

## Special Article - Surgical Case Reports

# Chronic Functional Intussusception into a Prolapsed Loop Colostomy

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## Abstract

A 38-year-old man underwent multiple surgical procedures for fecal peritonitis, the last of which involved the fashioning of a diverting loop colostomy. Five years later the patient presented with a massive prolapsing colostomy (retrograde and ante-grade). This was functional for 5 years before he considered surgery. He managed well in terms of bowel function but found difficulty handling the ostomy with homemade ostomy plastic bags. Due to distal colonic atrophy a total colectomy with end ileostomy was performed. The patient's post-op recovery was uneventful and up to 1 year later he had no complaints and the ileostomy was functioning well.

A review of the literature reveals the rarity of this colostomy complication, and its management has been based on the individual situation. When presented with a prolapsing enterostomy that cannot be reduced, the diagnosis of intussusception in the ostomy should be entertained. Reversal of diverting stomas should be done in a timely manner to avoid this and other complications.

**Keywords:** Prolapse; Intussusception; Colostomy; Enterostomy

## Introduction

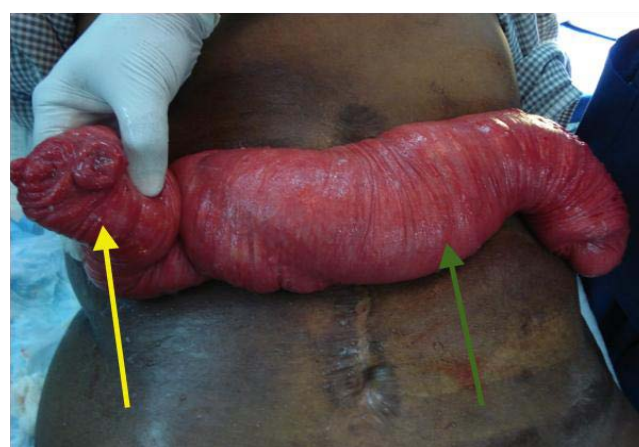
Multistage procedures as surgical therapy are sometimes necessary when dealing with certain colonic emergencies or elective colonic procedures. Creating a diverting colostomy may play a very important role in these cases; however, this can be associated with various complications, prolapse being the most common [1].

Intussusception in a colostomy is very rare and there are very few reported cases in the literature [2]. We present the case of an adult male who was treated for fecal peritonitis resulting in the creation of a right-sided loop colostomy. The patient developed multiple intussusceptions in the colostomy (ante-grade and retrograde). To our knowledge, this is the first case of multiple intussusceptions in a loop colostomy in the published literature.

## Case Report

A 38-year-old man suffered gunshot wound to the abdomen 13 years ago. The internal injury was confined to the sigmoid colon, which was repaired primarily. Three years later the patient presented with an acute abdomen secondary to sigmoid diverticular perforation. The perforated segment of the sigmoid colon was removed and primary anastomosis performed. Subsequently, the patient developed colovesical and colocutaneous fistulae. This was treated by diversion of the stool by way of a loop colostomy at the mid ascending colon. Five years later he noticed the colostomy getting larger but never sought assistance until another 5 years. By this time the bowel at the colostomy site was protruding to the other side of his abdomen (Figure 1), with no adverse effect on the intestinal function. Due to the massive size of the prolapsed segment, he used a homemade plastic bag to collect stool, which would often lead to leakage and odor that was more disturbing to the family members.

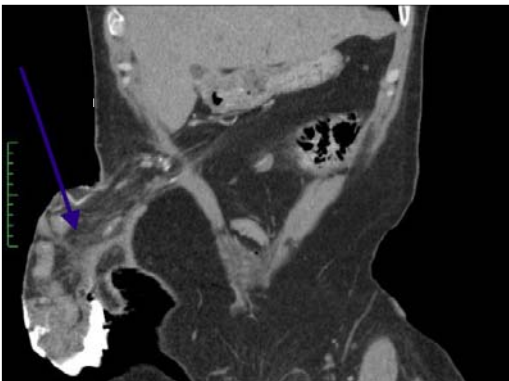
Preoperative workup included a cystogram (normal with no fistula) and a barium enema. The latter was extremely difficult to interpret (Figure 2) except to highlight the atrophic distal colon. In retrospect, the featureless bowel on the right side was most probably the retrograde intussusception of the colon. A CT scan was also performed which revealed a large amount of bowel with its mesentery in what was thought to be a "paracolostomy hernia" (Figure 3). At surgery the prolapsed bowel felt very doughy with the feel of bowel within. Laparotomy revealed intussusception of the transverse colon, retrograde into the ostomy and the cecum and small bowel ante-grade. The sigmoid colon and rectum were extremely atrophic and narrowed. A total colectomy with end ileostomy (Figure 4) was performed and the rectal stump was closed with staples. The patient



**Figure 1:** Photograph showing the intussusception of a prolapsed loop colostomy of the ascending colon. The green arrow points at the distal (retrograde intussusception) end and the yellow arrow points at the proximal (ante-grade intussusception) end of the colostomy.



