



Case Report

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Serial Endoscopic Decompression in Recurrent Sigmoid Volvulus: Temporary Success, Definitive Failure



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ABSTRACT

Recurrent Sigmoid Volvulus (RSV) is characterized by repeated torsion of the sigmoid colon around its mesenteric axis following previous intervention, most commonly after successful endoscopic detorsion. Recurrence rates are significantly higher after non-operative management compared with definitive surgical resection. Predisposing factors include advanced age, male sex, chronic constipation, high-fiber dietary intake, and anatomical abnormalities such as a redundant sigmoid colon with an elongated mesentery. RSV is associated with substantial morbidity and carries the risk of bowel ischemia, perforation, sepsis, and death if treatment is delayed. Consequently, definitive surgical management, typically sigmoid colectomy with primary anastomosis, should be considered to minimize recurrence and prevent life-threatening complications. We report the case of a 73-year-old man with multiple recurrent episodes of sigmoid volvulus who underwent emergency sigmoid resection with primary end-to-end anastomosis after four previous hospital admissions treated with endoscopic decompression. This case illustrates the limitations of repeated endoscopic decompression as a temporizing strategy and demonstrates the potential consequences of delaying definitive management. It further emphasizes the importance of early risk stratification and timely surgical intervention in suitable patients with recurrent sigmoid volvulus.

Introduction

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igmoid volvulus is a surgical emergency that occurs due to the twisting of the redundant sigmoid colon at its mesentery [1]. This torsion can lead to acute intestinal obstruction if no intervention is performed. This condition could lead to life-threatening complications such as bowel ischemia,

gangrene, and bowel perforation [2]. Recurrent sigmoid volvulus, as the name suggests, is the recurrence of mesenteric torsion around the sigmoid colon after decompression or sigmoid colectomy has been performed [3]. The recurrence of sigmoid volvulus after sigmoidectomy is rare; however, it is still possible [3]. The recurrence rate of sigmoid volvulus treated by endoscopic decompression ranges from 30% to 90% [4]. Key factors associated with recurrent

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sigmoid volvulus include advanced age, male sex, high-fiber diet, living at high altitudes, chronic constipation, dolichosigmoid, and incomplete sigmoidectomy [4]. Patients with recurrent sigmoid volvulus commonly present with features of acute large bowel obstruction, including abdominal pain, progressive distension, vomiting, and absolute constipation with inability to pass stool or flatus. Examination may reveal a tympanitic, distended abdomen, abdominal tenderness, reduced or absent bowel sounds, and an empty rectum, often with a prior history of volvulus or endoscopic detorsion. Complicated cases may present with fever, tachycardia, peritonism, hemodynamic instability, or systemic deterioration, raising concern for bowel ischemia, perforation, or sepsis and requiring urgent surgical intervention [4]. Due to the high mortality and morbidity associated with sigmoid volvulus, sigmoid resection with primary anastomosis is commonly performed, as it provides the best outcome and reduces the risk of recurrence [4, 5].

Case Presentation

A 73-year-old man with a background history of hypertension, dyslipidemia, chronic constipation, and four previous admissions for recurrent sigmoid volvulus presented to the Emergency Department with 3 days of worsening abdominal pain and distension, associated with vomiting and 2 days of obstipation. He had a 2-year history of constipation (Bristol Stool Types 1–2) with intermittent straining. He denied laxative or traditional medication use. His lifestyle was notable for low dietary fiber intake, physical

inactivity, and occasional alcohol consumption. There was no relevant family history. The patient was first diagnosed with sigmoid volvulus in April 2025 and subsequently underwent four successful endoscopic decompressions over the following year. Previous endoscopic findings consistently demonstrated a twisted redundant sigmoid colon with viable mucosa. Interval colonoscopy after one recurrence showed severe oedematous and inflamed colonic mucosa from the sigmoid colon to the hepatic flexure; biopsies demonstrated chronic mildly active colitis, likely secondary to prior volvulus-related insult. Despite repeated recurrences, no prior episode had been complicated by perforation or ischemia. Elective surgery had previously been offered but declined because of perceived operative risk. On examination, he was hemodynamically stable and afebrile. The abdomen was markedly distended, soft, and diffusely tympanitic, with localized periumbilical tenderness and sluggish bowel sounds. Rectal examination revealed an empty rectum. Laboratory investigations demonstrated neutrophilic leukocytosis, raised C-reactive protein, hypokalemia (2.4 mmol/L), hypocalcemia (2.0 mmol/L), hypomagnesaemia (0.97 mmol/L), and hypophosphatemia (0.63 mmol/L), with normal venous blood gas parameters. An urgent chest X-ray (Figure 1) revealed a dilated large intestine; however, no pneumoperitoneum was seen. Abdominal X-ray (Figure 2) revealed a coffee bean sign and dilatation of the large intestine. A flatus tube was inserted and drained around 100 ml of brown, semi-liquid faeces. Urgent colonoscopy was performed. The results showed twisting of the mucosa at 60



Fig. 1. Semi-erect AP chest radiograph demonstrates marked gaseous distension of subdiaphragmatic bowel loops, likely large bowel in origin. No free subdiaphragmatic air is identified. Findings support bowel obstruction without radiographic evidence of perforation.



Fig. 2. Supine anteroposterior abdominal radiograph demonstrating marked dilatation of the sigmoid colon with a classic coffee bean sign, consistent with sigmoid volvulus causing large bowel obstruction. Abdominal X-ray supine position anteroposterior view shows coffee bean sign and dilated large bowel.



