



CASE REPORT

Small Bowel Volvulus: A Rare Case Report

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Abstract

Adult small intestinal volvulus is a rare entity and even more rarely, the ileum undergoes torsion without known predisposing factors. This presents as an acute abdomen. Although a rare condition, it should be kept in mind in cases of abdominal pain with or without intestinal obstruction. Since there is no specific laboratory or routine radiological finding in these cases, a CT scan abdomen is the investigation of choice. Small intestinal volvulus exists as two types according to etiology. Emergency surgical intervention is the treatment of choice. Delay and missed diagnosis have serious consequences with increased morbidity and mortality due to bowel ischemia. Here we report a case of a 32-year-old male having no predisposing factors presenting with abdominal pain, nausea, and vomiting. Physical examination and investigations were unremarkable. The patient was managed by urgent surgical intervention after having confirmed the diagnosis peroperatively as small bowel volvulus.

Keywords: Abdominal pain, Small bowel volvulus, Intestinal obstruction, Midgut volvulus, Bowel necrosis, Whirlpool sign.

Introduction

The word volvulus originates from the Latin word 'volvere' which means to turn or roll. Hence, midgut volvulus means twisting or rolling of the small intestine. Clinical findings in cases with small intestinal volvulus are not specific. Patients have clinical findings of small intestinal obstruction or ischemia that are usually sudden in onset. Central abdominal pain is almost always present.¹ This makes it important to differentiate the two entities and manage them accordingly. Routine laboratory and radiological investigations are not useful in diagnosis, but CT scan abdomen is the investigation of choice. Small intestinal volvulus once suspected or confirmed, needs urgent surgical intervention to prevent serious consequences related to bowel ischemia and necrosis.

Case Presentation

A 32-year-old male with insignificant past medical and surgical history presented to our 24h department with acute onset of abdominal pain radiating to the back, nausea and vomiting that started early in the morning. Physical examination revealed normal vital signs. Non distended abdomen with generalized tenderness and guarding over periumbilical area. Systemic review was unremarkable. Initially, the patient was treated conservatively with pain medications. Laboratory and radiological tests were suggested. Despite strong analgesia, the pain increased in severity. Blood tests were relatively unremarkable with a white cell count of 7880 per microliter, and hemoglobin 14.5 gram per decilitre. Platelets 182000 per microliter, C-reactive protein 1.7 milligrams per decilitre, Urea, electrolytes

and liver function tests were within normal range. Abdominal X-ray erect & supine views showed dilated small bowel loops as seen in Figure 1. Ultrasound abdomen revealed fluid filled bowel loops on both sides of the lower abdomen likely small bowel enteritis was considered. A contrast-enhanced CT Scan Abdomen as shown in Figure 2 showed acute angulation of mid jejunum in the right upper quadrant with focal short segment dilatation of the proximal loop measuring 37 mm in diameter with minimal free fluid in the pelvis due to stricture with adhesion or intrabdominal band.



Figure 1: X-Ray abdomen showing centrally dilated loops.

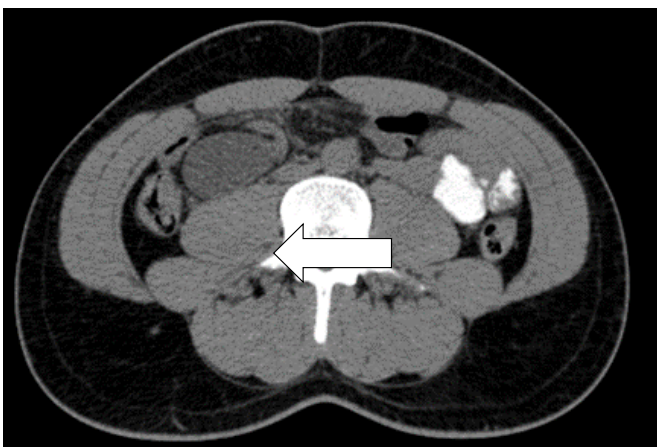


Figure 2: CT scan abdomen. Arrow indicates angulation of the small bowel.

As there was no relief in pain, we planned for Laparoscopic +/- Open Surgery after obtaining informed consent. A diagnostic laparoscopy was performed. We found collapsed jejunal and distal ileal loops with dilated and twisted mid ileal loops

as indicated by the arrow in Figure 3. Laparoscopic untwisting was done. The entire bowel was examined from duodeno-jejunal junction to caecum. There was no mechanical obstructive lesion. The twisted loops of ileum were about 3 feet proximal to ileocecal area as seen in Figure 4. Contents were milked from above, down to cecum. Reactive mesenteric lymph nodes were found and taken for histopathology. To reconfirm the findings and to recheck the area of twisting a small lower midline incision was made, and the small bowel was examined for any intraluminal or intramural lesion.

