Case Report

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Sigmoid Volvulus in a 28-Year-Old Female: A Case Report

Addis Yeshitila K

General Surgeon, Hakim Gizaw Hospital, Asrat Woldeys Health Science, Debre Berhan University, Debre Berhan, Ethiopia.

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***Correspondence:** Addis Yeshitila K, General Surgeon, Hakim Gizaw Hospital, Asrat Woldeys Health Science, Debre Berhan University, Debre Berhan, Ethiopia.*

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ABSTRACT

Background: *Sigmoid volvulus is a prevalent cause of large bowel obstruction in our setting, yet it remains uncommon in females when compared to adult males. Typically, sigmoid volvulus presents acutely with recurrent episodes, predominantly affecting individuals from rural areas. The condition is initially diagnosed through clinical evaluation and confirmed via abdominal x-ray, which reveals a distended colon with the characteristic imaging sign resembling a bean shape. In my experience, sigmoid volvulus in females is a rare occurrence, and this marks the second case I have treated using rectal tube deflation and sigmoidectomy.*

Case Summary: *This particular case involved large bowel obstruction, with a prior history of rectal tube deflation occurring for the third time. Consequently, I admitted the patient after deflation in the emergency department, and a sigmoidectomy with primary anastomosis was performed on the third day of admission, accompanied by mechanical and intravenous antibiotic therapy.*

Method: *The case report was prepared after reviewing the medical charts detailing her history, physical examination, imaging studies, and interventions.*

Significance: *Sigmoid volvulus continues to be a potential cause of recurrent and acute abdominal obstruction in young females.*

Conclusion: *Sigmoid volvulus is one of the common causes of large bowel obstruction with a common prevalence in areas where a high-fiber diet is common, such as Ethiopia. This problem of sigmoid can occur in elders, adults, and both sex.*

Keywords: *Large bowel obstruction, Sigmoidectomy, Bowel preparation, Colonoscopy, colostomy, Anastonosis*

Introduction

Sigmoid volvulus refers to an abnormal twisting of the sigmoid colon around its mesenteric axis, exceeding 180° [1]. The geographic distribution of this condition outlines a "volvulus-belt" that encompasses Africa, Asia, the Middle East, Eastern Europe, and Latin America. In these regions, sigmoid volvulus accounts for 20–50% of large bowel obstructions, with figures approaching 80% in Ethiopia and the Andes [2].

In our study, the sex ratio was 5.4/1, which aligns with findings documented in existing literature. The wider pelvis and the often "brachymesocolic" (broader than long) sigmoid in females may elucidate these observations [3].

While sigmoid volvulus is commonly seen in adults, it can manifest at any age, including in neonates. In developing nations, the average age of occurrence ranges from 40 to 60 years, whereas in developed countries, it is typically between 60 and 70 years. In adolescents, sigmoid volvulus is infrequent, leading to a higher likelihood of misdiagnosis or delayed diagnosis [4].

The clinical manifestations are nonspecific, and an accurate diagnosis relies heavily on a heightened level of suspicion. Sigmoid volvulus usually presents acutely with symptoms including abdominal pain, distension, and vomiting, whereas the chronic variant may develop gradually, marked by ambiguous signs and symptoms at the time of diagnosis [5].

Case Report

This is a-28-years-old female presented with recurrent bowel obstruction who undergone rectal deflations for third time and currently present for the fourth time with abdominal distention's, failure to pass of six hours and abdominal cramp but no vomiting. No previous abdominal surgery or trauma and pregnancy test done and negative, no rectal bleeding history.

Clinical Findings

Her vital signs are normal range with pulse rate of 84 beats per minute. No abdominal tenderness with visible bowel loops. No scar. Blood count (see table 1) and plan abdominal X-ray (See Figure 1) performed.

Diagnostic Assessment: She was diagnosed with large bowel obstruction causing by sigmoid volvulus.

Therapeutic Intervention: She is counselled for surgery, she undergone emergency laparotomy with sigmoidectomy for redundant sigmoid after derotation of viable sigmoid (See Figure 2) and recto colic anastomosis.

Follow-up and Outcomes: She is discharged on 4th post-operative period and she came on follow up with clean surgical wound with improved symptoms and skin stitches removed on 7th day and no complains for one month follow-up.

This section should present a clear and comprehensive story of what happened, how it was managed, and the outcomes.

Diagnostics tests

Blood cell count

Table 1: The blood cell count with result and interpenetration for this case.

Test	Result	Range	Interpenetration
WBC	7.	4-10	Normal
Hgb	13	12-14	Normal
HCT	43	33-45	Normal
PLT	320	150-500	Normal

Patient Perspective

The patient is improved and recovered from surgery soon and she satisfied with the care she was getting and happy on the followup.

