

Emergency Surgical Management and Enhanced Recovery of Complicated Sigmoid Volvulus in an Octogenarian: A Case Report and Literature Review

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ABSTRACT

Sigmoid volvulus (SV) is a potentially deadly surgical emergency, defined as the axial torsion of the sigmoid colon around its mesenteric root. It predominantly occurs in the extreme elderly and frail population and is typically diagnosed as a rapidly progressive closed-loop bowel obstruction. In octogenarians, the challenge in controlling this patient condition is weighing the urgent necessity for mechanical decompression versus the intense perioperative morbidities of emergency laparotomy. In addition, incorporating Enhanced Recovery After Surgery (ERAS) protocols into emergency, contaminated colorectal procedures is an ongoing area of exploration with potential for minimizing hospital time. A female (age 80 years) with a five-day history of progressive mechanical bowel obstruction, exacerbated by an outpatient misdiagnosis, treated iatrogenically with prokinetics and stimulant laxatives. Imaging revealed a massive SV with a distinctive "coffee bean" characteristic. Emergency laparotomy showed a twisted 1080-degree dilated sigmoid colon—successful performance of a Hartmann's procedure (HP). Postoperative care was provided using a modified ERAS regimen, enabling extremely rapid mobilization, immediate enteral feeding, and early discharge on postoperative day 3. Emergency HP provides a safe, definitive solution in geriatric patients with severe multi-turn torsion and physiological vulnerability. This patient demonstrated a great postoperative recovery and underscores the viability and clinical benefit of applying the principles of ERAS to emergency geriatric colorectal surgery.

KEYWORDS: Sigmoid Volvulus; Enhanced Recovery After Surgery (ERAS); Hartmann's Procedure; Whirl Sign; Coffee Bean Sign.

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INTRODUCTION

Colonic volvulus is a severe anatomical disaster characterized by the abnormal twisting of a segment of the large intestine along its mesenteric attachment, resulting in a closed-loop obstruction (1). The sigmoid colon is particularly susceptible to this phenomenon. In Western countries, SV is primarily a geriatric pathology closely related to physiological decline, chronic institutionalization, and intractable constipation, both of which elongate the sigmoid loop and constrict its mesenteric pedicle (2).

In the elderly, the clinical entity is commonly insidious with a gradual appearance of absolute constipation and abdominal distension on presentation (8). In making a diagnosis, multidetector Computed Tomography (CT), which has a near

100% sensitivity based on identifying the "whirl sign" and the "coffee bean" sign (5)

For SV features, it is the hallmark tool for clinical diagnosis. In uncomplicated SV, endoscopic decompression is the first line of therapy (9); however, urgent laparotomy is essential only when definitive ischemia, perforation, or failed detorsion is indicated (10). The surgical decision matrix is complex and can be divided into Resection and Primary Anastomosis (RPA) and Hartmann's Procedure (HP) (3). Adding to this complexity is the recovery stage following surgery. Lately, the translation of Enhanced Recovery After Surgery (ERAS) protocols into emergency general surgery has led to a paradigm shift in medicine. It appears highly

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successful in blunting metabolic stress response and improving recovery in frail patients (4).

CASE REPORT

An 80-year-old female was admitted to the emergency surgical service on April 25, 2026. Her background was entirely negative for chronic degenerative diseases, previous surgery, or allergies. The illness started quietly, on April 20, 2026, with persistent constipation and colicky abdominal pain. By April 22, symptoms deteriorated and were accompanied by unbearable nausea and vomiting along with numerous episodes of gastrobiliary vomiting with complete stopping of fecal evacuation as well as flatus. Oral sodium picosulfate (Anara) and metoclopramide 10 mg q8 h were initially prescribed by an outpatient physician for the patient. We found no clinical improvement, and she presented to our hospital.