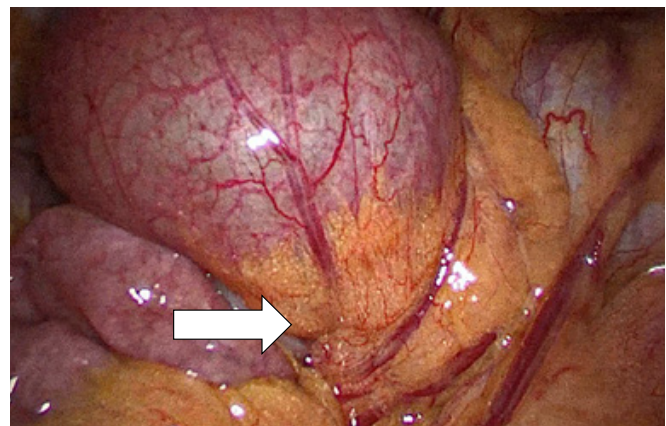


Figure 3: A diagnostic laparoscopy findings of jejunum and ileum. Arrow indicates twisted mesentery with dilated proximal & collapsed distal small bowel loops.

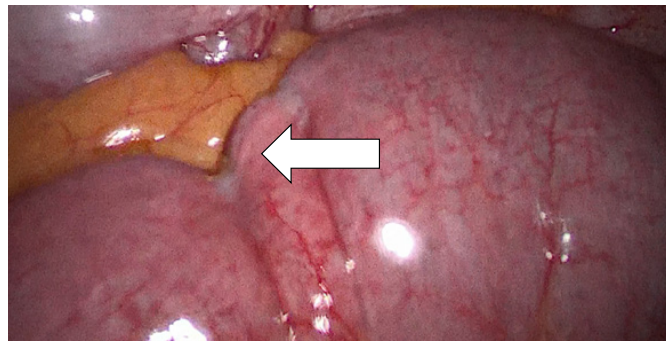


Figure 4: Small bowel loop. Arrow indicates the whitish area after untwisting.

Patient had an uneventful hospital stay and was discharged in a stable condition on the second post-operative day.

Follow up and outcome: On the sixth post-operative day, the patient presented with mild abdominal pain and vomiting. Plain abdominal X-Rays revealed distended small intestinal loops due to post-operative paralytic ileus. This was managed conservatively, and patient was discharged in a stable condition the next morning.

Discussion

The volvulus of small intestine is an uncommon cause of small intestinal obstruction.² It is categorized as primary and secondary depending on etiology.³ The former category occurs without predisposing or identifiable anatomical abnormality while in the later category the intestine is twisted around an underlying point of fixation as the loop fills with fluid peristalsis exacerbating the torsion which may be caused by bands, postoperative adhesions, or tumors. There are other factors like constipation, one of the identified risk factors in colonic volvulus but there is a lack of evidence to support in the cases of small intestinal obstruction.⁴ Prolonged fasting in the month of Ramadan followed by heavy meals is a common reason for volvulus in muslims.⁵ In our case we did not find any causative agent so we will label it as primary small intestinal volvulus. The approach to diagnose this entity of small intestinal obstruction should include a careful history and physical examination with routine laboratory tests and radiological examination.⁶ Computed tomography is the gold standard diagnostic modality with the whirlpool sign as the hallmark of volvulus.⁷ Management consists of supportive care with nasogastric tube decompression of bowel, foleys catheterization, fluids and electrolytes maintenance, prevention of venous thromboembolism and intensive care therapy if needed.³ Small bowel volvulus is rare but has a mortality rate of 9% to 35% possibly up to 100% if associated with intestinal necrosis. Urgent surgical exploration is the treatment of choice to prevent vascular complications as recommended by the world society of emergency surgery in international guidelines.^{8,9} In this era, laparoscopic surgery plays an important role in diagnosing as well as managing the cases of small intestinal volvulus though exploratory laparotomy was the conventional method used to manage these type of cases since long time.² To prevent recurrence in cases of a primary variety of small intestinal volvulus there is controversy about whether simple untwisting or intestinal resection and fixation will provide the long-term results.² There is lack of data to support which modality is the gold standard. In cases of abdominal pain with obstruction in the virgin abdomen, clinicians must keep in mind the

possibility of small intestinal volvulus. Further research is needed for the ideal surgical method to manage these cases as surgeons have a very low threshold for operative investigation.

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