



Use of a novel endoscopic tack and suture system for the management of pancreatocolonic fistula

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INTRODUCTION

Acute necrotizing pancreatitis (ANP) can sometimes be complicated by fistulization into the gut because of inflammatory infiltration.¹ Pancreatocolonic fistulae (PCF) are the rarest, with an incidence of 3%.² Development of these fistulae is associated with significant morbidity, and when needed, their closure has conventionally been achieved by surgery. We present a patient with walled-off pancreatic necrosis (WOPN) complicated with PCF that was closed by a novel endoscopic method.

CASE REPORT

A 35-year-old woman with a history of acute biliary pancreatitis complicated by WOPN presented with abdominal pain. A CT scan showed a peripancreatic fluid collection extending from the mid-abdomen along the paracolic gutters to the pelvis. She underwent transgastric endoscopic ultrasound-guided drainage using a lumen-apposing metal stent (LAMS) and 3 sessions of direct endoscopic necrosectomy. After clinical and radiological improvement, the LAMS was removed, pigtail stents were placed across the cyst-gastrostomy, and she was discharged with plans for repeat imaging. However, she was lost to follow-up. She subsequently presented with fever, and a CT scan revealed near-resolution of the perigastric collection with no communication to the collection in the left lower quadrant, which now measured 6.8 × 10.2 cm. A CT-guided drain was placed, and a contrast injection through the drain demonstrated extravasation into the descending colon, showing a fistula (Fig. 1). A repeat CT scan demonstrated a fistulous communication between the pelvic collection, and a descending colon was noted (Fig. 2). A lower-GI series confirmed a fistula defect in the descending colon (Fig. 3). The drain continued to produce feculent material, and the patient remained persistently unwell, with drain cultures growing different colonic bacteria (*Bacteroides*, *Escherichia coli*). Therefore, because of recurrent sepsis and continuous fecal contamination of the cyst, a decision was made to close the fistula endoscopically.

Using argon plasma coagulation (APC) (60 W, argon gas flow rate 1.2 L/min) with a 2.3-mm circumferential probe (ERBE Elektromedizin, Tübingen, Germany), we treated

the fistulous tract to promote scarring, encourage granulation tissue formation, and aid in tissue apposition. The closure was performed with X-Tack Endoscopic HeliX System (Apollo Endosurgery, Austin, Tex, USA) (Video 1, available online at www.giejournal.org). The defect was closed using 8 tacks placed across the defect in a “Z” pattern in an overlapping fashion (Fig. 4). Percutaneous drain output markedly improved following the procedure, confirming continued closure of the fistula. A repeated CT scan showed near resolution of lower left quadrant collection at 1 month, and a barium enema confirmed complete fistula closure (Fig. 5). At a 6-month follow-up, she remained well and asymptomatic.

DISCUSSION

Gastrointestinal tract fistulation is an uncommon but important consequence of ANP.³



Figure 1. Contrast injection through left lower quadrant drain demonstrating communication with the descending colon, suggesting a pancreatocolonic fistula.

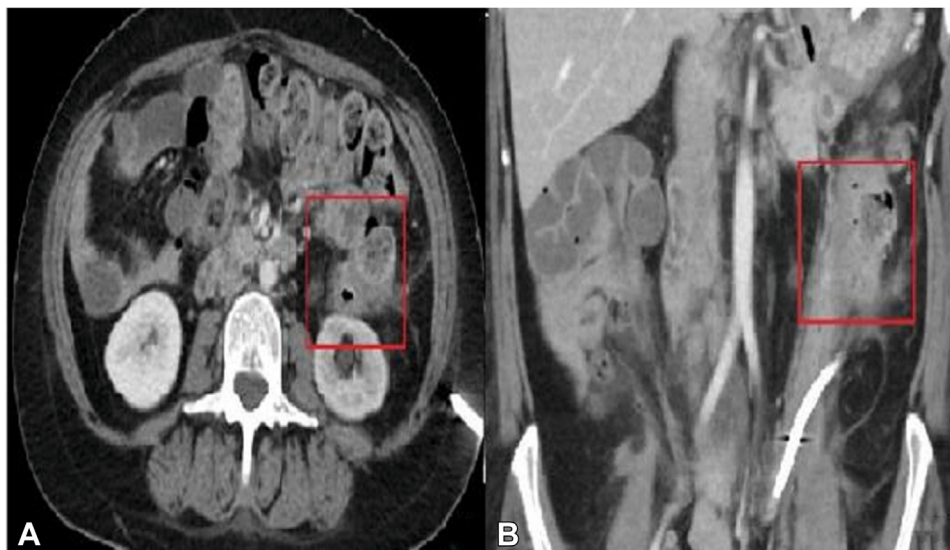


Figure 2. A and B, Fistulous communication between the pelvic collection and descending colon can be seen in the area (*highlighted in red*). Loss of fat plane between the collection and the descending colon can be noted.

