

Small bowel anastomotic volvulus at reversed loop ileostomy site: a case report

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Background

Diverting ileostomies are created to reduce the rates of anastomotic complications in distal bowel resections¹⁻². Reversing an ileostomy is a common procedure and is well documented in the literature to have known complications, such as bowel obstruction, wound infection, and anastomotic leak³⁻⁴.

An intestinal volvulus generally involves twisting of the bowel around a fixed point, leading to obstruction, oedema, and possibly ischemia or perforation⁵. There have been a few case reports in literature describing a volvulus post ileal-pouch anal anastomoses, however, there has yet to be a case of small bowel anastomotic volvulus post ileostomy reversal.

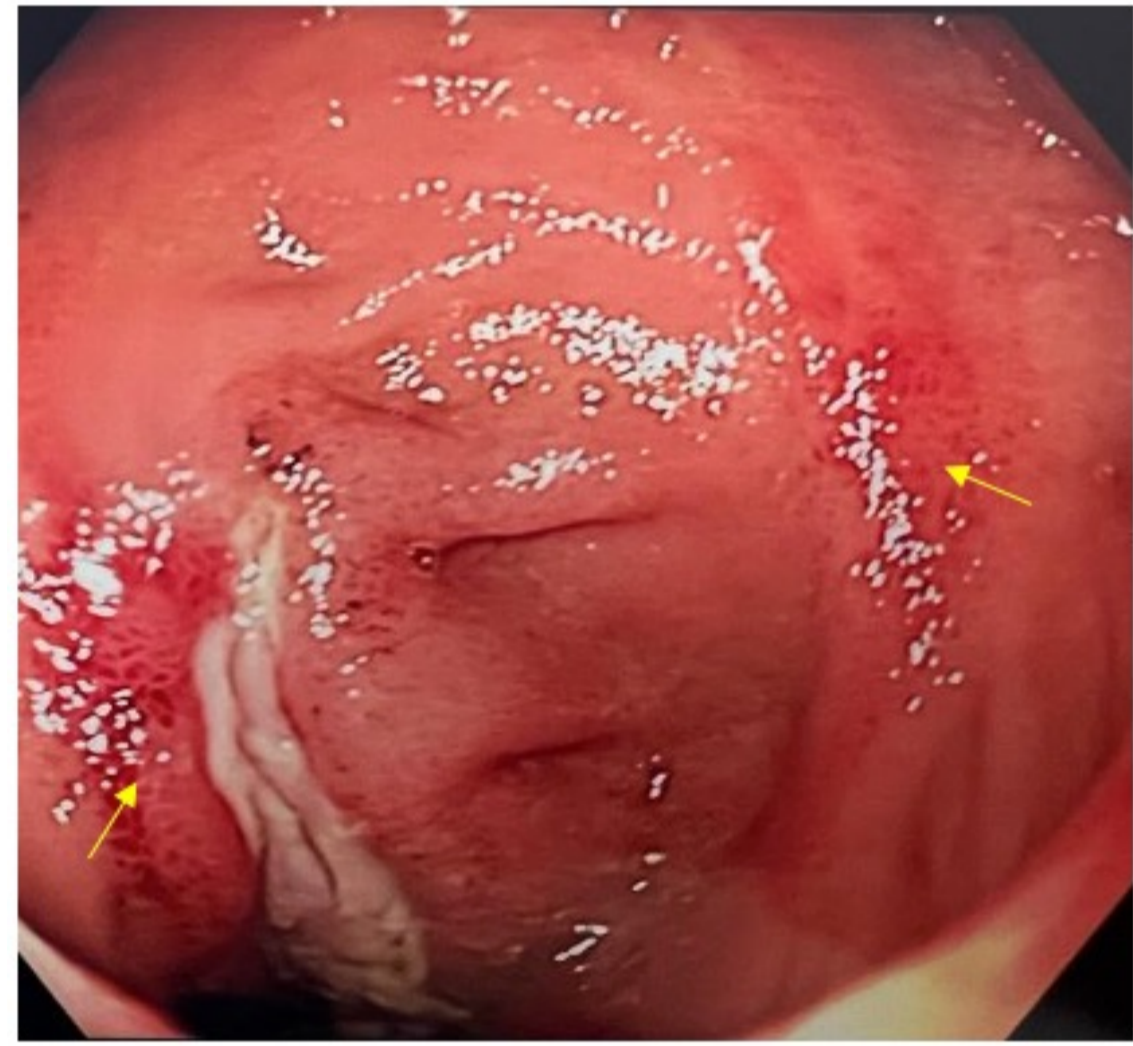
Objectives

The aim of this paper is to describe the series of events in this case and compare it with current literature.

