


# Case Report on Rare Presentation of Sigmoid Volvulus with Perforated Appendicitis from Yekatit 12 Hospital Medical College Addis Ababa, Ethiopia

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**Abstract:** Sigmoid volvulus is one of the causes of large-bowel obstruction that is usually common in males, and the management outcome depends on the patient's clinical condition upon presentation. Open or laparoscopic surgery is the mainstay of management for sigmoid volvulus, except for some conditions where conservative management is given priority, eg, patients unfit for surgery. Rectal deflation is one of the options for conservative management for simple sigmoid volvulus for patients visiting the emergency outpatient department to optimize the patient for semi-elective or elective procedures as management for patients unfit for surgery. In our case, the patient's clinical condition on his first visit was smooth and he was diagnosed to have simple sigmoid volvulus, for which deflation was tried but failed. The patient was operated on on the third day of failed deflation, and the intraoperative finding was colonic perforation distal to the obstruction associated with perforated appendicitis. Although the colonic perforation was assumed to be due to a secondary rectal tube deflation attempt, the cause of the perforated appendicitis was not clear, ie, whether the appendicitis was primary or secondary, as well as there being no report on perforated appendicitis in common complications of sigmoid volvulus.

**Keywords:** sigmoid volvulus, appendicitis, colonic perforation

## Introduction

Sigmoid volvulus is one of the most common male emergency gastrointestinal surgical conditions. It is an abnormal twist of the sigmoid colon on its own mesenteric axis of  $>180^\circ$ . It results in obstruction of the intestinal lumen followed by abdominal distention and crampy pain, and if not managed as early as possible, obstruction of the mesenteric vessels along with the bowel causing bowel ischemia may occur and sometimes the small bowel may also become entangled in the volvulus, resulting in ileosigmoid knotting, which worsens patient outcomes.<sup>1-3</sup>

Management options and patient outcomes for sigmoid volvulus depend on several factors, of which duration of illness, age, and comorbid illness are the most frequently mentioned. Patients who present early have better outcomes and alternative management options.<sup>4-6</sup> Patients who present early and are assessed as having a viable bowel are usually managed surgically electively or semi-electively after deflation, but those patients with a possible diagnosis of complicated sigmoid volvulus need emergency surgery, and the type of the surgery depends on the patient's clinical condition.<sup>5-8</sup> There are reports of complications secondary to rectal deflation, usually with less experienced physicians. One of the complications is viscus perforation while deflation is attempted.

## Case Summary

A 67-year-old male patient presented to the emergency surgical outpatient department with a complaint of intermittent crampy abdominal pain of 2 days' duration associated with failure to pass feces, flatus, and abdominal distension. After physical examination and imaging, he was diagnosed to have large-bowel obstruction secondary to sigmoid volvulus, for which deflation was tried but failed. The patient was counseled for surgery, but refused and went home. After 3 days, the patient returned to the hospital with a worsening of his clinical conditions: multiple episodes of

vomiting, increased abdominal distension, crampy abdominal pain, and infrequent diarrhea. Three years earlier, he had had a similar complaint and rectal deflation was performed. He is also a known hypertensive patient on medication and on follow-up.

On physical examination, he was acutely sick-looking, with tachycardia of 112 bpm, borderline hypotension of 90/60 mmHg, febrile, normal breathing pattern, and dry buccal mucosa. He had a distended abdomen with direct and rebound tenderness all over the abdomen with hyper-tympanic on percussion and an empty rectum. There was no other pertinent system finding. On investigation, his white blood count was 4300, neutrophil count 95%, hemoglobin 12 mg/dL, and platelet count 118,000. A plain abdominal X-ray showed sigmoid volvulus with pneumoperitoneum. After the patient was resuscitated, vital signs were corrected with adequate urine output. With his informed written consent, he was taken to the operating theater (OT) based on an impression of generalized peritonitis secondary viscus perforation secondary to gangrenous sigmoid volvulus. The abdomen was cleaned with povidone–iodine and draped, then the peritoneal cavity was entered through an extended midline incision. The intraoperative finding was about 300 mL thin pus mixed with gastrointestinal content, perforated sigmoid colon distal to the obstruction, 270° clockwise grossly viable volvulated sigmoid colon, perforated appendicitis at the midshaft, and grossly distended proximal large- and small-bowel loops.

After resection of the volvulated part and the perforated segment of the bowel, an appendectomy was performed, then the pus sucked out. Retrograde and antegrade bowel decompression was done in a controlled manner, then the whole peritoneal cavity was washed with warm saline. After a Hartmann colostomy was done and hemostasis secured, the abdomen was closed in layers. The patient was extubated on the table and transferred to the postanesthesia care unit with stable vital signs. The first three postoperative days were uneventful, but on the fourth day, partial wound dehiscence with hypoalbuminemia (serum albumin 1 g/dL) was diagnosed and wound care and a high-albumin diet ordered. On the fifth postoperative day, the patient was taken to the OT after written consent for the diagnosis of complete wound dehiscence with bowel evisceration. About 350 mL thin pus with dilated small-bowel loops and collapsed large bowel with adhesion between bowel loops were found. Adhesion lysis, lavage, and abdominal closure with a silo bag were performed. Subsequent wound care with a high-protein diet was maintained, and his serum albumin corrected as the wound became granulated. On the 83rd day from the the first operation, he was taken to the OT after written informed consent and a split-thickness skin graft done for an indication of a postsurgical wide abdominal wound. He finally improved and was discharged on his 110th postoperative day with planned colostomy closure.

