

Clinical-Medical Image

## A Very Rare Case of Synchronous Volvulus of the Transverse Colon and Sigmoid Causing Large-Bowel Obstruction

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### Abstract

Having a synchronous volvulus of multiple portions of the bowel is an exceedingly rare occurrence, the synchronous volvulus of the sigmoid and transverse colon is an extremely rare clinical entity. There is paucity of information in the literature regarding synchronous sigmoid and transverse colon volvulus. We report a case of synchronous volvulus of the sigmoid and transverse colon in elderly male with history of chronic constipation, without previous history of digestive surgery. He presented as an emergency with typical features of acute large bowel obstruction. He was successfully managed with a good outcome. We discuss the presentation, radiological diagnosis and surgical management with a literature review of this case of a synchronous volvulus of the sigmoid and transverse colon. Synchronous volvulus of the sigmoid and transverse colon is an extremely rare entity. Radiological appearance of the transverse volvulus can miss as it will be masked by the sigmoid volvulus; emergency exploratory laparotomy confirms the diagnosis of double volvulus.

**Keywords:** Volvulus; Transverse colon; Sigmoid colon; Obstruction

### Introduction

Volvulus is a rotation around the axis of a part of the digestive tract along its mesentery. Synchronous volvulus of the large bowel is a very rare entity which can be easily missed clinically. Each colon segment can be rotated if it has a long loose mesentery, which narrows at its base. The radiological diagnosis is essentially based on computed tomography; it allows multiplanar reconstruction that facilitates definitive diagnosis, but it is difficult to identify as features of one volvulus distorts the other. The initial treatment is decompression and correcting the torsion through emergency resection surgery.

### Case Report

A 65-year-old man presented to our hospital emergency department especially in general surgery emergency with an 8-day history of constipation, progressive abdominal pain, nausea, and vomiting. His last bowel movement had been 7 days ago. There was a past medical history of chronic constipation, but no psychiatric disease, or abdominal surgery. On examination, his vital signs were: temperature 37.7°C, pulse 117/minute, respiratory rate 26/minute, and blood pressure 90/65 mmHg. An abdominal examination revealed a hugely distended abdomen without signs of peritonitis. His abdomen was tympanic to percussion. There were no umbilical or groin hernias. A digital rectal examination demonstrated an empty rectal vault without intraluminal masses.

Abdominal X-ray showed distended colonic loops with air-fluid levels but no observable distal gas, a Chilaiditi sign with dilated loops of bowel causing elevation of both hemidiaphragms was associated (Figure 1). A complete abdominal CT scan with contrast revealed the presence of significant colonic distension upstream of a calibre disparity at the level of the sigmoid colon, with a spiral appearance at this level, with diffuse colic parietal thinning, but no sign of ischemia (Figures 2 and 3).

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**Figure 1:** The standard x-ray shows significant distension of the colonic loops with a typical image of coffee bean.



**Figure 2:** Axial cut of the abdomino-pelvic CT scan performed shows the typical appearance of a bird's beak (white arrow), associated with a significant distension of the colonic loops, with significant parietal thinning the small bowel loops are rolled back to the left side.



**Figure 3:** Axial scan showing the interposition of the colonic loops between the diaphragm, the liver and the spleen, thus producing the Chilaiditi's syndrome.

He was operated on urgently after conditioning and the diagnosis of a transverse and sigmoid colon volvulus was done intraoperatively (Figure 4). Rotated in a 360° clockwise direction on its mesentery, the bowel was intact without signs of ischemia. An extended left hemicolectomy was carried out with end-to-side ileocolic anastomoses the postoperative course was without anomaly.



**Figure 4:** Image taken from the operating room shows the distension of the digestive loops which remains well vascularized with no obvious sign of necrosis.