Case Study Timeline and Events

A 57-year-old female presented to the emergency department with suspected small bowel obstruction (SBO). She had presented with acute abdominal pain and nausea on a background intermittent, progressive, colicky abdominal pain for the past 12 months. She had one previous episode of SBO that had settled conservatively, as well as a past medical history of ulcerative colitis, treated with a laparoscopic proctocolectomy, IPAA and loop ileostomy 15 years prior. The ileostomy was later closed as a side-to-side stapled anastomosis.

Routine pouchoscopy for ulcerative colitis surveillance five months prior to this presentation demonstrated two areas of non-circumferential ulceration adjacent to a dilated reversed ileostomy site (Figure 1). Biopsies of the ulceration demonstrated no active inflammatory bowel disease. Her IPAA was noted to be normal in appearance.



Her physical examination was consistent with a small bowel obstruction. Laboratory results demonstrated an elevated white cell count of $13.6 \times 10^9/L$ ($4.0-11.0 \times 10^9/L$) and a C-Reactive Protein of 89 mg/L ($<5 \text{ mg/L}$). CTAP with oral contrast demonstrated findings consistent with a mechanical small bowel obstruction, concerning for a closed loop obstruction (Figure 2).

Figure 1. Endoscopic image depicting ulceration and erythematous areas of small bowel where the volvulus occurred (yellow arrows) on previous routine pouchoscopy surveillance.

