Total small bowel volvulus on common mesentery: A case report

Abstract:

Total small bowel volvulus on complete common mesentery is a rotation anomaly of the primitive intestinal loop, it is a classical pathology in the neonatal period, and exceptional in adults. It corresponds to an interruption of the intestinal rotation at 180°, thus constituting a common mesentery to the whole intestinal loop and a short root of the mesentery. This interruption of rotation is often accompanied by a defect of association. The diagnosis of total volvulus of the small intestine can be made either in an emergency following an acute occlusion or even a state of shock, or abdominal pain with transit disorders. We report the case of a 56-year-old female patient, admitted for an occlusive syndrome on total small bowel volvulus on common mesentery treated surgically by the LADD procedure.

Key words: small bowel volvulus on common mesentery, rotation abnormalities, LADD procedure.

Introduction:

"Common mesentery results from an abnormality in the rotation of the digestive tract. It is characterized by the persistence of an embryonic anatomical arrangement secondary to an abnormal rotation of the primitive umbilical loop, with a meso common to the entire intestine and an extremely short root of the mesentery".(1)
It is an exceptional pathology in adulthood and its symptomatology is very varied and is the source of many errors and delays in diagnosis and treatment.(2)
The standard treatment of intestinal mal rotation is the Ladd procedure, first described by Ladd in 1936.

Case Report:

This is a 56-years-old woman, who reported chronic abdominal pain with episodes of intestinal sub-occlusion. She was admitted in emergency for an occlusive syndrome with cessation of matter and gas, associated with food and bilious vomiting, evolving 2 days before hospitalization. The clinical examination found a conscious patient with a Glasgow score of 15/15, normotensive at 110/84Hmmg, eupneic at 18cycle/min, normocardial at 78bat/min, the abdominal examination found a distended abdomen, tympanic, no hepatomegaly nor splenomegaly, the rectal exam found an empty rectal ampulla.
An abdominal X-ray without preparation showed hydroaeric levels in the caecum (Fig.1) and on the abdomino-pelvic CT scan distension of the gallbladder at 55 mm and of the entire colonic framework, without transitional level (Fig.2).
The surgical exploration found a volvulus of the small intestine on common mesentery with 2 clockwise turns and an abnormal cecum attached to the duodenopancreatic block by the LADD flange. The procedure consisted of a section of the LADD flange, release of the duodeno-jejunal angle, Kocher detachment and mobilization of the duodenum, and positioning of the first jejunal loops in the subhepatic area and of the ileo-caecal crossroads in the left iliac fossa with principle appendectomy (Fig.3).

Postoperatively, the patient remained in dorsal decubitus position for 48 hours with a nasogastric tube in soft suction, transit was resumed at D3 postoperatively. The patient was declared discharged at D4 postoperatively.

Discussion:

The interruption of the 180° intestinal rotation leads to a position where the ileocaecal junction becomes attached in the subhepatic region. This attachment, if it is located opposite the duodenum, may inconstantly cause extrinsic compression of the first or second duodenum: this is called "LADD flange".(3)

Intestinal malformations remain very often asymptomatic and therefore undiagnosed in adulthood. At this age, the complete common mesentery is often discovered, either fortuitously, or in the context of a tumor or inflammatory pathology of the digestive tract. (4)

“The diagnosis of a total volvulus of the small intestine can be made in a wide variety of circumstances. In an emergency, in front of a picture of acute intestinal occlusion, or even a state of shock that can lead to death. In the event of repeated abdominal pain more or less associated with transit disorders” (2,3)

The unprepared abdomen (ASP) is the first-line examination in the event of an acute intestinal obstruction, which may show hydroaerobic levels of the greaves type, or may not show any specific signs of volvulus on the common mesentery.(5)

The reference examination for the diagnosis of total small bowel volvulus on abnormal intestinal rotation in adults is the abdomino-pelvic CT scan with injection of contrast medium, described by Fischer in 1981 under the name of whirl-like pattern, the sign of the "whirl" seems to be pathognomonic for the majority of the authors. It corresponds to the tendril of the mesentery visible in a median position, in front of the aorta and at the level of the superior mesenteric artery, around which the superior mesenteric vein and the proximal jejunum are "wrapped".(6)

“The treatment of acute small bowel volvulus on intestinal malrotation is a surgical emergency. Ladd's procedure remains the reference, both in adults and children. It consists of a median laparotomy followed by a reduction of the volvulus by detorsion (most often in an anticlockwise direction), section of the bridles responsible for the shortening of the mesenteric root, fixation of the intestine in a complete common mesentery to avoid any recurrence and finally a principle appendectomy. The evolution is generally favorable, provided that the diagnosis and the therapeutic management have been carried out rapidly”. (2,7)

Conclusion:

Total small bowel volvulus on common mesentery is a formidable and exceptional complication in adults. The clinical symptomatology being non-specific, the CT scan is the gold standard to make the diagnosis and the management is only surgical. The prognosis depends essentially on the delay in management.

