

Volvulus of the Transverse Colon: Report of case and Review of the Literature

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Abstract

Introduction: Colon volvulus is the third most common cause of colonic obstruction worldwide, with 2 main sites: the sigmoid and cecum, and rarely the left colonic angle and transverse colon.

In Western countries, volvulus primarily affects elderly men, Certain risk factors are common to the various localizations.

Case Presentation: We report a case we report the case of a patient admitted for acute intestinal obstruction in the department of Emergency visceral surgery.

Our patient, without any particular pathological history or comorbidity, having presented a constipation and progressive abdominal pain for 2 weeks, complicated 2 days before his admission by an occlusive syndrome. Physical examination revealed a distended abdomen and tympanic with generalized tenderness. Blood tests showed hyperleukocytosis at 15,900/mm³, Abdominal x-ray revealed a large bowel obstruction with a “U” shaped loop in the left upper abdomen and The CT scan demonstrated dilation of the right colon and the transverse colon with a cut-off near the splenic flexure.

The small intestine showed no signs of suffering. A significant disparity in the size of the obstructed proximal and collapsed distal colon relative to the site of volvulus was observed. The transverse colon was mobile and increased in length. The volvulus was introduced into the incision and detored with necrosis of the transverse colon and suffering of the colon remnant.

Clinical Discussion: Transverse colonic volvulus (TCV) was first described by Kallio in 1932 and still remains a very rare cause of intestinal obstruction. Classically, TCV is said to occur twice as often in women as in men; in the second and third decades of life.

Only 3–5% of all cases of intestinal obstruction are caused by colonic volvulus, The transverse colon is involved in 2 to 4%.

The diagnosis is rarely made preoperatively. Plain abdominal radiographs may show massive dilatation of the proximal colon with empty distal bowel and two air-fluid levels caused by double closed-loop

Computed Tomography (CT scan) has the highest sensitivity and will help delineate closed-loop obstruction, marked dilatation of the proximal colon and collapse of the distal portion of the transverse/descending colon, as well as the twisting of the mesenteric vessels, all of which suggest TCV.

Diagnosis of transverse colonic volvulus is difficult because it does not have the same classically recognizable radiographic features as sigmoid and cecal volvulus. It is generally performed intraoperatively. In the subacute type, early diagnosis by CT scan is recommended.

Conclusion: Transverse colonic volvulus is rare. Its diagnosis is difficult. Rapid recognition accompanied by emergency intervention is the key to a positive outcome.

Keywords: Volvulus; Transverse colon; Spontaneous; Acute intestinal obstruction

Introduction

Transverse colonic volvulus is a rare cause of intestinal obstruction. It constitutes a surgical emergency because it can lead to intestinal infarction, peritonitis and death if not diagnosed immediately. We report a case of spontaneous volvulus of the transverse colon.

Certain risk factors are common to the various localizations,

notably chronic constipation, high-fiber diet, frequent use of laxatives, history of laparotomy and anatomical predisposition. The clinical picture is aspecific, abdominal pain, meteorism and obstruction.

Abdominopelvic CT scans are currently the gold standard for making the diagnosis and detecting any complications. Man-

agement depends on the location of the volvulus, the terrain, the patient and the vitality of the colon, but remains a medical-surgical emergency in all cases.

Observation

51-year-old patient, without any particular pathological history or comorbidity, having presented a constipation and progressive abdominal pain for 2 weeks, complicated 2 days before his admission by an occlusive syndrome. Physical examination revealed a distended abdomen and tympanic with generalized tenderness. There was no hernia and the digital rectal examination showed an empty rectal ampulla without intraluminal masses.



Figure 1: Abdominal X-ray showing colonic hydroaerobic levels with a dilated transverse colon with a "U"-shaped loop in the upper left abdomen.

Blood tests showed hyperleukocytosis at 15,900/mm³, a disturbed hemostasis assessment with a prothrombin level at 47%, the rest was without abnormality. Abdominal x-ray revealed a large bowel obstruction with a "U" shaped loop in the left upper abdomen (**Figure 1**). The CT scan demonstrated dilation of the right colon and the transverse colon with a cut-off near the splenic flexure (**Figure 2**). No signs of malignancy were found. The patient was urgently admitted to the operating room. approached by a median incision above and below the umbilical with intraoperative exploration (**Figure 3**) a volvulus of the transverse colon making two turns in a clockwise direction with necrosis of the transverse colon, right colon suffering.

The small intestine showed no signs of suffering. A significant disparity in the size of the obstructed proximal and collapsed distal colon relative to the site of volvulus was observed. The transverse colon was mobile and increased in length. The volvulus was introduced into the incision and detored with necrosis of the transverse colon and suffering of the colon remnant.

