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Incomplete Small Bowel Volvulus on Common Mesentery - A Severe and Rare Complication in Adults: Case Report

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Abstract | **Case Report**

The diagnosis of small bowel volvulus can be made in an emergency in the presence of an acute intestinal obstruction, or even a state of shock, or in the presence of repeated abdominal pain often associated with transit disorders. It is a dreaded complication of incomplete common mesentery, which is defined as a rotation anomaly of the digestive tract very rare in adults. symptoms are non-specific, hence the knowledge of its radiological characteristics, especially scannographic, allows an early therapeutic management. We report the observation of a 57-year-old patient admitted for small bowel volvulus on incomplete common mesentery diagnosed by abdominal computed tomography (CT) and confirmed by surgical exploration, and in whom the evolution was favorable.

Keywords: Small bowel volvulus; surgery; diagnosis; CT; incomplete common mesentery; obstruction.

INTRODUCTION

The common mesentery is resulting from a rotational anomaly of the gastrointestinal tract. It is characterised by the persistence of a secondary embryonic anatomical disposition to a rotational anomaly of the primitive umbilical loop, thus constituting a common meso to the entire intestinal loop and an extremely short root of the mesentery [1]. This rotation deficiency is most often associated with a docking defect.

The diagnosis of total small bowel volvulus can be made in a variety of circumstances: in an emergency in the presence of acute intestinal obstruction, or even a state of shock leading to death, or in the presence of repeated abdominal pain more or less associated with transit disorders [2].

We report the clinical case of a 57 years old patient admitted for small bowel volvulus on incomplete common mesentery, operated in emergency with a favorable postoperative outcomes.

CASE REPORT

The patient was 57 years old with unknown pathological history, admitted to our emergency unit with an occlusive syndrome, associated with intense and unbearable abdominal pain and vomiting evolving for 4 days before its admission.

The physical examination on admission found a patient: conscious GCS 15, dehydrated with a blood pressure of 100mmHg/70mmHg; heart rate 100 beats/min; polypnea 30 cycles/min; apyretic at 37°C. Abdominal examination revealed a distension, tympany on percussion. An emergency biologic workup revealed functional renal failure with a biological inflammatory syndrome. An abdominal film was performed, showing air-fluid levels.

We completed an injected abdominal-pelvic CT scan, which showed a swirling image of the ileal loops, with the cecum in a subhepatic position and the small gut on the right flank with signs of digestive distress. The diagnosis of incomplete common mesentery occlusion was adopted. After a short resuscitation, the patient was admitted urgently to the operating room.