The patient arrived in a wheelchair at admission, alert and oriented, but her face showed signs of pain and groaning. Upon taking vital signs and physical examination, significant mucosal pallor and mild to moderate dehydration (++/+++) were noted. Abdomen was grossly distended, tense, tympanic to percussion, peristalsis reduced, and struggle sounds were noted. Palpation was associated with intense, diffuse pain with no rigid peritoneal guarding. Capillary refill was 2 seconds, with preserved strength in the limbs without edema. Basic abdominal CT scan with simple and contrast-enhanced scan confirmed a massive intestinal occlusion secondary to SV. The CT scout image showed the classic “coffee bean” sign, characterized by a grossly dilated, gas-filled sigmoid colon within the pelvis (Figure 1). The coronal CT images gave an excellent view of the large mechanical distension of the twisted sigmoid loop (Figure 2). In addition, axial CT sections showed a 'whirl sign,' which describes the skewed mesentery and engorged vessels at the torsion site (Figure 3). An inserted nasogastric (NG) tube yielded 40 cc of gastrobiliary content. A urinary catheter was placed, and an empty ampulla (digital rectal examination). In view of the remarkable 5-day course and radiological profile, she was taken to the operating room urgently.



Figure 1: CT scout radiograph demonstrating the "coffee bean" sign, a classic finding of sigmoid volvulus formed by a massively dilated loop of large bowel.



Figure 2: Coronal computed tomography (CT) image revealing the severe, abnormal distension of the twisted sigmoid colon occupying the abdominal cavity.

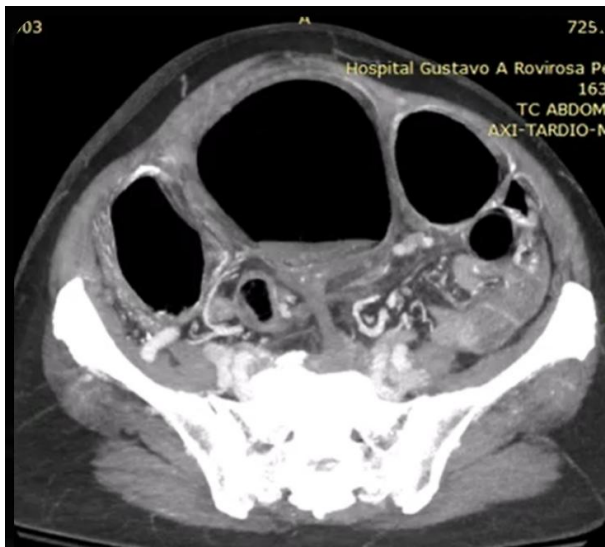


Figure 3: Axial computed tomography (CT) image showing the pathognomonic mesenteric "whirl sign," indicating the torsion of the bowel and its mesenteric vessels.

Midline laparotomy was carried out under general anesthesia. In the site of surgery, there was scant inflammatory fluid and a massively dilated, tense, and hyperemic sigmoid colon, which completely monopolized the surgical site (Figure 4). The sigmoid had been twisted 1080 degrees (three completed, continuous turns) around its mesentery. The surgical team did the manual anti-clockwise detorsion. Owing to extreme redundancy and a high risk for microvascular mucosal compromise, electrocautery and 2-0 silk ligatures excised about 25 cm of the sigmoid colon. The macroscopic surgical specimen showed pronounced luminal dilation and venous congestion consistent with an acute closed-loop obstruction (Figure 5).

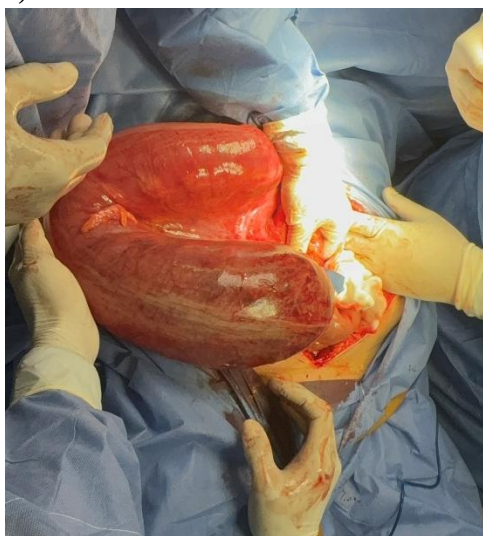


Figure 4: Intraoperative photograph demonstrating a massively dilated and hyperemic sigmoid colon immediately upon opening the abdominal cavity.



