



A Percutaneous Endoscopic Colostomy Tube to the Rescue

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ABSTRACT

Percutaneous endoscopic colostomy (PEC) tube placement is a minimally invasive procedure used to treat recurrent colonic pseudo-obstruction, sigmoid volvulus, chronic intractable constipation, and neurogenic bowel. PEC is a viable treatment alternative for patients who have failed conservative therapies and are deemed high risk for surgical management. We present a case of acute colonic pseudo-obstruction after *Clostridioides difficile* infection that was unresponsive to medical treatment or endoscopic decompression. A PEC tube was placed into the transverse colon with successful resolution of the colonic distension.

KEYWORDS: percutaneous endoscopic colostomy; tube; advanced endoscopy; colon; pseudo-obstruction

INTRODUCTION

Acute colonic pseudo-obstruction (ACPO), also known as Ogilvie syndrome, is a disorder characterized by colonic dilatation without mechanical obstruction or anatomic cause. It most commonly occurs in critically ill adult patients and in those with multiple comorbid conditions.^{1,2} The pathophysiology remains poorly understood but has been suggested to relate to dysregulation of the autonomic nervous system.³ Complications can be catastrophic, including intestinal ischemia, perforation, and death. A retrospective review of the National Inpatient Sample of 106,784 cases found ACPO mortality to be 7.7%.⁴

Initial treatment is supportive and primarily consists of correcting conditions that predispose patients to ACPO (eg, correcting serum electrolytes and limiting narcotic and anticholinergic medications).⁵ Operative treatment is reserved for patients with perforation and/or ischemia or in ACPO refractory to conservative measures and endoscopic decompression.⁵

Percutaneous endoscopic colostomy (PEC) tube placement is a novel, minimally invasive procedure used to treat recurrent colonic pseudo-obstruction, sigmoid volvulus, chronic intractable constipation, and neurogenic bowel. We present a case of refractory ACPO successfully treated with a PEC tube into the transverse colon in addition to a review of the literature.

CASE REPORT

A 72-year-old man with significant comorbidities including a body mass index of 53, hypothyroidism, sleep apnea, diabetes mellitus, and hypertension was admitted for lower extremity cellulitis. He was treated with antibiotics with initial improvement of the cellulitis. However, during the admission, he was noted to have worsening abdominal distension, nausea, and diarrhea. Abdominal computed tomography showed colonic distension up to 14 cm in the transverse colon, without obstruction. Workup revealed a positive stool *Clostridioides difficile* polymerase chain reaction. Surgery was consulted because of the significant colonic distension. He was started on oral vancomycin and intravenous metronidazole with symptomatic and objective improvement in the colonic

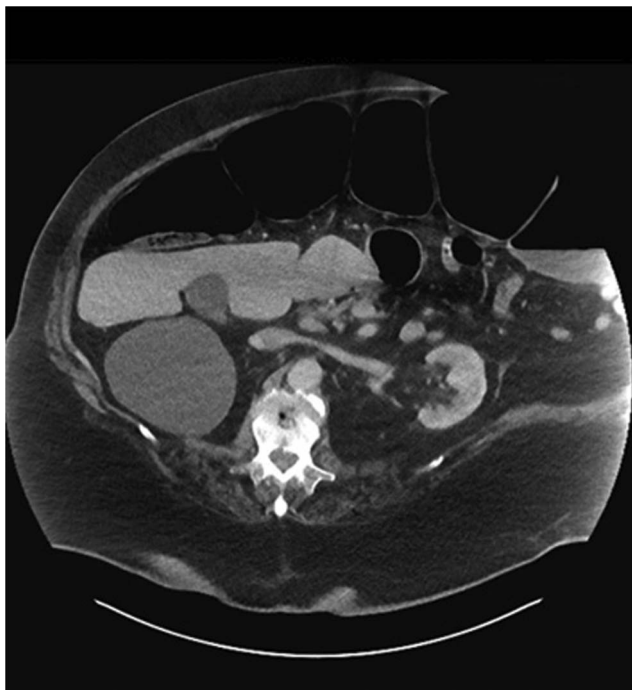


Figure 1. Abdominal-pelvic computed tomography scan showing colonic distension.

distension (down to 9 cm at the transverse colon). Therefore, conservative medical management was continued, and he was discharged to a rehabilitation facility. After discharge, the patient experienced worsening of his diarrhea and abdominal distension on repeat abdominal radiograph, and he, therefore, was readmitted. On readmission, imaging showed persistent colonic distension to 10.7 cm at the transverse colon. He underwent colonoscopic decompression on 2 occasions without sustained resolution of the colonic distension (Figure 1). Colonoscopy revealed a distended colon with normal mucosa and liquid stool and no signs of ischemia or inflammation.



Figure 2. Kidney, ureter, and bladder x-ray showing colonic distension up to 22 cm.

The decision was made to proceed with cecostomy tube placement by interventional radiology. Unfortunately, despite successful 8.5 Fr cecostomy tube placement, the colonic distension continued to worsen mainly in the transverse colon with the diameter reaching 22 cm (Figure 2). The decision was made to place a larger caliber 24 Fr PEC tube in the operation room under monitored anesthesia care. The PEC tube was successfully placed endoscopically in the transverse colon without any acute complications (Figure 3). The patient's colonic dilatation subsequently improved to less than 10 cm on follow-up abdominal radiograph. The patient followed up with his colorectal surgeon 6 weeks later and was doing well without abdominal distension, and the PEC tube was still patent. The tube was removed at that time, and subsequent imaging had demonstrated no further recurrence.