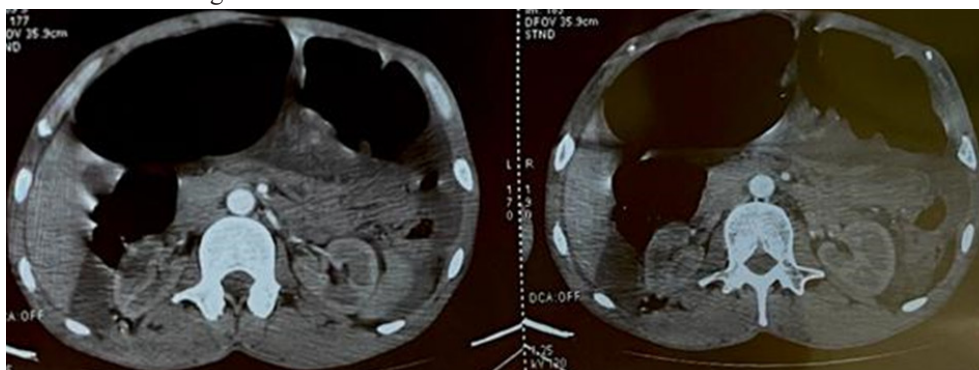


Figure 2: Computed tomography revealing dilatation of the right colon and the transverse colon.

In view of the patient's instability, a sub-total colectomy with ileosigmoidostomy was performed.

Discussion

Transverse colonic volvulus (TCV) was first described by Kallio in 1932 [2] and still remains a very rare cause of intestinal obstruction [2]. Classically, TCV is said to occur twice as often in women as in men; in the second and third decades of life. Some authors have reported a peak during the seventh decade of life [3,5]. In a normal situation, the transverse colon has a short mesocolon and is fixed at both ends, thus being less prone to volvulus. However, in the presence of various factors, such as congenital (abnormal fixation of the mesentery, congenital malformations of midgut rotation); mechanical (previous surgery, adhesions) and physiological (chronic constipation, pregnancy, colitis), it can lead to closed loop obstruction, gangrene, or even perforation in neglected cases [2-6].

Only 3–5% of all cases of intestinal obstruction are caused by colonic volvulus [1]. The transverse colon is involved in 2 to 4% [2,3] compared to 43 to 80% and 15 to 43% for the sigmoid colon and cecum, respectively [3]. A male predominance is noted [2]. Its pathogenesis is not yet completely understood. The predisposing factors are congenital, physiological and mechanical [1,5]. The two congenital properties responsible for a volvulus are redundancy and non-fixation [4]. Physiological causes include a high-forage diet and distention of the large intestine secondary to chronic constipation. This constipation is associated with psychiatric or neurological diseases [2]. Mechanical causes include anterior volvulus of the transverse or sigmoid colon, distal colonic obstruction, adhesions, colonic malposition following previous surgery, right colon mobility, inflammatory strictures, and neoplasm [1,5]. Other factors have been reported such as Chilaiditis syndrome [5], Clostridium difficile pseudomembranous colitis [7] and impaired intestinal motility associated with pregnancy.

The diagnosis is rarely made preoperatively. Plain abdominal radiographs may show massive dilatation of the proximal colon with empty distal bowel and two air-fluid levels caused by double closed-loop obstruction (at the transverse colon and cecum). However, plain x-rays are not very sensitive and may not contribute to the diagnosis. In such cases, a barium enema study can aid in the diagnosis by showing the typical "bird's beak." [4,10] Computed tomography (CT scan) has the highest sensitivity and will help delineate closed-loop obstruction, marked dilatation of the proximal colon and collapse of the distal portion of the transverse/descending colon, as well as the twisting of the mesenteric vessels, all of which suggest TCV [3,11].



Figure 3: Intra operative view demonstrating transverse colon volvulus.

The point of twist was located in the left upper quadrant of the abdomen. The patient died at H7 post-operative following septic shock after the various resuscitation measures.

Although there are occasional reports of successful conservative management [8, 11] of TCV, surgery is usually necessary in the vast majority of cases. Depending on the condition of the colon, surgical options may vary from simple derotation (and colopexy) in patients with a viable colon, to resection (with or without primary anastomosis) in the presence of gangrene or perforation. Resection of the redundant transverse colon presents the least risk of recurrence.

Diagnosis of transverse colonic volvulus is difficult because it does not have the same classically recognizable radiographic features as sigmoid and cecal volvulus. It is generally performed intraoperatively. In the subacute type, early diagnosis by CT scan is recommended [6].

While the sigmoid volvulus can be decompressed by colonoscopy, the transverse colonic volvulus must be surgically untwisted urgently [5]. Resection is the treatment of choice to prevent recurrence [1,5]. In fact, detorsion alone or combined with colopexy has a higher recurrence rate than resection [1,5]. The incidence of recurrent volvulus after anterior resection and primary anastomosis varies between 22% and 36% [2].

Thus, some authors recommend considering a subtotal colectomy in the presence of a megacolon, rather than a partial resection of the involved intestinal segment [2]. This resection is carried out with or without primary anastomosis depending on the appearance of the colon, the existence or not of peritonitis

and the patient's state of health. Our patient underwent a subtotal colectomy with ileo-sigmoidostomy.

Conclusion

Transverse colonic volvulus is rare. Its diagnosis is difficult. Rapid recognition accompanied by emergency intervention is the key to a positive outcome.

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