Figure 5: Macroscopic view of the resected surgical specimen, showing the highly distended and congested sigmoid colon segment.

Due to the emergency and the patient's advanced age, an HP was performed. The rectal stump was closed with a two-layer technique (Greek-pattern and Lembert sutures with 2-0 Vicryl). The end colostomy was externalized through the left flank and matured to the skin. The abdominal wall was closed in layers. The operative time was 2.5 hours, and the estimated blood loss was 50 cc.

A modified ERAS protocol was aggressively instituted postoperatively (7). The NG tube and urinary catheter were removed immediately following surgery. The patient was treated with multimodal, opioid-sparing analgesia. A clear liquid enteral diet was started after the patient was awake on Postoperative Day 0, and the patient tolerated it flawlessly. On Postoperative Day 1, supervised ambulation was started. By Postoperative Day 2, the patient canalized flatus with viable colostomy output. As a result of her excellent clinical course, she was discharged on April 28, 2026 (72 hours post-surgery) with an outpatient follow-up appointment.

DISCUSSION

This clinical description illustrates the deep diagnostic and surgical challenges of managing complex SV in octogenarians. SV is responsible for a significant fraction of colonic obstructions, for which its etiology in the Western world is heavily associated with gut aging due to the physiological decomposition of the older intestine (2). Herein, the outpatient use of stimulant laxatives plus prokinetics for a previously unknown mechanical closed-loop obstruction proved highly damaging since it imposes severe proximal peristalsis against an invariable mechanical distortion, enhancing, if not increasing, intraluminal pressure

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exponentially and risking irreversible ischemia (1). In this regard, the definitive diagnosis is based entirely on excellent radiological imaging (11). Although standard radiographic imaging may demonstrate the classic "coffee bean" sign, CT imaging has become established as the gold standard (5).

CT has a sensitivity of up to 100%, noting that it can reveal very specific cross-sectional signs, such as the "whirl sign," that characterize the torsion and assess bowel viability (5). Endoscopic detorsion is universally advocated as a first-line therapeutic intervention in uncomplicated cases of SV (9). Endoscopy, however, is a temporizing operation with an infamously high recurrence rate (1). Since this patient had undergone a five-day evolution, dehydration, and an acute 1080-degree torsion as shown by CT, she had appropriately been placed directly on emergency laparotomy (12).

In the emergency geriatric setting, the choice between RPA and HP remains highly debated (13). RPA can return intestinal continuity in a single stage. However, performing an anastomosis in a field without any preparation, contaminated to the point that it is extremely dangerous in a physiologically exhausted octogenarian, carries a high risk of anastomotic leak (10). HP, by contrast, always emphasizes immediate patient survival, but it guarantees total absence of any risk of leak (3). In gangrenous SV, the most recent strong meta-analyses found an overall mortality rate of approximately 15% after RPA and 19% after HP, with no statistically significant difference in mortality between the two techniques (13). But HP always produces shorter initial hospital stays (6). Considering this patient's very old age and grossly excessive multi-turn torsion, HP was the safest damage-control method. Most dramatically, this patient showed a complication-free discharge within 72 hours after laparotomy. The fact of this speedy convalescence was due to a revised ERAS protocol (14).

ERAS was often resisted in the emergency sector due to concerns about potentially worsening complications (4). In contrast, we found that this study performed a single, concurrent, and effective ERAS protocol to reduce the risk of further complications in patients with postoperative debilitation. Yet recent evidence indeed supports that the incorporation of ERAS in older adults with emergency colorectal surgery leads to physiologically advantageous effects (7). By insisting on early NG tube detachment, immediate enteral feeding, opioid-sparing analgesia, and aggressive mobilization, ERAS effectively dampens the extreme surgical stress response (15). Research demonstrates that ERAS implementation in elderly emergency laparotomies accelerates functional recovery and shortens hospitalization, without increasing readmissions (7).