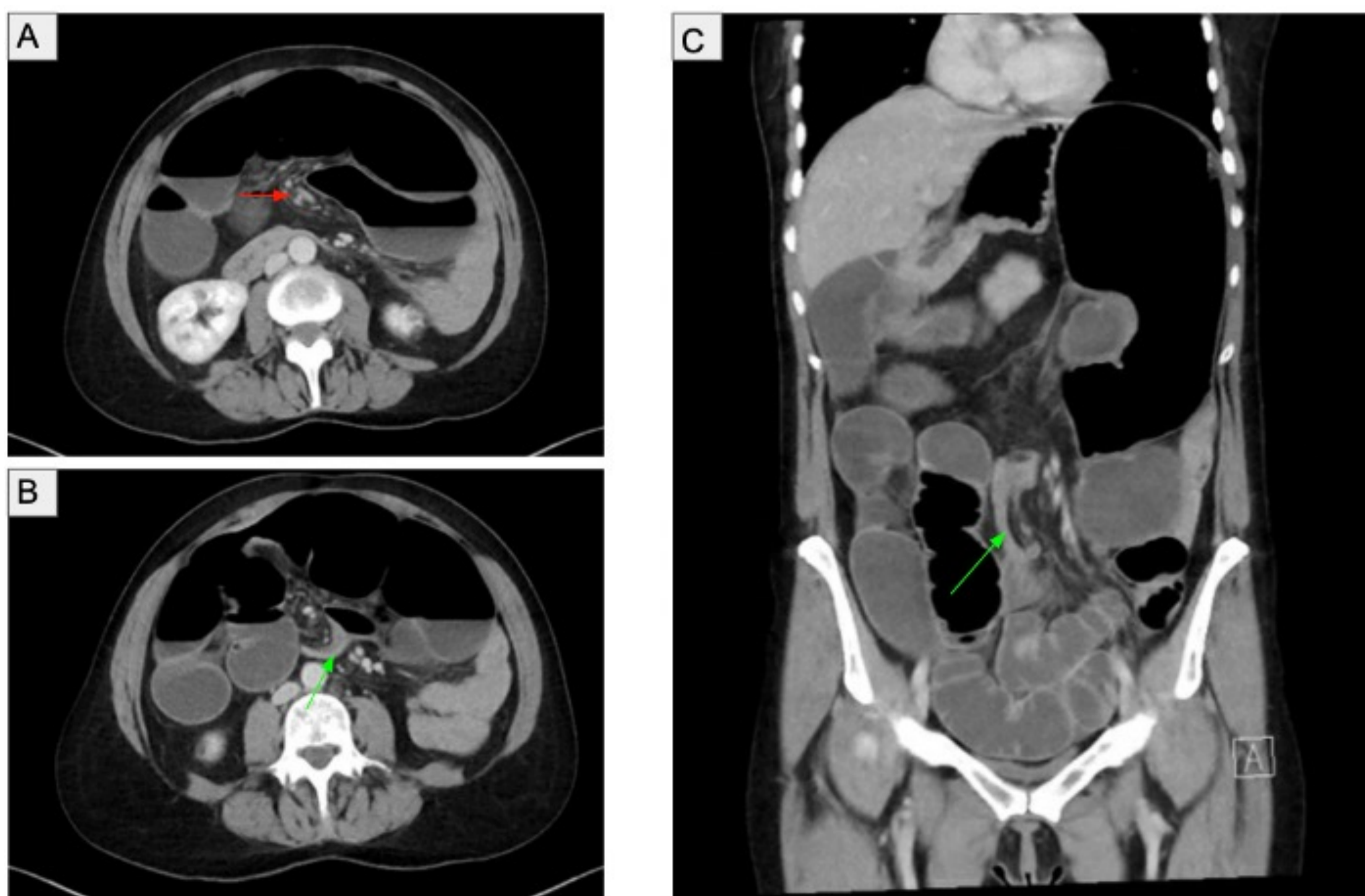


Figure 2. CTAP demonstrating marked small bowel dilation, up to 98 mm, in the left upper abdomen, with central abdomen transition point (green arrow) and mesenteric swirling (red arrow).

Intra-Operative Notes

Laparotomy revealed a massive dilation of the previous small bowel anastomosis site (site of closure of ileostomy) to approximately 20 cm. There were no adhesions in the region contributing to obstruction. The appearances were that the dilated anastomosis was filling with fluid and suspending from the mesentery, allowing the heavy mobile segment to rotate around the mesentery. A flexible colonoscope was passed per rectum to decompress the dilated segment. Two subtle ulcers were visible proximal and distal to the dilated small bowel anastomosis, similar in appearance, to those identified on her previous pouchoscopy. The distal small bowel and the pouch were normal, and no strictures were seen.

Intra-Operative Notes Continued

These findings were suggestive of an intermittent volvulus of the grossly dilated segment. The small bowel mesentery was divided and the previous anastomosis with adjacent dilated small bowel was resected and taken to pathology for analysis (Figure 3). A new side-to-side stapled anastomosis was created.

