



RECURRENT VOLVULUS OF TRANSVERSE COLON: A RARE CASE REPORT

Dr. Anand K	General Surgeon (DNB) Dr. Jeyasekharan Hospital and Nursing Home Nagercoil
Dr. S. Sabu Jeyasekharan*	M.S (GEN. SURG), S.G.E. Head of the Department Department of General Surgery Dr. Jeyasekharan Hospital, Nagercoil *Corresponding Author
Dr. Anup Rajeev Mannali	General Surgeon (DNB) Dr. Jeyasekharan Hospital and Nursing Home Nagercoil
Dr. M. Hari Krishnan	General Surgery Registrar Dr. Jeyasekharan Hospital and Nursing Home Nagercoil

ABSTRACT

Background: Colonic volvulus is twisting of a portion of the colon around its mesentery, causing a colonic obstruction. The sigmoid colon, right colon and caecum are the common portions of the colon involved. Volvulus of transverse colon is extremely rare its incidence being approximately 3% of all colonic volvulus [2, 3]. This is a case report with a structured review of literature of transverse colonic volvulus presenting as intestinal obstruction. Transverse colon volvulus is associated with both developmental abnormalities, such as a freely mobile right colon and associated conditions such as chronic constipation, distal obstructions and autonomic dysfunction.

Conclusion: Though rare, the possibility of a transverse colon volvulus must always be part of a differential diagnosis when dealing with an intestinal obstruction as the mortality rate with transverse colon volvulus is much higher than with a volvulus in any other part of the large intestine.

KEYWORDS : Recurrent Volvulus, Transverse Colon Volvulus, Intestinal Obstruction

INTRODUCTION

Volvulus of the transverse colon is a rare cause of intestinal obstruction. The sigmoid colon and caecum are the most common portions of the colon involved. It is associated with both developmental abnormalities such as a freely mobile right colon and associated conditions such as chronic constipation, distal obstructions, and autonomic dysfunction. Such cases present with abdominal pain and distension. The abdominal distension is often very marked, greater than usually seen in a small bowel obstruction or colonic obstruction due to malignancy. Some patients may present with signs of shock due to dehydration, bowel ischemia, or peritonitis. The mortality rate of transverse colon volvulus is 33% [5]. We report a case of recurrent transverse colon volvulus due to its rarity and difficulty in diagnosis resulting in higher mortality.

CASE REPORT

A 47 year old ex-serviceman presented to the emergency with history of sudden onset of abdominal pain, obstipation and abdominal distension for 1 day duration. He gave a long history of similar symptoms in 2007, was then evaluated to have sigmoid volvulus and underwent resection and anastomosis of gangrenous segment. Abdominal examination revealed a tense, distended and tender abdomen. Bowel sounds were sluggish. Old midline laparotomy scar was seen. The patient was put on conservative management and investigated. Abdominal radiographs were suggestive of volvulus of large bowel with colonic flatulence (figure 1). CT abdomen showed dilated large bowel with maximum diameter of 8.5cms. On colonoscopy sigmoid colon was absent and obstruction due to transverse colon volvulus was found (figure 2). Obstruction was successfully reduced with the help of colonoscopic reduction. Colonoscope was passed upto transverse colon which showed distension with flatus and faeces (figure 3). Post procedure his bowel functions resumed to normal status. He was started on liquid diet followed by soft solid diet which he tolerated well. He was discharged with a satisfactory general condition.



Fig. No. 1: x-ray abdomen showing dilated large bowel.

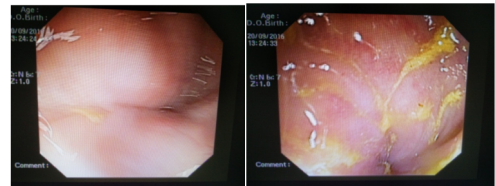


Figure 2: Colonoscopic view of transverse colon volvulus.



Figure 3: Colonoscopic reduction of the volvulus

DISCUSSION

Volvulus is derived from the Latin word 'volvere', which means "to twist upon". In the colon, it refers to a condition in which the colon is twisted on its mesentery causing acute, sub acute, or chronic colonic obstruction. Patients with colonic volvulus typically have a long and mobile colon that can rotate around a fixed mesenteric base (1).

Colonic volvulus presents with symptoms of crampy abdominal pain, distension, diminished stool output, nausea and vomiting. Progression to constant abdominal pain implies the development of ischemia within the affected segment of colon because of compromise of the mesenteric vasculature. Many patients with colonic volvulus describe symptomatic episodes that resolve spontaneously, often with an associated explosive bowel movement or passage of gas. Physical findings typically include tympany, abnormal bowel sounds, and abdominal wall tenderness.

Sigmoid volvulus represents the leading cause of large bowel obstruction, accounting for 20% to 30% of the cases of intestinal obstruction (3). The sentinel predisposing factor for sigmoid volvulus is the presence of a long mesentery with a narrow base. The sigmoid colon can then rotate at least 180 degrees in a clockwise direction around its vascular pedicle. This process results in a closed-

loop obstruction of the sigmoid colon and possibly a second closed-loop obstruction of the proximal colon if the ileocecal valve is competent. Intestinal ischemia and necrosis may occur as a result of significant luminal distension and venous or arterial occlusion in the sigmoid mesentery.

In addition, sigmoid volvulus is more common in patients with conditions associated with a redundant sigmoid colon such as Chagas disease, Parkinson disease, chronic neurologic disorders, diabetes, chronic constipation, laxative abuse, high-altitude, and previous surgery involving mobilization of the sigmoid colon (4).