**Figure 2:** Barium study showing an atrophied, featureless large intestine with diverticulitis in the descending colon and an area of stricture (red arrow) at the proximal sigmoid colon. The outline of the urinary bladder appears normal. The featureless bowel on the right side (yellow arrow) represents the retrograde intussusception of the colon.



**Figure 3:** Coronal view of the CT scan of the abdomen with oral and IV contrast, showing a large amount of "prolapsed" bowel and its mesentery (arrow).

was discharged on post op day three. One year later the patient had no complaints and the ileostomy was functioning well, with no complications.

## Discussion

Stoma prolapse ranges from 2 to 22% of all enterostomy complication [3]. Surgical complications of a colostomy are not very common; prolapse being the most common of the reported surgical complications (approximately 50%) [2]. The loop configuration of the stoma, colostomy (especially the proximal transverse colon) more than ileostomy and the distal end of the loop appear to be more commonly associated with prolapse [2]. Our patient had all these predisposing factors together with a chronic history, which not only provoked this complication but also made it dramatically worse.

Intussusception is the telescoping of a segment of the gastrointestinal tract into an adjacent one. Wang et al. (2009) did a retrospective review on Adult Intussusception (AI) over a period of 6.5 years from the medical records of 41 patients. None of these cases



**Figure 4:** Photograph showing the end ileostomy on the left and the previous stoma site on the right immediately post-op.

had any association with an enterostomy [4]. The main incidence of intussusception is in children during the first 2 years of life, and since 1921 Perrin and Lindsay found the incidence of AI to be approximately 5% [5].

Strange reported a case of idiopathic retrograde intussusception of the colon. After reviewing and analyzing the literature of published cases, he postulated a classification of intussusception into 2 main groups; single and multiple. In the multiple group one may be retrograde and the other ante-grade. Another combination is where an ante-grade intussusception for some reason is halted and then reverses direction, hence becoming a retrograde intussusception. A third combination of multiple intussusceptions is where ante-grade and retrograde intussusceptions have met "head on" and one has telescoped the other [6]. Our patient had the multiple subtypes, where the hepatic flexure and most of the transverse colon telescoped the distal end of the loop colostomy (retrograde intussusception) and the cecum and distal small intestine telescoped the proximal end (ante-grade intussusception).

The etiology of AI falls under the umbrella of physiologic disorders of the alimentary tract whose etiology has not yet been fully discovered. Inflammatory swelling of lymphoid tissue, acting like a foreign body, is generally considered to be the cause of the common ante-grade intussusception we see during the first 2 years of life and a neoplasm being the usual cause of intussusception in the adult [5,6]. However, there is very little explanation of the idiopathic intussusception in the adult, which appears to be the situation with our patient as no structural abnormality was found as the lead point after reduction of the intussusception at laparotomy.

Few cases of intussusception in an enterostomy have been reported in the literature. Keane and Whittaker as well as Trabulsi et al. reported a single intussusception in a patient with a colostomy, which was managed by resection and refashioning of the colostomy and reversal of a Hartmann's procedure respectfully [2,7]. Other authors have reported intussusception in an ileostomy in pregnant women. They managed their patients with revision of the ileostomy and open reduction with ileopexy to the abdominal wall respectively. There was no pathology associated with the intussusceptum in any of the cases. They all presented with prolapsed stomas that will not reduce and were all treated acutely [2,7-9].

In general, intussusception is regarded as a surgical emergency due to the risk of ischemia or obstruction. Our case was chronic and functional for several years, which may be more in keeping with a large chronically prolapsed loop colostomy and treatment was obtained for social implications of leakage. On the other hand, in 1952, Wright mentioned both the occasional occurrence of feeble retrograde peristalsis arising near the hepatic flexure under normal conditions and also the occurrence of powerful retrograde movements in the colon in the presence of obstruction [10]. This theory may in part explain the retrograde intussusceptions in our patient.

Multistage procedures, which include a temporary colostomy, have been considered a safe approach in the surgical treatment of emergency and some elective colonic conditions [3]. This method of management is not without complications, especially colostomy closure, which is associated with a significant rate of morbidity and mortality [3,11,12]. Before performing a colostomy, one must carefully consider the absolute need for it versus the potential complications and morbidity of reversal. The safety of primary anastomosis even in sepsis without diverting ostomy is rapidly gaining favor [13,14].

## Conclusion

When a patient presents with a prolapsed enterostomy that cannot be easily reduced, the diagnosis of intussusception in the ostomy should be entertained. Careful consideration about the need for an ostomy and early reversal are recommended to avoid the many complications associated with them and their reversal.

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