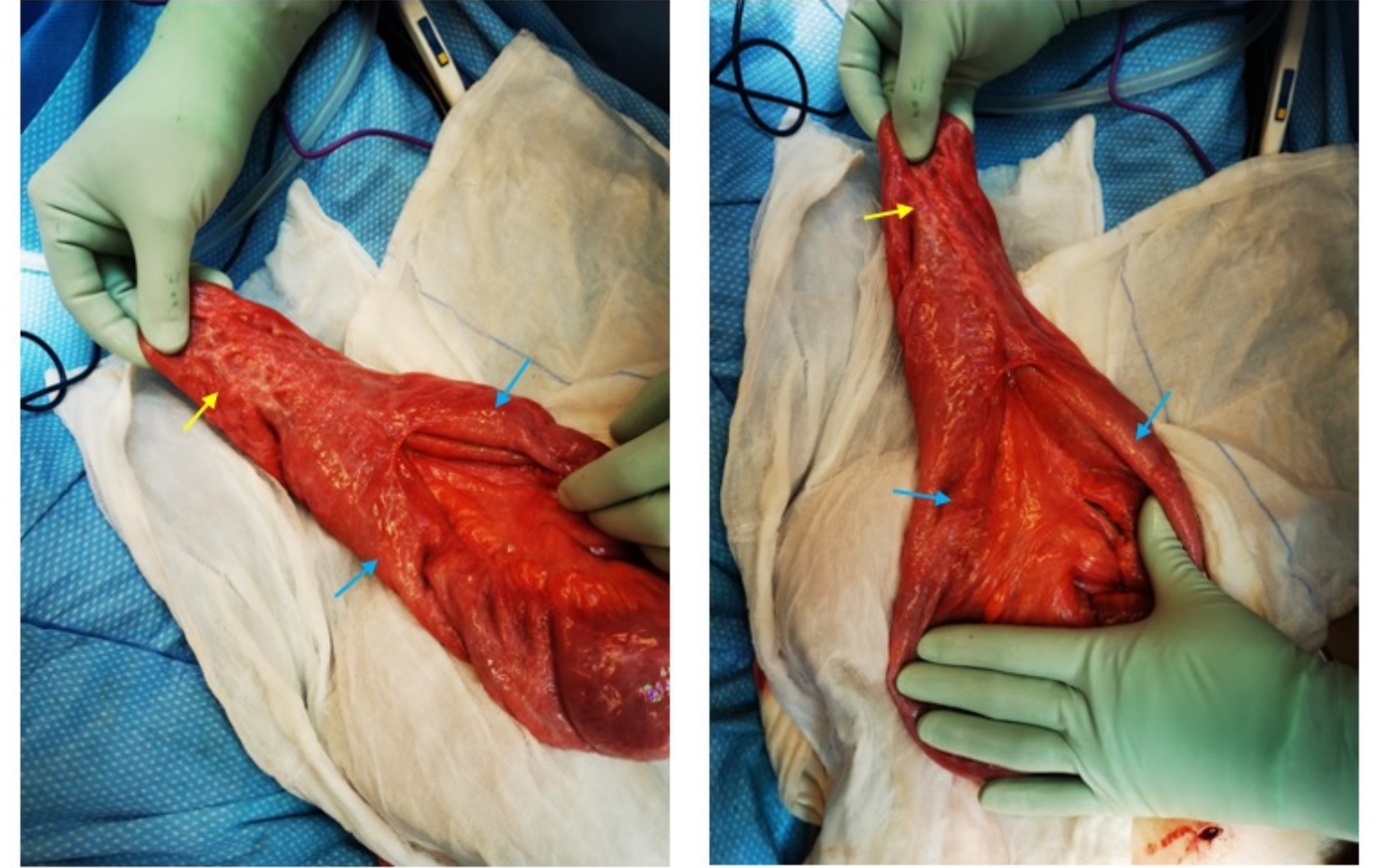


Figure 3. Operative specimen demonstrating chronically dilated anastomoses site. Yellow arrows demonstrate the decompressed anastomoses. Blue arrows point to the proximal and distal limbs and demonstrate the erythematous patches of small bowel where the volvulus occurred.

Discussion

A small bowel volvulus, like in our case, is relatively less common in older adults and usually forms due to adhesions, Meckel's diverticulum, or a tumour⁵⁻⁶. Although cases of intestinal volvulus occurring due to an ileostomy reversal have not been reported, there have been few occurrences of "pouch volvulus" following IPAA⁷⁻¹². Other reported risk factors for pouch volvulus include minimally invasive techniques, female sex, and low body mass index¹¹. Although our patient has an IPAA, it was not the pouch segment that underwent volvulus, but rather the small bowel anastomosis site from previous loop ileostomy reversal. It is unclear why a volvulus occurred in our patient, however factors contributing to this may include a chronically dilated anastomosis that had filled with fluid, elongating over time, and subsequently twisting on its mesentery.

It is also likely that this was chronic, given that her previous surveillance pouchoscopy five months earlier had demonstrated ulceration adjacent to the anastomosis site, which was likely resultant from intermittent volvulus over time. Supporting this, Le Gal et al. had reported two cases of duodenojejunal anastomosis post pancreas transplant which had undergone volvulus¹³. Both patients had an anastomosis which had twisted around the mesentery, resulting in a volvulus¹³.

Conclusion

To our knowledge this is the first documented case of small bowel anastomotic volvulus post ileostomy reversal. An anastomosis volvulus should be included in a list of differentials for an individual with a history of ileostomy reversal presenting with symptoms suggestive of bowel obstruction.

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