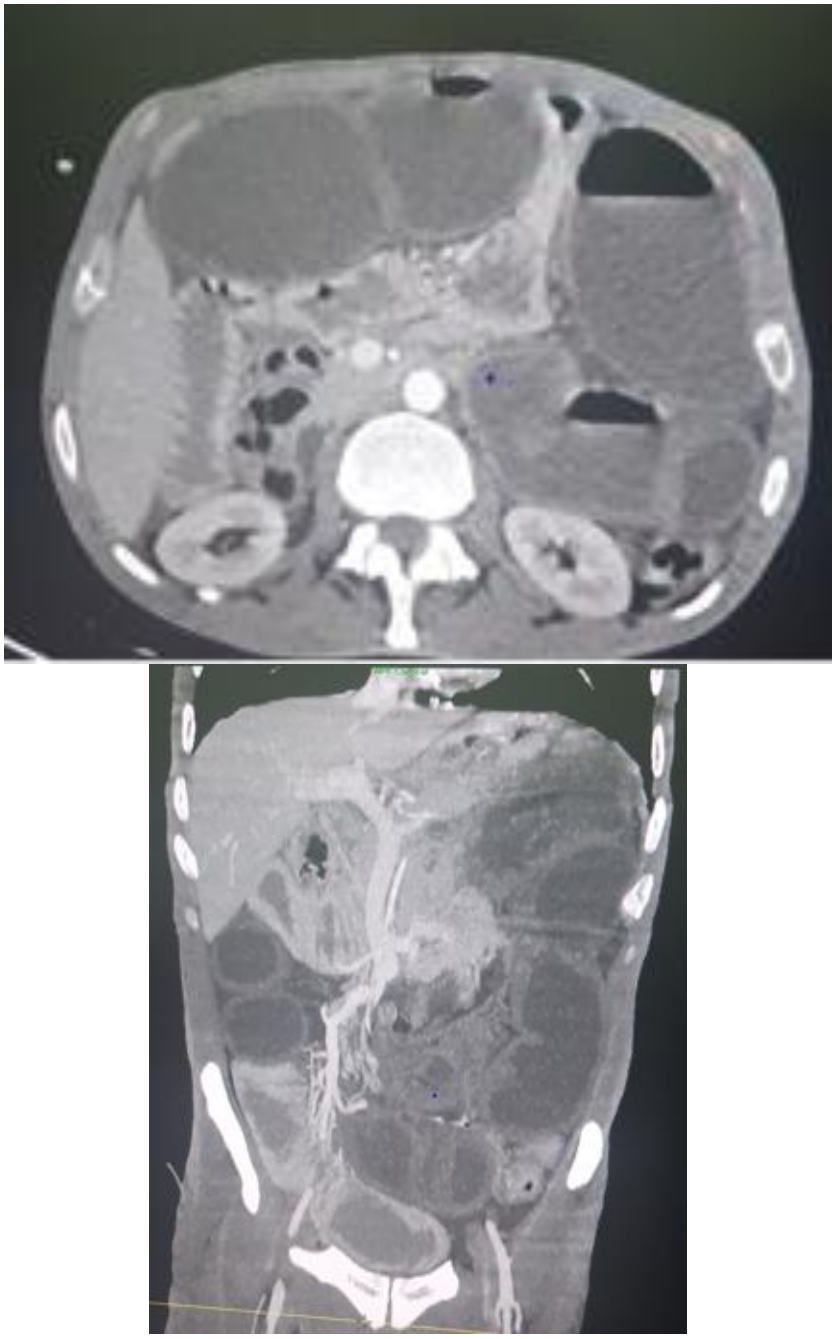

Figure 1: CT scan revealing incomplete small bowel volvulus on common mesentery

Exploration found the entire small bowel distended and suffering with a turn of spiral involving the first jejunal loop and the last ileal loop which was necrotic. The cecum was subhepatically attached to the wall by a Ladd's flange.

The surgical procedure consisted of a counterclockwise detorsion then cure of the embryological rotation anomaly according to Ladd's procedure (section of the flanges, transformation of the incomplete common mesentery into a complete common mesentery to avoid any recurrence and finally a principled appendectomy) and resection of 30 cm of necrotic graft and making of a ileo-ileal anastomosis. The outcomes were favorable and the patient was discharged after 7 days in hospital.