Fig. 3. Supine anteroposterior abdominal radiograph demonstrating diffuse large bowel gaseous dilatation with a markedly distended redundant sigmoid loop, in keeping with recurrent sigmoid volvulus.

cm, with the ability to twist the area of volvulus, and proximal bowel dilatation with faeces appreciated. Endoscopic decompression was performed, and a repeat abdominal X-ray revealed faecal-loaded, dilated bowel and no coffee bean sign (Figure 3).

Following endoscopic decompression, the patient experienced partial symptomatic improvement, with gradual resolution of abdominal pain; however,

abdominal distension and constipation persisted. Repeat examination demonstrated a persistently tympanitic abdomen with reduced bowel sounds. Given the recurrent disease course and incomplete clinical resolution, the patient underwent detailed counselling regarding the indications, risks, benefits, and expected outcomes of definitive operative management. After informed consent, he agreed to proceed with exploratory laparotomy and sigmoid colectomy.



Fig. 4. Intraoperative laparotomy findings demonstrating the transition point of torsion within the sigmoid colon. The affected sigmoid segment was markedly dilated, with diffuse serosal erythema and venous congestion, accompanied by prominent engorgement of the serosal vasculature. These appearances are in keeping with recurrent sigmoid volvulus causing obstructive distension and compromised venous outflow, without overt evidence of transmural ischaemia or perforation.



Fig. 5. Gross specimen of the resected redundant sigmoid colon following definitive surgical management of recurrent Sigmoid Volvulus. Macroscopic assessment demonstrated a markedly elongated sigmoid segment measuring 45 cm in length with maximal luminal dilatation of approximately 7 cm. The bowel wall was diffusely oedematous and congested, without gross evidence of active haemorrhage, perforation, or transmural necrosis. Histopathological examination revealed prominent submucosal oedema with vascular congestion and dilated capillary channels, consistent with chronic intermittent torsion and impaired venous drainage. No features of transmural infarction, gangrene, perforation, significant acute inflammatory infiltrate, dysplasia, or malignancy were identified. Gross mucosal inspection showed no polyps, diverticular disease, ulceration, or obstructing mass lesion.

At laparotomy, a markedly redundant and dilated sigmoid colon measuring approximately 9 cm in diameter was identified (Figure 4). The small bowel and remaining colon were non-dilated and showed no evidence of inflammation. There were no signs of bowel ischaemia, perforation, or necrosis. No intra-abdominal adhesions or free intraperitoneal fluid were present.

Resection of the affected segment was performed,

with transection at the distal descending colon proximally and the distal sigmoid colon distally (Figure 5). Intestinal continuity was restored with a side-to-side colorectal anastomosis. The peritoneal cavity was irrigated, and a closed-suction drain was placed in the pelvis. The resected sigmoid specimen was labelled and sent for histopathological examination. The patient was discharged uneventfully on day 11 post-operative.

Discussion

Sigmoid volvulus represents a small but significant portion of all cases of large bowel obstruction, especially in the elderly and comorbid. Treatment of ASV with endoscopic decompression alone, with or without the insertion of a flatus tube, has been shown to have good short-term results but with a high recurrence rate, and this is reflected in our case report [6, 7]. We note, however, a considerable mortality rate in those who presented with >1 episode of ASV compared with no mortalities in those who underwent delayed surgery following a successful endoscopic detorsion. Whilst mortality is the ultimate adverse outcome from sigmoid volvulus, the significant impact on quality of life and morbidity that recurrent sigmoid volvulus has on a patient is worth considering surgery as definitive treatment. An important mention should also be given to another similar yet distinctly separate cause of abdominal pain presenting in a similar fashion that mimics ASV: colonic pseudo-obstruction [8]. Whilst the underlying pathology in ASV is mechanical, pseudo-obstruction likely represents autonomic dysfunction in the absence of any physical obstruction, although the exact pathophysiology is debated [9]. These patients may also respond well initially to endoscopic decompression; however, given they do not have the same ischaemic risk that ASV patients do, surgical intervention is not as often required and, instead, should be substituted for more conservative measures such as laxatives, intensive nursing care in the form of frequent turning or mobilisation, and a review of potential exacerbating medications. These improvements can translate to reduced mortality rates but also to fewer admissions and the requirement for fewer invasive, temporising methods of management such as decompressive sigmoidoscopy.

Endoscopic decompression is the common first-line non-operative treatment performed for selected patients with evidence of sigmoid volvulus [7] due to its lower risk and diagnostic and therapeutic properties; however, it also has its limitations in the treatment of sigmoid volvulus. As mentioned in our case report, the patient underwent four consecutive endoscopic decompressions as treatment due to a lack of thorough counselling on recurrence and patient factors related to the risk of stoma formation. Endoscopic decompression is seen clearly as not a viable treatment anymore after the first episode of recurrence; fortunately, in our case, the patient did not present with any complication that put the patient's life in danger. It is strongly suggested that conservative treatment should be performed to convert the patient from emergency status into semi-elective definitive resection surgery, which enhances

optimal surgical outcome with minimal mortality rates in cases of acute sigmoid volvulus.

Conclusion

Non-operative management of acute sigmoid volvulus is associated with a substantial risk of recurrence, resulting in cumulative morbidity and mortality with each subsequent episode. Recurrent presentations increase the likelihood of bowel ischemia, perforation, emergency surgery, prolonged hospitalization, and physiological decline. In contrast, definitive surgical management carries an acceptable complication profile, including in patients traditionally considered high risk. We therefore advocate that all suitable patients should be evaluated for early elective surgical intervention following initial decompression, to prevent recurrence and reduce the burden of avoidable complications.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this article.

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Conflict of Interests

The authors have no conflict of interest to declare.

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