

## Small Bowel Volvulus: A Rare Complication Of Sigmoid Volvulus: Case Report

Chandan Kumar Samal<sup>1</sup>, Hikeno K Yeptho<sup>2</sup>, Akash Kumar Gupta<sup>3</sup>,  
Manoj Kumar Das<sup>4</sup>

1-Junior Resident (academic) General Surgery,RIMS,Ranchi,Jharkhand.(Corresponding author)

2-Junior Resident (academic) General Surgery,RIMS,Ranchi,Jharkhand.

3-Junior Resident (academic) General Surgery,RIMS,Ranchi,Jharkhand.

4-Junior Resident (academic) General Surgery,RIMS,Ranchi,Jharkhand.

---

### Abstract

Small gut volvulus is a rare clinical entity in adult and patients usually present with recurrent abdominal pain after taking food in the surgical emergency. Often patient develops the features of intestinal obstruction which may or maynot need any surgical intervention. Here we present a 40 years old male patient who presented to us with similar condition with a background of sigmoid volvulus for which he underwent resection and anastomosis 3 years back.

---

Date of Submission: 27-04-2020

Date of Acceptance: 10-05-2020

---

### I. Introduction

Small bowel volvulus (SBV) refers to the abnormal twisting of a loop of small bowel around the axis of its own mesentery [1]. Recurrent, intermittent periumbilicorepigastric pain occurring after ingestion of a meal with severity out of proportion to clinical examination is an important clinical finding [2,3]. SBV can be classified as primary or secondary SBV according to the cause. Primary SBV is defined as torsion of a segment of small bowel at the mesentery basis without any evident underlying cause [4]; secondary SBV occurs in the presence of an acquired condition, such as congenital malrotation, anatomical abnormalities, bands, postoperative adhesions, tumours, pregnancy, and diverticular disease [5]. No specific symptom, clinical sign, or abnormal laboratory finding covers both primary and secondary types [1]. As the abdominal imaging cannot always provide enough information for the diagnosis, a delay in diagnosis may occur, which can be life-threatening.

So early diagnosis and prompt management with exploration can prevent the small intestine from gangrenous changes, which is associated with high morbidity and mortality

### II. Case Presentation

A 40 years old male presented in the emergency with complaints of postprandial pain abdomen for 3 days. It was associated with intermittent episodes of vomiting and not passing stool but passing flatus for 2 days. On further inquiry it was revealed that he had similar episodes 3 months back, for which he was admitted and managed conservatively in our hospital.

Patient had a history of sigmoid volvulus 3 yrs back, for which he underwent emergency laparotomy where resection of the gangrenous segment and colocolic anastomosis was done.

On examination patient was afebrile with all vital parameters were within normal limit. On per abdominal examination abdomen was mildly distended and bowel sound increased. DRE was empty. X-ray abdomen showed multiple air fluid levels; (fig:1). Patient was resuscitated with iv fluid and iv antibiotics, nasogastric tube inserted, foleys catheterisation done and kept under observation. CT scan abdomen was done on next day and report suggestive of moderate dilatation of large bowel loop with multiple air fluid level and moderate free fluid in the peritoneum.

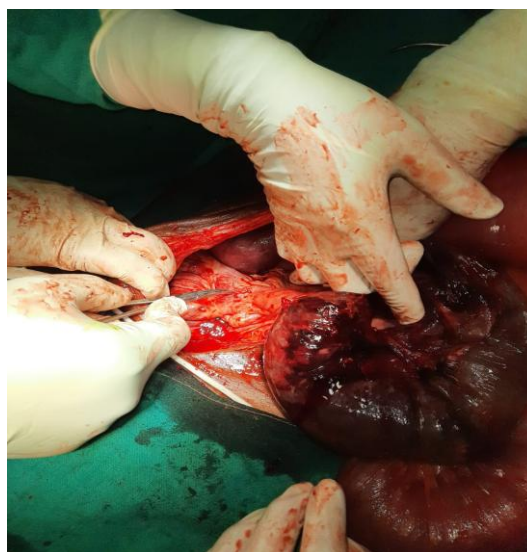
For initial 24hrs patient showed some sign of improvement with iv fluid and rectal suppository, but again after this period he developed abdominal distension with 2 episodes of vomiting and absolute constipation with signs of peritonitis. So patient was planned for exploratory laparotomy. On exploration terminal ileum had twisted along its mesenteric axis in the clockwise direction. Mild distension of proximal small intestine with collapse of large intestine distal to the site of twisting was noted (fig: 2). No band or perforation was found. The volvulus was untwisted and gut of length around 30cm was found to be gangrenous at about 15cm from ileocaecal valve. The gangrenous bowel was resected. The distal end of bowel was closed with vicryl, and

proximal end of bowel was taken out as end ileostomy Postoperative period was uneventful and on day 10 all sutures were removed and patient was discharged.