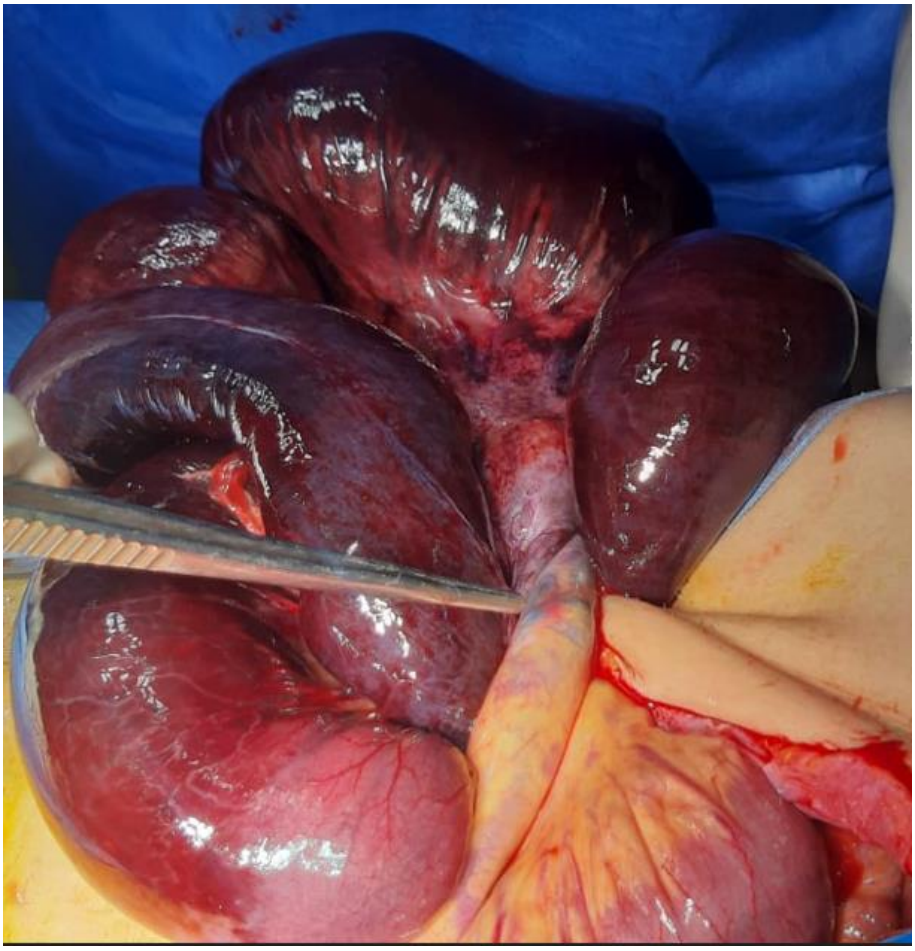

Figure 2: The small bowel volvulus causing grelic necrosis

DISCUSSION

In adulthood, the prevalence of these congenital malformations is estimated to be in the range of 0.2% to 0.5% [3, 4], with asymptomatic presentation and therefore undiagnosed. In these asymptomatic patients, the diagnosis may be revealed during attacks of ectopic appendicitis [5] or incidentally during radiological examination.

Complications of bowel rotation anomalies can be acute or chronic in adults, with acute complications including duodenal flange occlusions and total small bowel volvulus, which is rare in adults and has a poor prognosis. Chronic complications result from incomplete duodenal stenosis or chronic small bowel obstruction with mesenteric arterial insufficiency.

The diagnosis of small bowel volvulus can be made in a wide variety of circumstances: in an emergency in the presence of acute intestinal obstruction, or even a state of shock [6] that can lead to death, in the presence of repeated abdominal pain more or less associated with transit disorders; more rarely, following laparoscopic surgery, as has been described after cholecystectomy [7-11], appendectomy [8, 9] or obesity surgery.

Understanding the anatomy of the incomplete common mesentery is essential for intraoperative diagnosis and surgical treatment. In the typical form of 180° intestinal rotation known as incomplete common mesentery: the duodenum is short, interrupting after D2 with a Treitz angle situated to the right of the rachis; a caecum in a subhepatic position; a very short root of the mesentery, centred by the superior vascular-mesenteric axis and most often giving a pedicled aspect to the mesentery [10].

Open surgical procedure should be performed as the first choice when the surgeons confirm an acute occlusion. Inspection of the mesentery reveals the presence of one or more turns of the spiral. At this stage, it is important to note the direction of the volvulus (usually clockwise), the approximate number of turns and the staining of the small intestine [11].

Incomplete common mesentery is identified by the non-anatomical position of the cecum (and its possible adhesions opposite the duodenum), the position of Treitz's angle to the right of the rachis and the lack of docking of the mesentery whose root always appears very short [12].

The Ladd procedure remains the gold standard for the treatment of total small bowel volvulus (TSBV) due to rotational anomaly (RA) in both adults and children. This procedure consists of a reduction of the volvulus, followed by a complete common mesentery of the small intestine to avoid any recurrence of the volvulus. This is followed by a principled appendectomy [13, 14].

CONCLUSION

A dreadful and exceptional complication in adulthood. The high mortality rate due to delayed diagnosis makes it necessary for each practitioner to be aware of these rotational anomalies and the complications they may cause. As the clinical symptoms are non-specific, there should be no delay in performing radiological examinations.

The prognosis of the volvulus of the small intestine is linked to the intestinal obstruction, the microbial overgrowth wich it depends on the delay of the therapeutic management and the patient's comorbidities.

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