The two properties essential to the formation of a volvulus are redundancy and non-fixation [10]. The ascending and descending segments of the colon are fixed, but the sigmoid colon, cecum, and transverse colon are mobile within the peritoneum, tethered by their mesentery [10,11]. This mobility allows volvulus to occur at these locations. Redundancy of any of these segments further enables the formation of a volvulus [10].

Volvulus of the transverse colon or splenic flexure is rare. The broad mesenteric attachment of the transverse colon combined with fixation at the hepatic and splenic flexures precludes rotation of the transverse colon in most patients (4).

Sigmoid volvulus can often be diagnosed with plain radiographs of the abdomen. The classic plain radiographic sign of a sigmoid volvulus is a loop of sigmoid under the left diaphragm. This is sometimes described as the "coffee bean" sign. Lower gastrointestinal contrast radiography can be obtained to confirm the diagnosis. The classic finding is a "bird's beak" deformity or mucosal spiral pattern at the site of the volvulus. Contrast radiography may also be therapeutic and temporarily reduce the volvulus.

CT scans of the abdomen are commonly used to diagnose colonic volvulus. Cross-sectional imaging usually demonstrates a "whorl sign," that is, mesenteric fat with engorged vessels that converge toward the centre. Dilated haustral segments of colon can be observed proximal to the site of obstruction.

Endoscopic reduction of volvulus should be attempted in patients without evidence of bowel necrosis or perforation. The colonoscope can usually be gently passed through the narrowed edematous twisted point of obstruction to reduce the volvulus. Failure to successfully reduce the volvulus endoscopically or clinical evidence of compromised bowel mandates emergent laparotomy. Resection of gangrenous bowel is required; furthermore, the utility of non-resectional surgery is of questionable value in patients with viable colon. A number of reviews have demonstrated a higher mortality rate (25% to 50%) in patients who undergo colostomies in comparison to patients who undergo primary anastomosis (9).

The overall mortality, which was originally greater than 50%, has now dropped well below 10% (7, 9). The presence of shock, bowel gangrene, colonic perforation, major co-morbidity, advanced age, and emergency surgery increases the mortality rate (7, 8).

Definitive management for transverse colon volvulus includes Resection with or without primary anastomosis to prevent recurrence. If there is ischaemic necrosis of colon two ends of resected colon should be exteriorized.

Successful decompression by means of the colonoscope has been recently described. Uptill now the studies which are carried out there are no universal agreement that a particular surgical treatment option is superior to other.

In the literature, the incidence of recurrent volvulus after previous resection and primary anastomosis is 22% to 36% (4). The presence of a megacolon during primary intervention is a well-known risk factor for recurrence of volvulus and dividing the attachments of the remaining colon theoretically further increases this risk. Therefore, Booi KAC et. al., recommended to consider a subtotal colectomy in

the presence of a megacolon, instead of partial resection of the involved bowel segment.

In our case, reason for recurrent volvulus of transverse colon could be due to previous surgery for sigmoid volvulus when splenic flexure and transverse colon must have extensively mobilized for anastomosis after resection of gangrenous sigmoid colon.

CONCLUSION

TRANSVERSE COLON VOLVULUS is rare and its diagnosis is challenging. Prompt recognition and emergency intervention constitutes the key to successful outcome.

References

1. Sparks D, Dawood M, Chase D, Thomas D. Ischemic volvulus of the transverse colon: A case report and review of literature. *Cases J.* 2008 Sep 22;1(1):174.
2. Fry RD, Mahmoud N, Maron DJ, Ross HM, Rombeau J. Colon and rectum. *Sabiston textbook of surgery.* Philadelphia: Saunders Elsevier; 2008. p. 1369.
3. Williams NS. Large bowel obstruction. *Surgery of the anus, rectum and colon.* London: W.B. SAUNDERS; 1993. p. 1852.
4. Booi KAC, Tanis PJ, Van Gulik TM, Gouma DJ. Recurrent volvulus of the transverse colon after sigmoid resection. *Int J Colorectal Dis.* 2009 Apr;24(4):471–2.
5. Ciraldo A, Thomas D, Schmidt S. A Case Report: Transverse Colon Volvulus Associated With Chilaidditis Syndrome. *The Internet Journal of Emergency and Intensive Care Medicine.* 2000;4:2.
6. Deshmukh SN, Maske AN, Deshpande AP, Shende SP. Transverse Colon Volvulus with Chilaidditis Syndrome. *The Indian Journal of Surgery.* 2010;72(4):347–349. doi:10.1007/s12262-010-0130-4.
7. Raveenthiran R, Madiba TE, Atamanalp SS, De U. Volvulus of the sigmoid colon. *Colorectal Dis.* 2010;12:1–17.
8. Oren D, Atamanalp SS, Aydinli B, et al. An algorithm for the management of sigmoid colon volvulus and the safety of primary resection: experience with 827 cases. *Dis Colon Rectum.* 2007;50:489–97.
9. De U, Ghosh S. Single stage primary anastomosis without colonic lavage for left-sided colonic obstruction due to acute sigmoid volvulus: a prospective study of one hundred and ninety-seven cases. *ANZ J Surg.* 2003;73:390–2.
10. Plorde JJ, Raker EJ. Transverse colon volvulus and associated Chilaidditis syndrome: case report and literature review. *Am J Gastroenterol.* 1996;91:2613–2616.
11. Houshian S, Sorensen JS, Jensen KEJ. Volvulus of the transverse colon in children. *J Pediatr Surg.* 1998;33:1399–1401. doi:10.1016/S0022-3468(98)90017-3.