CONCLUSION

Complex SV in older adults requires timely diagnosis using CT imaging for the diagnosis of severe mechanical torsion. Although RPA is suitable for stable patients, emergency HP

is an exceptionally safe, definitive surgical option for frail octogenarians, minimizing the risk of anastomotic leak and improving immediate survival. Finally, strict ERAS protocols are being applied to emergency procedures in acute settings, a transformative innovation. Aggressive physiological rehabilitation, such as early device removal and mobilization, is fundamental to optimizing survival and accelerating functional recovery in at-risk surgical populations.

REFERENCES

- I. Tian BW, Vigutto G, Tan E, et al. WSES consensus guidelines on sigmoid volvulus management. *World J Emerg Surg.* 2023;18(1):34.
- II. Kumar HR. Sigmoid Volvulus: Current Management. *Applied Healthcare Science.* 2026;12:200-210.
- III. Kazem Shahmoradi M, Khoshdani Farahani P, Sharifian M. Evaluating outcomes of primary anastomosis versus Hartmann's procedure in sigmoid volvulus: A retrospective-cohort study. *Ann Med Surg (Lond).* 2021;62:160-163.
- IV. Ahmed A, Khalid S, Sharif G, et al. Efficacy of Enhanced Recovery After Surgery (ERAS) Protocols in Emergency Colorectal Surgery: A Meta-Analytical Comparison With Conventional Care in Terms of Outcomes and Complications. *Cureus.* 2024;16(10):e71630.
- V. Levsky JM, Den EI, DuBrow RA, Wolf EL, Rozenblit AM. CT findings of sigmoid volvulus. *AJR Am J Roentgenol.* 2010;194(1):136-143.
- VI. Pattanayak S, Saha D, Bara BK, Nayak SK. Comparison of primary resection and anastomosis with Hartmann's procedure in the management of acute sigmoid volvulus. *Int Surg J.* 2023;10(5):155-160.
- VII. Mohamed W, Shehab AS, El-Sayes I, Seif-Eldeen MIA. Implementation of enhanced recovery after surgery (ERAS) protocols in elderly patients undergoing emergency surgery: a comparative analysis. *BMC Gastroenterol.* 2025;25(1):723.
- VIII. Muchemi KAM, Schouame E, Opot EN, Ojuka D. Clinical Presentation, Operative Management, and Outcomes of Patients with Sigmoid Volvulus: A Retrospective Audit. *Ann Afr Surg.* 2026;23(1):9-17.
- IX. Negm S, Farag A, Shafiq A, Moursi A, Abdelghani AA. Endoscopic management of acute sigmoid volvulus in high-risk surgical elderly patients: a randomized controlled trial. *Langenbecks Arch Surg.* 2023;408(1):338.
- X. Alavi K, Poylin V, Davids JS, et al. The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Management of Colonic

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- Volvulus and Acute Colonic Pseudo-Obstruction. *Dis Colon Rectum*. 2021;64(9):1046-1057.
- XI. Atamanalp SS, Disci E, Peksoz R, Atamanalp RS, Atamanalp CT. Management of sigmoid volvulus: a literature review. *Ibnosina J Med Biomed Sci*. 2023;16:5-9.
- XII. Deresse T, Tesfahun E, Gebreegziabher ZA, et al. Perioperative Adverse Outcome and Its Predictors After Emergency Laparotomy Among Sigmoid Volvulus Patients: Retrospective Follow-Up Study. *Open Access Emerg Med*. 2023;15:401-410.
- XIII. Awedew AF, Asefa Z, Enkoye BD. Comparing Resection and Primary Anastomosis versus Hartmann's Stoma on the Mortality and Morbidity of Gangrenous Sigmoid Volvulus: Systematic Review and Meta-Analysis. *Ethiop J Health Sci*. 2023;33(6):1087-1096.
- XIV. Zese M, Finotti E, Cestaro G, et al. Emergency surgery in the elderly: Does the attitude change cause laparoscopy? A 2-year prospective follow-up in 120 consecutive patients, compared with NELA. *World J Emerg Surg*. 2021;16(1):30.
- XV. Shang Q, Chen Y, Li Y, et al. Enhanced recovery after surgery in emergency resection for obstructive colorectal cancer: a systematic review and meta-analysis. *Int J Colorectal Dis*. 2020;35(8):1453-1461.