## Discussion

Patients with a large-bowel obstruction may present the complication of viscus perforation. The most common causes are ischemic perforation secondary to attempts to rectal tube deflation, overinflation of air into an obstructed colon, and persistent anal irrigation for obstructed large bowel. It is not rare in developing countries where there is inadequate investigation, especially for subclinical ischemic bowel segments, which can be easily fragile to rectal tube deflation. Colonic perforation from a rectal tube tip is not uncommon, especially when attempted by a less experienced physician applying inappropriate force to an edematous bowel.<sup>9,10</sup> In our case, rectal tube deflation was attempted, so perforation by rectal tube deflation can be a complication.<sup>11</sup> The site of bowel perforation was distal to the obstruction so the cause for the perforation to be from rectal tube deflation attempt could be high.

In our case, the patient also had perforated appendicitis at the midshaft with a viable proximal segment of the appendix. This did not fit with a complication of peritonitis, which usually results in a secondary inflamed appendix if infected and also usually involves the whole segment of the appendix. No cases have been reported that support the possibility of perforated appendicitis secondary to sigmoid volvulus. There are few case reports of large-bowel obstruction secondary to appendiceal mucocele acting as a lead point and mechanical obstruction due to complicated appendicitis. Otherwise, there has been no report of large bowel volvulus due to appendicitis or any report showing large-bowel obstruction resulting in perforated appendicitis.<sup>11,12</sup>

## Conclusion

The simultaneous finding of perforated appendicitis in patients operated on for sigmoid volvulus is rare, with no reported cases before this report, so the pathological mechanism(s) behind this co-occurrence needs further studies. Colonic perforation

following rectal tube deflation attempts by less experienced physicians is not uncommon, so for any sign of peritonism after a rectal tube deflation attempt, emergency laparotomy should be considered as early as possible.

## Acknowledgments

The authors acknowledge everybody who participated in the management of the patient to achieve the best outcome for him, especially the residents. We also extend our deepest gratitude to the college administration for their permission to use the patient's medical record.

## Consent

Institutional approval was not required for the publication of these case details. We obtained documented and witnessed informed verbal consent from the patient to publish this case report.

## Disclosure

The authors report no conflicts of interest in this work.

## References

1. Lou Z, Yu E-D, Zhang W, Meng R-G, Hao L-Q, Fu C-G. Appropriate treatment of acute sigmoid volvulus in the emergency setting. *World J Gastroenterol*. 2013;19(30):4979. doi:10.3748/wjg.v19.i30.4979
2. Wertkin MG, Aufses AH Jr. Management of volvulus of the colon. *Dis Colon Rectum*. 1978;21(1):40–45. doi:10.1007/BF02586545
3. Kotisso B, Bekele A. Ilio-sigmoid knotting in Addis Ababa: a three-year comprehensive retrospective analysis. *Ethiop Med J*. 2006;44(4):377–383.
4. Bhuiyan M, Machowski Z, Linyama B, Modiba M. Management of sigmoid volvulus in Polokwane-Mankweng Hospital. *South Af J Surgery*. 2005;43(1):17–19.
5. Madiba T, Thomson S. The management of sigmoid volvulus. *J R Coll Surg Edinb*. 2000;45(2):74–80.
6. Maddah G, Kazemzadeh GH, Abdollahi A, Bahar MM, Tavassoli A, Shabahang H. Management of sigmoid volvulus: options and prognosis. *J Coll Physicians Surg Pak*. 2014;24(1):13–17.
7. Jumbi G, Kuremu R. Emergency resection of sigmoid volvulus. *East Afr Med J*. 2008;85(8):398–405. doi:10.4314/eamj.v85i8.9657
8. Mulugeta GA, Awlachev S. Retrospective study on pattern and outcome of management of sigmoid volvulus at district hospital in Ethiopia. *BMC Surg*. 2019;19(1):1–5. doi:10.1186/s12893-019-0561-1
9. Sosna J, Blachar A, Amitai M, et al. Colonic perforation at CT colonography: assessment of risk in a multicenter large cohort. *Radiology*. 2006;239(2):457–463. doi:10.1148/radiol.2392050287
10. Kamar M, Portnoy O, Bar-Dayana A, et al. Actual colonic perforation in virtual colonoscopy: report of a case. *Dis Colon Rectum*. 2004;47(7):1242–1246. doi:10.1007/s10350-004-0572-5
11. Opreanu RC, Sobinsky J, Basson MD. Appendicitis and benign appendiceal mucocele presenting as large bowel obstruction. *J Gastrointestinal Surgery*. 2013;17(3):609–610. doi:10.1007/s11605-012-2054-8
12. Croome R, Knox J. Large Bowel Obstruction in Acute Appendicitis. *Can Med Assoc J*. 1954;70(6):681.

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