## Discussion

Volvulus most commonly occurs in part of the colon, but it can occur in any part of the digestive tract, including the stomach, gallbladder, and small intestine. According to the data in the literature, the most common sites are: the sigmoid colon and the cecum more rarely the transverse colon and splenic flexion [1,2]. Cases involving simultaneous volvulus of the transverse colon and another colonic segment are rare. Synchronous volvulus of the sigmoid and transverse colon is an extremely rare entity. The published literature on epidemiology of patients with colonic volvulus reveal that was more common in older adult males (>70 years), with a long history of constipation, people of African descent, patients with diabetes mellitus and neuropsychiatric disorders, the presence of a megacolon is a significant predictor factor of recurrence [3]. The sigmoid colon is most often twisted due to its anatomical constitution (60% to 80% of cases), followed by the cecum 20% to 40%. The volvulus may interest a fixed part of the colon which, theoretically, cannot move due to its retroperitoneal location, its fixation by various ligaments or a large base of mesenteric attachment. These segments include the right colon, the transverse colon and the splenic flexion [3,4]. The volvulus of the transverse colon is extremely rare because it is a very resistive part of the intra peritoneal large bowel to volvulus formation, anatomically it held by a short mesocolon and a firmly fixed splenic flexure. Association between transverse colon volvulus and Chilaiditi's syndrome (Figure 3) is also a well reported problem. One of the rarely reported complications is a formed colonic knot with a concurrent sigmoid volvulus, only identified intra operatively [1]. The most common clinical signs are abdominal distention and hypoactive bowel sounds. Currently, computed tomography (CT) is extremely useful in detecting the site, degree of torsion, causes and complications of a colonic volvulus. The main sign is the bird's beak appearance created by the two limbs of the twisted colonic segment joining at the point of torsion; another pathognomonic sign is the whirl sign, it corresponding to the point of torsion around which the bowel loops and mesenteric vessels are wrapped. Dilated proximal intestine and absence of air in the distal colon and rectum are the indirect signs revealed by CT. The presence of complications completely changes the therapeutic management, they are sought to scan and represented by a parietal thinning and pneumatosis.

Typical "coffee bean" image on the frontal reconstruction confirming volvulus of the sigmoid colon was apparent in our case. However, the transverse volvulus was not evident and was probably masked by the sigmoid volvulus and dilated proximal intestine. The features of synchronous sigmoid and transverse volvulus can mask the radiological appearance of each other especially that of the transverse colon, due to mass effect of one volvulus on the other coupled with rarity of this condition [4].

The concomitant presence of mega colon and megarectum are reported to be significant predictors of recurrence. There are also reports, however, of an association Chilaiditi's syndrome; it is defined as a colonic interposition between the liver and the right hemidiaphragm. There are reports of Chilaiditi syndrome being associated with volvulus of the caecum, transverse colon and the splenic flexure of the colon.

The treatment of double volvulus depends on the viability of the bowel, the presence of concomitant pathologies, haemodynamic stability of the patient and the presence of signs of gravity on the abdominal scan. For a viable bowel, the treatment is usually controversial; the intraoperative examination of the bowel is necessary looking for coexisting pathologies such as carcinoma or a megacolon. For necrotic bowel, resection is mandatory. Resection is the treatment of choice to prevent recurrence. Emergency exploratory laparotomy was carried; it confirmed a long and redundant sigmoid colon was noted with an associated long mesentery. Although the bowel was dilated, there were no serosal tears appreciated and the large bowel appeared viable. Our patient has benefited from untwisting of the transverse colon; a sigmoid resection was performed, to prevent recurrence, associated with a double stoma. The small bowel was collapsed and there were no gross abnormalities noted. The restauration of digestive continuity was carried out later.

## Conclusion

Synchronous volvulus of the transverse colon and sigmoid is a rare cause of bowel obstruction and despite reports in the literature that describe the clinical features and radiological appearances, diagnosis remains difficult, and the surgical intervention can work to reduce complications.

## Declaration of Interests

The authors declare that they have no competing interests.

## References

1. Motsumi MJ, Tlhomelang O (2018) Synchronous volvulus of the sigmoid and transverse colon in a 26-year-old male. J Surg Case Rep 4:295-297.
2. Perrot L, Fohlen A, Alves A, Lubrano J (2016) Management of the colonic volvulus in 2016. J Visc Surg 3:183-192.
3. Mc Brearty A, Harris A, Gidwani A (2011) Transverse-sigmoid colon knot: a rare cause of bowel obstruction. Ulster Med J 2: 107-108.
4. Lianos G, Ignatiadou E, Lianou, E, Anastasiadi ZK, Fatouros M (2012) Simultaneous volvulus of the transverse and sigmoid colon: A case report. G Chir 33: 324-326.