodynamically-unstable with ongoing hematochezia, then I would likely perform an emergency colonoscopy (using a large channel colonoscope on the unprepped colon) and try to find the bleeding site quickly by washing blood away while irrigating the lumen with water. If there was torrential intraluminal bleeding which prevented endoscopic diagnosis and intervention, and the patient was still hemodynamically-unstable, then I would ask interventional radiology to perform angiography and embolization. I would not do a radionuclide bleeding scan or other non-invasive imaging.



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Richard S. Kwon, MD, MS
University of Michigan

Case Presentation

The patient's nasogastric lavage yields bilious fluid. He receives 4 units of packed red blood cells and is given a rapid prep overnight. He continues to have hematochezia and his hemoglobin rises only to 7.5 gm/dl.

A colonoscopy performed urgently in the ICU reveals an adherent clot and fresh blood at all five polypectomy sites.



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Thomas J. Savides, MD, FASGE
University of California, San Diego

Break Point

The nasogastric lavage with bilious fluid ruled out a coincidental upper GI bleed. The colonoscopy showed diffuse oozing from all polypectomy sites, almost certainly due to the antithrombotic drugs. Fortunately, no active bleeding was seen. At this point, I would treat each site endoscopically with submucosal injection of 1:10,000 epinephrine in 1-2 ml aliquots in 4 quadrants around each polypectomy site, followed by placement of endoscopic clips. I would not use thermal bipolar coagulation in order to avoid the possibility of perforation. Should further brisk, active bleeding occur, clip placement also permits targeted injection by an interventional radiologist on the vessels feeding the regions of the metal clips. I am hopeful that the bleeding will stop after the endoscopic therapy and that the patient can be maintained on aspirin (without clopidogrel) for seven to ten days. To avoid the risk of thrombosis, I would continue to withhold transfusion of platelets but I might reconsider if the bleeding became uncontrolled.



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Richard S. Kwon, MD, MS
University of Michigan

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A total fourteen hemoclips are applied to all five polypectomy sites (Image 3).

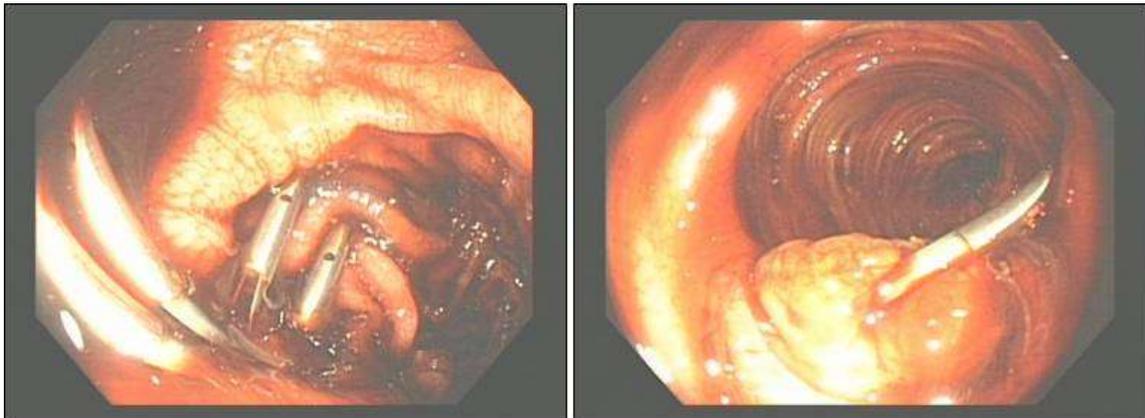


Image 3. Endoscopic hemoclips applied to polypectomy sites at the time of the patient's urgent colonoscopy in the ICU

The patient's hemoglobin stabilizes but does not immediately increase with blood transfusions. A repeat colonoscopy the next day does not reveal any active bleeding. The patient's hemoglobin then increases to 9.5 gm/dl and his hematochezia stops. After his hemoglobin is stabilized, aspirin and clopidogrel are restarted 24 and 72 hours later, respectively. Pathology reveals that all five polyps were benign adenomas.



EXPERT

Thomas J. Savides, MD, FASGE
University of California, San Diego

Break Point

Fortunately, this patient responded to endoscopic clip placement and conservative medical management. Furthermore, he did not have any subsequent thrombotic events after restarting aspirin and clopidogrel. Given his family history of colon cancer in a first-degree relative and the detection of five adenomas (the largest measuring 15 mm), he will still need future colonoscopic surveillance for polyps. According to the most recent guidelines developed jointly by the U.S. Multi-Society Task Force on Colorectal Cancer and the American Cancer Society, this patient should have his next surveillance colonoscopy in three years.¹⁶

Conclusion

This case highlights a number of challenges faced when dealing with colon cancer screening, polypectomy, post-polypectomy bleeding, and adenoma surveillance in patients requiring long term antithrombotic medications. Decisions regarding whether to stop antithrombotic agents must be individualized based on the patient's risk of thrombosis and the anticipated risk of bleeding from the endoscopic procedure. Current ASGE guidelines help to guide optimal management of these challenging patients.

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Author contact information:

Thomas J. Savides, MD, FASGE (Expert)
Professor of Clinical Medicine
University of California, San Diego
Department of Gastroenterology
9500 Gilman Dr. MC0956
La Jolla, California 92093
<mailto:tsavides@ucsd.edu>

Richard S. Kwon, MD, MS (Moderator)
Assistant Professor, Gastroenterology
University of Michigan Medical Center
Department of Gastroenterology
1500 E Medical Center Dr. Taubman 3912
Ann Arbor, Michigan 48109
rskwon@umich.edu

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1520 Kensington Road, Suite 202 | Oak Brook, IL 60523

Phone: (630)573-0600 | Fax: (630)573-0691 | [email](#)

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