Percutaneous caecostomy for the management of closed loop large bowel obstruction: A delayed complication of severe gallstone pancreatitis

J Aldoori, J Cast, IA Hunter

Castle Hill Hospital, Cottingham, UK

ABSTRACT

Colonic complications following pancreatitis are unusual events ranging from 1% to 15%. In a patient with a hostile abdomen and multiple previous laparotomies, surgical management of a closed-loop large-bowel obstruction risks significant morbidity and mortality for the patient, necessitating other strategies for management. Caecostomy in the management of large bowel obstruction is an often forgotten weapon in the general surgeons' armoury.

KEYWORDS

Caecostomy – Large bowel obstruction – Pancreatitis – Complications

Accepted 13 July 2018

CORRESPONDENCE TO

Joanna Aldoori, E: joannaaldoori@doctors.org.uk

Introduction

Colonic complications following pancreatitis are unusual events and rarely occur several years after a severe episode of pancreatitis. In a patient with a hostile abdomen and multiple previous laparotomies, surgical management of a closed-loop large-bowel obstruction secondary to a 3-cm stricture at the proximal descending colon swiftly loses its appeal. It risks significant morbidity and mortality for the patient, necessitating other strategies for management.

Case history

A 64-year-old man presented with central abdominal pain and decreased stoma output. He had an extensive surgical history beginning in his twenties when he underwent a splenectomy and nephrectomy following a road traffic accident. In his early fifties he developed severe gallstone pancreatitis, for which he endured a five-month stay in intensive care and underwent a necrosectomy, small-bowel resection and formation of an end ileostomy. He underwent an open cholecystectomy two years later, in addition to a further laparotomy the following year for complications associated with a retroperitoneal abscess.

Computed tomography on admission demonstrated a closed-loop large-bowel obstruction of his de-functionalised colon, with a caecal diameter of 9 cm, secondary to a stricture at the proximal descending colon at the site of previous scarring from the retroperitoneal abscess (Fig 1). A water-soluble contrast enema revealed a 3-cm stricture at the proximal descending colon (Fig 2). There was no

success from the contrast enema in relieving the obstruction and therefore an interventional radiologist performed a caecostomy with a 14 Ch MIC balloon gastrostomy tube the following day (Fig 3).

The gentleman was discharged from hospital three weeks later with the tube caecostomy in place and flushes for the district nurses to manage the tube (Fig 4).

Discussion

Colonic complications of pancreatitis

Bowel complications following pancreatitis are unusual events ranging from 1% to 15% with the majority of these being pancreatocolonic fistulas.^{1,2} Other manifestations include colonic ischaemia, necrosis and colonic strictures.³

The literature is limited to small cohorts, case series and case reports. A clinical review by Mohammed *et al* 2008 included 43 case reports of 97 patients and found that the main colonic presentations associated with severe acute pancreatitis were necrosis, which presented at a median of 25 days and stricture presenting with a median of 50 days and a range of 10–270 days.² The transverse colon and splenic flexure are the most common sites for complications to occur.¹

Closed-loop large-bowel obstruction

Strategies to manage a closed-loop large-bowel obstruction include bowel resection, with or without the formation of a colostomy and colonic stenting. Stenting is associated with complications including migration, further obstruction and perforation, and may require further definitive management.

Figure 1 Computed tomography demonstrating gross dilatation of the fluid filled proximal colon.

Figure 2 Water-soluble contrast enema showing the obstructing stricture in the proximal descending colon.

In the management of malignant large bowel obstruction, the Association of Coloproctology of Great Britain and Ireland in their 2007 position statement recommended against the use of self-expanding metallic stents in the presence of perforation, peritonitis and closed-loop large-bowel obstruction.⁴ Caecostomy is a viable option for the management of acute large-bowel obstruction but has perhaps not received such common use in the management of such cases.

Caecostomy

Caecostomy is a procedure that involves bridging the caecum through the abdominal wall and opening it for drainage or decompression and has its foundations in sixteenth-century France. Littre is credited with first proposing a caecostomy in 1710 after observing a post mortem on a baby with an imperforate anus.⁵ In 1757, Louis, secretary to the Royal Academy of Surgery in Paris, described the formation of a caecal fistula for intestinal obstruction. As Hardy describes in her 1989 paper the 'Evolution of the stoma', Nelaton less than a decade later taught students in cases of intestinal obstruction to open the abdomen in the right iliac fossa, take the first loop of distended bowel, suture it to the wound and open it in the hope that this

would establish a caecal fistula close to the ileocaecal valve.⁶

Modern-day use of caecostomy is primarily in the management of incontinence in children as described by Chait in 1997, whose name has become eponymous with the tubes and buttons used to manage constipation.⁷

There is limited current literature of this procedure, with the majority of reviews published in the late 1980s to 1990s and consisting of case series and cohorts demonstrating its benefits in the management of obstruction in select cases. A retrospective review of caecostomy patients was undertaken at the Mayo Clinic over an 11-year period. Of the 67 patients, caecostomy was the primary procedure in 47. Minor complications were seen in 30 patients and included pericatheter leak, superficial wound infection, skin excoriation, premature tube dislodgement and ventral hernia.⁸

Caecostomy has been achieved through Foley catheter tubes, pigtail catheters and even through use of an endotracheal tube.⁹ Caecostomy in the management of large-bowel obstruction is an often forgotten weapon in the general surgeons' armoury.

Figure 3 Fluoroscopic image from caecostomy insertion showing caecopexy sutures used to fix the caecum and catheter in the ascending colon.

Figure 4 Computed tomography one week after caecostomy insertion with the tube in the ascending colon and the colon decompressed.

Patient perspective

Being no stranger to surgery, this man understood the complexities of surgical intervention and as he already had a stoma he was able manage the caecostomy tube. Understandably, his main concern was ‘having a smelly tube attached to him at all times’ and the insight that caecostomy may fail requiring delayed surgical management.

References

1. Abcarian H, Eftaiha M, Kraft AR, Nyhus LM. Colonic complications of acute pancreatitis. *Arch Surg* 1979; **114**(9): 995–1,001.
2. Mohammed SR, Siriwardena AK. Understanding the colonic complications of pancreatitis. *Pancreatology* 2008; **8**(2): 152–158.
3. Aldridge MC, Francis ND, Glazer G, Dudley HA. Colonic complications of severe acute pancreatitis. *Br J Surg* 1989; **76**(4): 362–367.
4. Finnan PJ, Campbell S, Verma R *et al*. The management of malignant large bowel obstruction: ACPGBI position statement. *Colorect Dis* 2007; **9**(Suppl 4): 1–17.
5. Dinnick T. The origins and evolution of colostomy. *Br J Surg* 1934; **22**(85): 142–154.
6. Hardy K J. (1989) Evolution of the stoma. *Aust N Z J Surg* 1989; **59**: 71–77.
7. Chait PG, Shandling B, Richards HF. The caecostomy button. *J Paed Surg* 1997; **32**(6): 849–851.
8. Benacci JC, Wolff BG. Caecostomy: therapeutic indication and results. *Dis Colon Rectum* 1995; **38**(5): 530–534.
9. Harries K, Shandall A, Stephenson B. Endotracheal tube caecostomy. *Lancet* 1997; **350**(9082): 93.