A Rare Case Of Non-Gangrenous Small Bowel Volvulus

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Abstract

Small bowel volvulus (SBV) is a rare condition even though the incidence in Africa and Asia is high. It requires emergency surgical intervention, the more so as the diagnosis may cause problems hence consuming time and the risk of the bowel getting gangrenous increases. Small bowel volvulus is of two types; primary and secondary. Here is a case of primary small bowel volvulus with no evidence of gangrenous bowel even though it was diagnosed and managed on the fourth day.

INTRODUCTION

Intestinal obstruction is a common surgical condition. It may be small bowel or large bowel obstruction. The causes of intestinal obstruction are mechanical and functional. Among the mechanical causes, volvulus is classified among the miscellaneous causes [1]. It is a relatively rare condition in the western world but is more common in the African and Asian population. The annual incidence is around 24 to 60 per one lakh population [2]. There are two types; primary and secondary. The primary type is seen more often in male patients and is associated with gangrenous bowel in up to 46% of the patients [3]. We present a case of primary small bowel volvulus (SBV) without a gangrenous bowel, which is a rare entity.

CASE REPORT

A 35-year-old female patient presented to the hospital with complaints of abdominal distension and pain in the central abdomen with obstipation for 5 days and breathlessness since 2 days. She was admitted at a peripheral primary health centre for 4 days and then referred as her condition deteriorated. She had had 2 normal deliveries previously. There was no history suggestive of any eating disorders or any previous abdominal surgeries.

Since she was under medical care, she had a Ryle's tube inserted which had bilious content. She also had a Foley's urinary catheter in situ. The patient was well hydrated and did not have any symptoms of electrolyte imbalance. Her urine output was adequate.

Her vital parameters were stable. Her general examination showed a fairly good picture. On local examination she had tenderness over the umbilical region, left hypochondrium and epigastric region, with the whole abdomen distended, a hyper-resonant note on percussion and no shifting dullness. Bowel sounds were absent. Digital rectal examination was normal.

All the basic blood and urine investigations were within normal limits. Serum lactate and amylase levels were normal. An erect abdominal x-ray showed multiple air-fluid levels [figure 1] and ultrasonography suggested a small bowel obstruction, no evidence of gangrenous bowel. A diagnosis of acute small bowel obstruction was made.

Figure 1

Figure 1: Multiple air-fluid levels

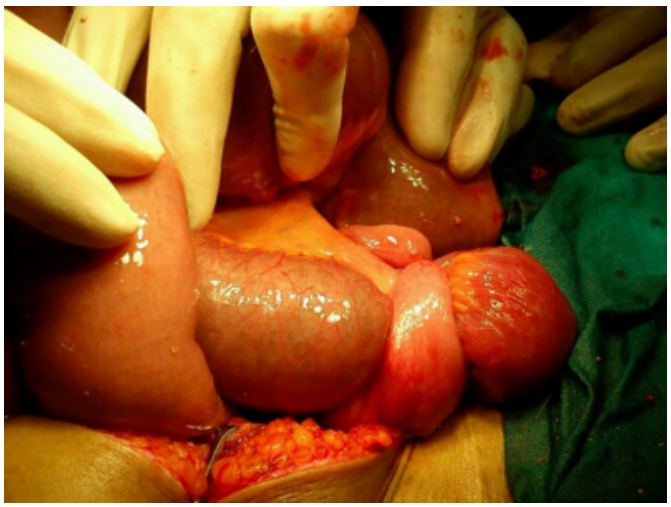


After an anaesthetic evaluation and the informed consent of the patient, an emergency laparotomy was performed with a midline incision. The findings on table were a normal

peritoneum and dilated small bowel loops with a collapsed ascending colon. A primary small intestinal volvulus was seen 12-15cm proximal to the ileo-caecal junction, no gangrenous bowel was present [figure 2]. The volvulus was untwisted and the obstruction was relieved. Other parts of the bowel, liver and spleen were inspected and no pathology was found. The abdomen was closed in layers without effort and a tube drain was kept in situ.

Figure 2

Figure 2: Small bowel volvulus



Postoperatively the patient recovered well. The bowel sounds were heard in 48 hours and the quantity of the Ryle's tube aspiration decreased, oral feeding was started. The drain tube was removed on the fourth postoperative day and the sutures were removed on the eighth postoperative day.

The patient was sent home on the eighth postoperative day with the only medication of antacids. She was symptomless on review after six months.

DISCUSSION

The origin of the word volvulus is from the Latin term volvere which means to turn or roll. Volvulus is the twisting of a hollow organ about its mesentery which results in obstruction and hampered venous return followed by ischemia. The incidence of small bowel volvulus compared to caecal and sigmoid volvulus is very low. The reported annual incidence ranges from 1.5 to 5.7 per one lakh population in the Western world as compared to 24 to 60 per lakh population (0.024-0.06%) in Africa and Asia [1]. It presents more commonly in young males in the lower socio-economic strata [4]. This is attributed to their habit of eating large meals infrequently. It is also seen more often in Muslim patients during the month of Ramadan [5]. Literature quotes that higher incidence of SBV is seen in regions with endemic parasitism [1], in some Ugandan tribes due to consumption of large quantity of beer rich in serotonin.

Taking all these observations into account, a popular theory for SBV is that rapid filling of the proximal intestines with high bulky chyme pulls it down into the pelvis and pushes the empty distal bowel loops upward, thereby initiating a twist or volvulus.

Clinically, the patient presents with signs of small bowel obstruction and central abdominal pain which is sudden in onset [1]. The suspicion of vascular jeopardy must be borne in mind with associated features of fever, tachycardia, peritoneal signs, acidosis and leukocytosis.

An erect x-ray of the abdomen shows dilated bowel loops with air-fluid levels which are non-specific for SBV. CT gives a lot of information for the diagnosis of the condition. It gives a characteristic of a radial distribution of dilated bowel loops converging at a single point of torsion or a C-shaped loop. The rotation of the mesentery gives a 'whirl' sign which is pathognomonic of SBV [6]. Other findings like pneumatosis, portal vein gas and free intra-peritoneal fluid suggest small bowel ischemia.

The treatment involves an emergency laparotomy with exploration of the abdomen, resection of the gangrenous bowel and end-to-end anastomosis. The overall mortality rate in patients undergoing laparotomy for SBV is 10% to 35% [1], which is considerably high compared to small bowel obstruction in general.

Literature does not mention any clear-cut treatment options for SBV without bowel ischemia. There are no prospective, randomised studies or retrospective studies on the recurrence of torsion. Most studies prescribe doing a simple detorsion without resecting the bowel. This modality was what we followed in our case. The risk of recurrent volvulus is not well established; however, the resection of the involved non-ischemic bowel can be done to prevent recurrence [1]. Post-laparotomy intra-peritoneal adhesions are thought to be the factor to prevent recurrence.

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