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Consent

As per international standard or university standard, patients’ written consent has been collected and preserved by the author(s).

Fig.1: An abdominal X-ray without preparation showed hydroaeric levels.

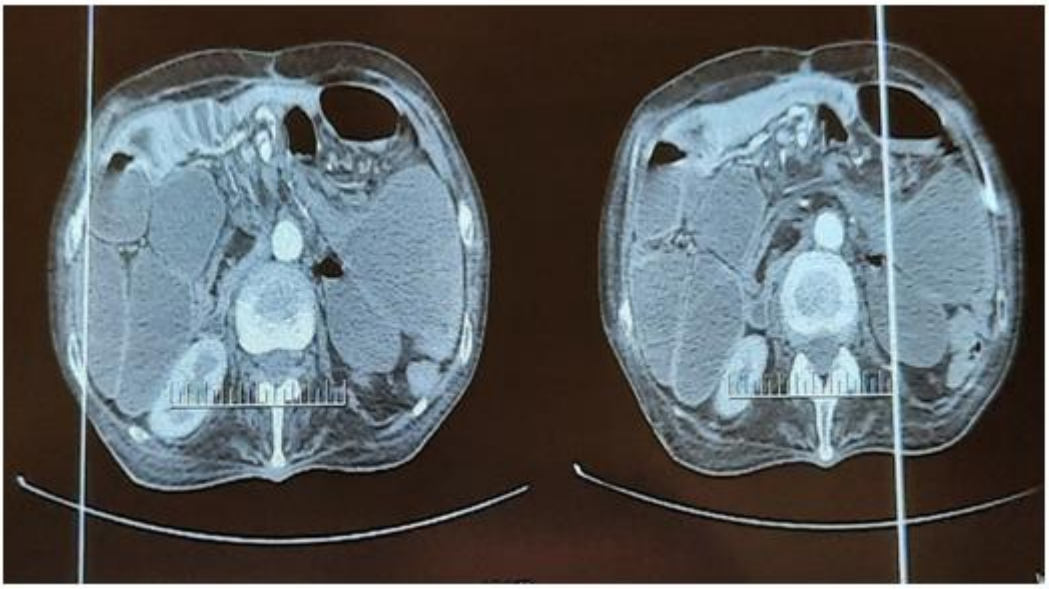

Fig.2: CT image showing the distension of the small bowel.

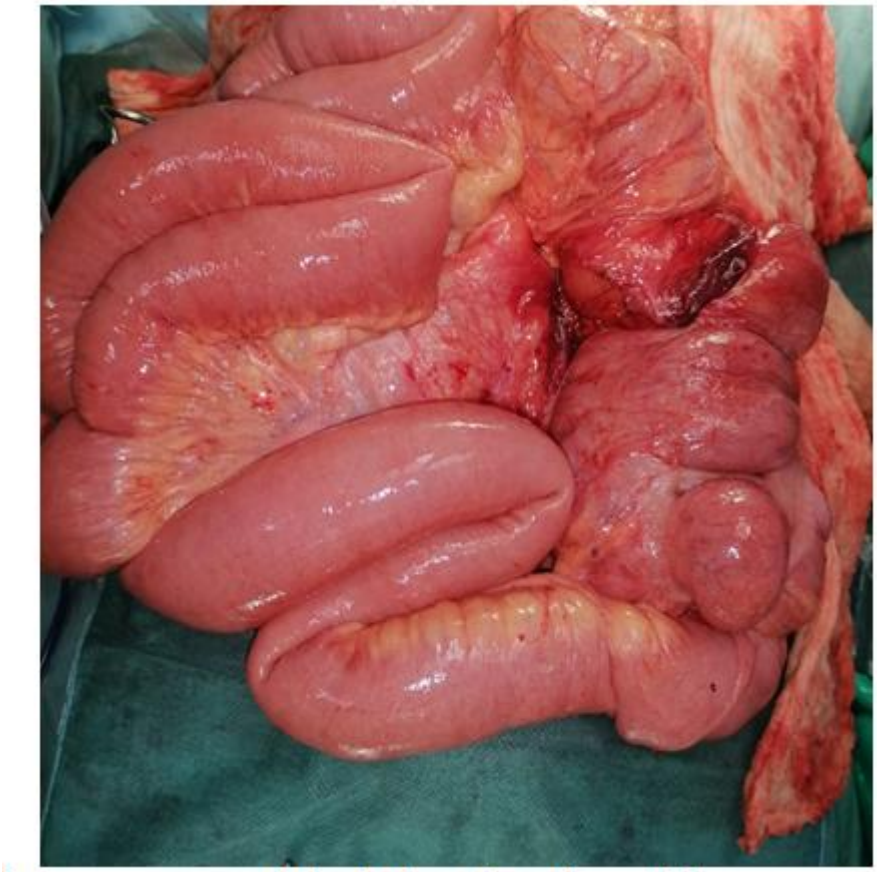

Fig.3: the arrangement of the hail on the right and the caecum on the left.

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