On discharge note patient is again called after 10-12 weeks period for stoma closure(plan- ileo transverse anastomosis)



**Fig.1-Multiple air fluid levels on x ray abdomen erect**



**Fig.2-Gangrenous small intestine**

### III. Discussion

Small bowel volvulus (SBV) is rare in western countries (annual incidence; 1.7–5.7 per 100,000 population) but has the higher incidence in the Middle East, Asia and Africa (annual incidence; 24–60 per 100,000 population) [6]. While the exact reason for these regional differences remains unknown, it perhaps relates to dietary factors. Fibre consumption after prolonged fasting (e.g. Muslims during Ramadan) results in sudden overloading of the empty bowel, which can induce bowel peristalsis thus leading to SBV [9]. However, the literature in some Asian countries such as Japan and Taiwan showed that SBV was rare in those countries [10, 11]. In this case patient was operated after 48hrs of his admission and diagnosis of small gut volvulus was made on OT table. Adhesion due to previous abdominal surgery for sigmoid volvulus could be the cause for SBV development. The suggested mechanism for its development involve obstruction of a small bowel loop at two fixed points by adhesion, as the loop filled with liquid, peristalsis caused it to twist around its mesentery [7].

Small bowel obstruction is presented with the classical clinical features of intestinal obstruction including severe abdominal pain which persist despite routine analgesics, in addition to nausea, vomiting and abdominal distension [1]. Physical examination may be nonspecific for underlying aetiology. Since abdominal radiography is nonspecific, computed tomography is the choice of investigation. On computed tomography, signs suggestive of SBV include rotation of the mesentery and the mesenteric vessels, dilated gut loops and signs of intestinal ischemia such as the presence of air in the bowel wall, portal vein gas, and free peritoneal fluid [6, 8]

Therapeutic options include both simple derotation and resection based on causative factors. The optimum therapeutic approach for viable small intestine is uncertain, The alternatives are resection and fixation or simple derotation [6]. If the intestine is gangrenous, almost all author recommend resection with or without anastomosis [1]. On the other hand if the ischemia improves with simple derotation then vascular dilator, warm gauze and 100% oxygen are to be tried for reversal of ischemia. Complications include bowel obstruction, ischemia, and necrosis [1-2]. Although this diagnosis is rare, prompt diagnosis and early surgical intervention is key, since gangrenous bowel is associated with high mortality (20%-100%) [2].

### IV. Conclusion

SBV is a rare acute abdominal condition. Inconclusive clinical symptoms and signs make its diagnosis even more challenging. Surgeon should keep this condition as a differential diagnosis when dealing with a patient of acute abdomen with a previous history of abdominal surgery involving the intestine. Early CT scan of abdomen and prompt operative management is the key to avoid its adverse consequences.

**References:**

- [1]. Roggo A, Ottinger LW: Acute small bowel volvulus in adults. A sporadic form of strangulating intestinal obstruction. *Ann Surg.* 1992, 216:135-141.
- [2]. Katis PG, Dias SM: Volvulus: a rare twist on small-bowel obstruction. *CMAJ.* 2004, 171 : 728– 728. 10.1503/cmaj.1040662
- [3]. Welch MG, Anderson J: Volvulus of the small intestine in adults.. *World J Surg.* 1986, 10:496– 499
- [4]. Tamura J, Kuniyoshi N, Maruwaka S, Shiroma J, Miyagi S, Orita H, et al. "Whirl sign" of primary small bowel volvulus. *West J Emerg Med.* 2014 15: 359–360. <https://doi.org/10.5811/westjem.2014.4.20679> PMID: 25035728
- [5]. Gurleyik E, Gurleyik G. Small bowel volvulus: a common cause of mechanical intestinal obstruction in our region. *Eur J Surg.* 1998; 164:51–55. <https://doi.org/10.1080/110241598750004959> PMID: 95377094.
- [6]. Iwuagwu O, Deans GT: Small bowel volvulus: a review. *J R Coll Surg Edinb.* 1999, 44:150–155.
- [7]. Rubio PA, Galloway RE: Complete jejuno ileal necrosis due to torsion of superior mesenteric artery. *South Med J* 1990 83(12):1483-1484
- [8]. Fisher J: Computed tomographic diagnosis of volvulus in intestinal malrotation. *Radiology.* 1981, 140:145–146. 10.1148/radiology.140.1.7244217
- [9]. Duke JH Jr, Yar MS. Primary small bowel volvulus: Cause and management. *Arch. Surg.* 1977; 112: 685–8. PMID: 860919
- [10]. Takemura M, Iwamoto K, Goshi S, Osugi H, Kinoshita H. Primary volvulus of the small intestine in an adult, and review of 15 other cases from the Japanese literature. *J Gastroenterol.* 2000; 35:52–5.
- [11]. Huang JC, Shin JS, Huang YT, Chao CJ, Ho SC, Wu MJ, et al. Small bowel volvulus among adults. *J Gastroenterol Hepatol.* 2005; 20:1906–12. <https://doi.org/10.1111/j.1440-1746.2005.03945.x> PMID: 16336452

Chandan Kumar Samal, et al. "Small Bowel Volvulus: A Rare Complication Of Sigmoid Volvulus: Case Report." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(5), 2020, pp. 53-55.