THE PROCEDURE

After obtaining the informed consent from the patient, he was taken to the operating room. As a surgical prophylaxis, a single dose of piperacillin and tazobactam was administered. A collaborative team from anesthesia, colorectal surgery, and gastroenterology was present for the procedure, which was conducted under monitored anesthesia care.

An adult colonoscope was inserted into the colon, reaching the distended transverse colon. The pull technique (commonly used for percutaneous endoscopic gastrostomy [PEG] tube placement) was used in this procedure. We identified the insertion point through direct scope transillumination and 1:1 feedback using one finger depressing on the abdominal wall. We used the Cook 24 Fr PEG tube kit (pull method), but a different snare was selected because of the use of an adult colonoscope.

After marking the location and sterilization, lidocaine provided local anesthesia. The needle was directly visualized in the colon confirming as a safe position. A 1 cm skin incision was made with a scalpel. The needle and cannula were inserted through the incision into the transverse colon, with the cannula left in place for continued access. The blue insertion wire was passed through the cannula, and it was captured in the transverse colon with a snare. The colonoscope was gently withdrawn along with the blue wire.

Subsequently, the blue wire was connected to the looped metal wire on the tube, and a controlled withdrawal of the blue wire through the abdominal wall was performed. Reinserting the colonoscope confirmed the tube's proper position within the transverse colon, as shown in Figure 3.

DISCUSSION

Patients with ACPO are often medically complex and have multiple comorbidities, critical illness, recent surgery, or trauma.⁶ If ACPO progresses to perforation, the risk of mortality substantially rises up to an estimated 50%.⁷⁻⁹ When conservative treatment fails, patients should be considered for pharmacologic therapy with neostigmine and/or endoscopic decompression.

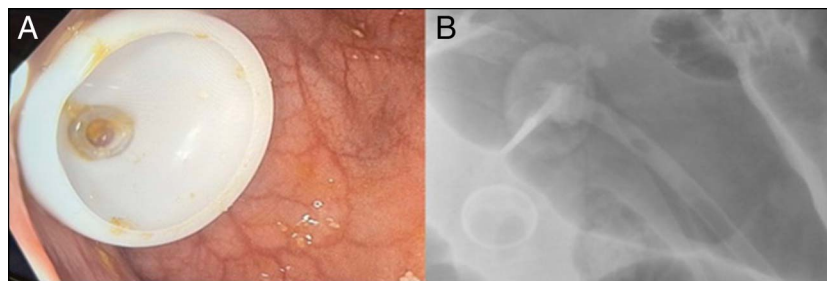


Figure 3. Successful placement of the percutaneous endoscopic colostomy tube endoscopically (A) and radiographically (B) visualized.

Should medical therapy be contraindicated or fail, endoscopic decompression is recommended with a success rate of up to 95%.^{8,9} Surgical management is traditionally reserved for patients who fail conservative, pharmacologic, and endoscopic therapies or in those manifesting serious complications (eg, bowel perforation, peritonitis, and intestinal ischemia).

PEC tube placement is a viable alternative option for patients who have recurrence after endoscopic decompression and are not optimal surgical candidates. Contraindications to PEC tube placement are similar to those of PEG tube placement, including endoscopy noncandidacy, failure to successfully advance the colonoscope, poor abdominal transillumination, and presence of ascites.^{10,11} The rate of major complications of PEC placement seems to be low. Minor complication rate is variable among studies and likely related to variance in reporting threshold and patient follow-up.

Our literature review (see Table 1, Supplement Material, <http://links.lww.com/ACGCR/A36>) found PEC tube placement to have good technical success with low risk of major complications for multiple indications, including ACPO, sigmoid volvulus, chronic constipation, and neurogenic bowel. In addition to the very high technical success rate, most of the patients also achieved clinical success. In the presented case, the patient was a suboptimal surgical candidate, which was a consistent consideration among the existing literature recommendations for determining patient candidacy for PEC. Regarding the tube size, our review found that different tube sizes were used and there were not enough data on which would be superior; however, this could be tailored based on the indication. In our case, the goal was to achieve significant decompression; therefore, we elected for the larger (24 Fr) tube.

PEC is an underutilized procedure that offers a feasible treatment alternative for selected patients who are deemed high risk for surgical intervention and in whom conservative therapy and endoscopic decompression are unsuccessful. Further prospective studies are needed to establish the optimal placement technique, long-term efficacy, and safety.

DISCLOSURES

Author contributions: L. Numan and T. Brotherton reviewed the literature and wrote, edited, and revised the manuscript. M. Baliss, S. Ghosh, and V. Lamm edited and revised the

manuscript. C. Klos, G. Sayuk, and M. Presti edited and revised the manuscript and provided intellectual input. J. Elwing provided the endoscopic images, edited and revised the manuscript, provided intellectual input, and is the article guarantor.

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Informed consent was obtained for this case report.

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