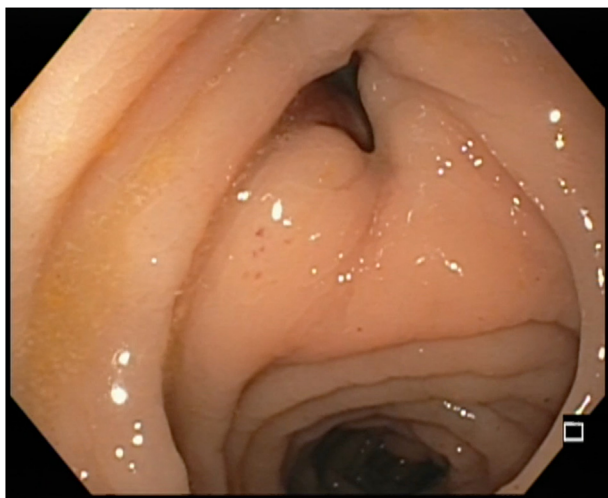


Figure 3. Pancreaticocolonic fistula seen in the descending colon.

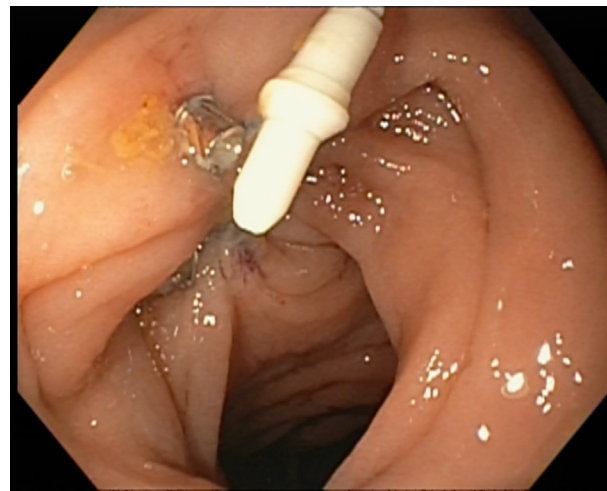


Figure 4. Fistula site following endoscopic closure using the helix tack suturing system.

In cases of upper GI fistulae, supportive care generally suffices, and spontaneous closure is likely; these fistulae can also provide drainage for the cyst.^{4,5} Spontaneous closure is less likely in fistulae to the colon, which carries a poor prognosis and is potentially a continuous source of infection because of fecal contamination, and may require closure, as in the case of our patient.^{4,5}

Our case demonstrates the efficacy of suturing using a novel helical-tack system. Endoscopic closure using conventional through-the-scope clips is often limited by the need for optimal positioning to achieve adequate tissue apposition and requires multiple clips for larger defects. Over-the-scope clips are limited by the need for endoscope

removal for loading and reinsertion to the target site, which may be challenging for fistulae at difficult locations, and may not suit fistulae with friable margins, which serve as poor anchor sites.

The helical-tack system permits maneuverability and approximates defects by anchoring into healthy tissue without endoscope withdrawal. Mucosal apposition from the APC-induced scarring and the suturing system were likely contributors to closure success, along with the presence of the percutaneous drain. The new helix tack system may be especially suitable in the proximal colon, where access by other closure devices can be challenging.

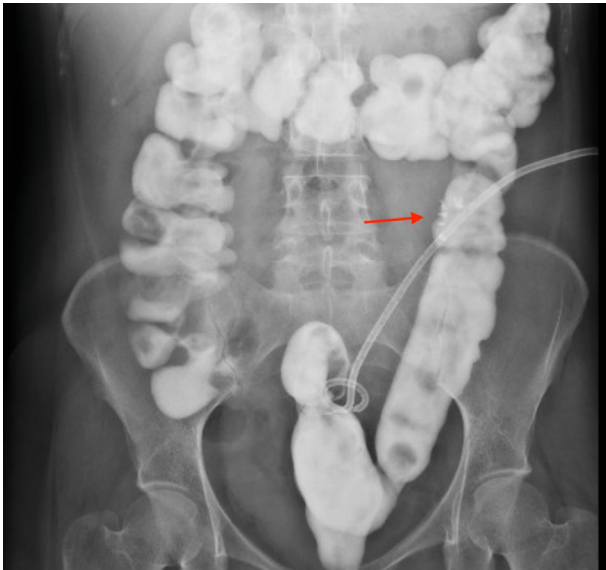


Figure 5. Barium enema demonstrating no evidence of contrast extravasation. The *red arrow* points to the area of endoscopic fistula closure.

DISCLOSURE

Dr Singh is a consultant for Apollo Endosurgery. All other authors disclosed no financial relationships.

Abbreviations: ANP, acute necrotizing pancreatitis; APC, argon plasma coagulation; LAMS, lumen-apposing metal stent; PCF, pancreatocolonic fistula; WOPN, walled-off pancreatic necrosis.

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