Discussion

The cause of sigmoid volvulus is a redundant loop of sigmoid that twists on its mesenteric pedicle by more than 180 degrees, leading to luminal obstruction and impaired mesenteric blood flow, which

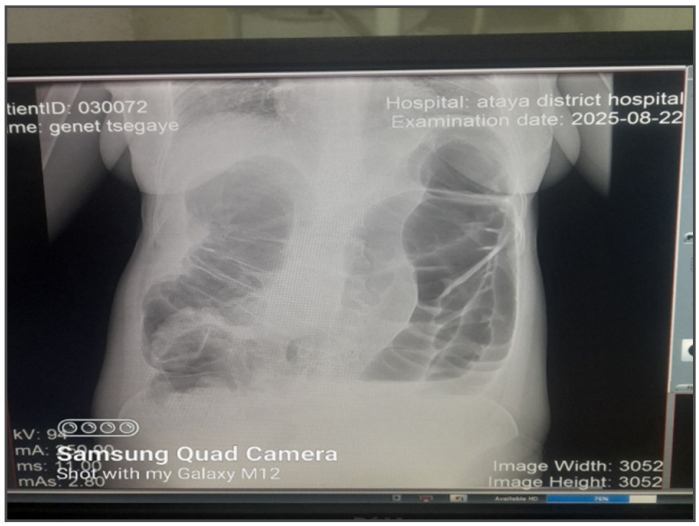

Figure 1. *This is the picture of plain abdominal X-ray taken for the patient before surgery for redundant sigmoid with sigmoid volvulus.*

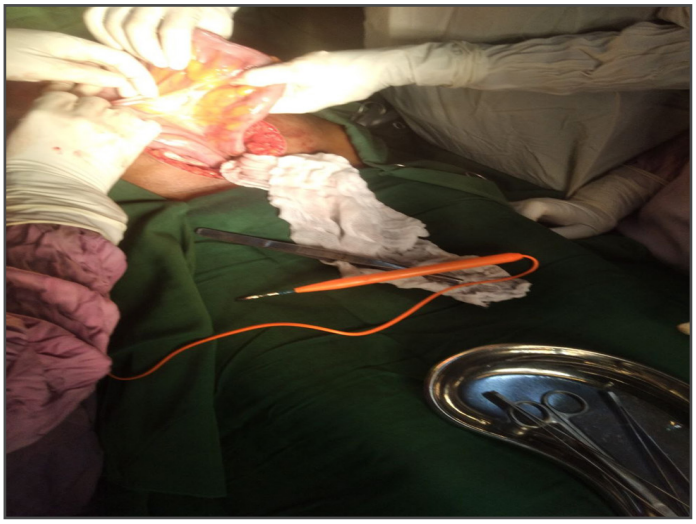

Figure 2. *This picture taken intra-opertive to show long and narrow mesentric base of sigmoid colon in a 28 years old female.*

can result in intestinal blockage and may progress to hemorrhagic perforation, peritonitis, septic shock, and potentially death [4].

Several risk factors have been associated with the onset of sigmoid volvulus, including anatomical redundancies in the mesentery, malfixation of the mesentery, Hirschsprung's disease, chronic constipation due to a high-fiber diet, a sedentary lifestyle, and neurological disorders [6].

The clinical presentation may be either subacute progressive or acute fulminant volvulus, characterized by severe sudden abdominal pain or vague symptoms in the subacute form, as described by Hinshaw and Carter [1]. Physical examination findings are nonspecific, and diagnosis is based on a high clinical suspicion supported by complementary imaging studies such as radiographs and CT scans. The case presented exhibited an insidious onset with vague abdominal symptoms, including mild distension and

obstipation, accompanied by late episodes of vomiting. In our case with resource-limited setting for CT, a radiograph revealed distended bowel loops, which did not display the typical coffee bean sign associated with sigmoid volvulus (See Figure 1).

Management begins with resuscitation and detorsion of the sigmoid volvulus, which can be performed non-operatively through methods such as rectal tube placement, endoscopic reduction via sigmoidoscopy, barium enema, and proctoscopy [7]. All these non-operative techniques carry a risk of perforation and are conducted in patients without signs of peritonitis or ischemic bowel. Approximately 40 to 50% of patients will not experience recurrence following non-operative treatment.

Surgical intervention for children and adolescents includes procedures such as sigmoid colectomy, mes-sigmoidopexy, sigmoidectomy, Hartmann's procedure, total colectomy, laparotomy detorsion, and resection with primary anastomosis [4,7,8]. Recurrence occurs in approximately 35% of cases following detorsion, whereas it has not been documented after sigmoidectomy [3].

Conclusion

In the case of sigmoid volvulus (SV), flexible endoscopic detorsion is the primary approach for managing uncomplicated patients (those without bowel gangrene, perforation, or peritonitis). However, emergency surgery may be required for certain patients exhibiting adverse conditions previously mentioned or in instances where endoscopic detorsion fails. The likelihood of SV recurrence can reach as high as 90%, with a mortality risk of up to 35% for patients who undergo detorsion alone.

While procedures such as sigmoidopexy, mesopexy, mesoplasty, extraperitonealization, and percutaneous endoscopic sigmoidopexy are recognized for their ability to reduce recurrence, sigmoidectomy remains the most effective method for preventing recurrence.

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Conflict of Interest and Funding

The author declares no conflict of interest and received no specific funding for this work.

Ethical Clearance

Not applicable

Patient consent

This work has patient written consent and the author will submit it up on request by the journal editors.

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