Intestinal Obstruction Caused by Small Bowel Volvulus

Abstract:

Small bowel volvulus is a surgical emergency, the etiology may be primary or secondary, and the clinical presentation is that of an acute intestinal obstruction. Abdominal radiography and abdominal CT scan is the key of the diagnostic. We present the case of a small bowel volvulus admitted to the emergency department with an acute bowel obstruction, the diagnosis was confirmed by abdominopelvic CT scan and the surgical procedure consists in of ileocecal resection with ileocolostomy, with good postoperative results.

Keywords: Intestinal obstruction. Small bowel volvulus , Diagnosis , Surgery

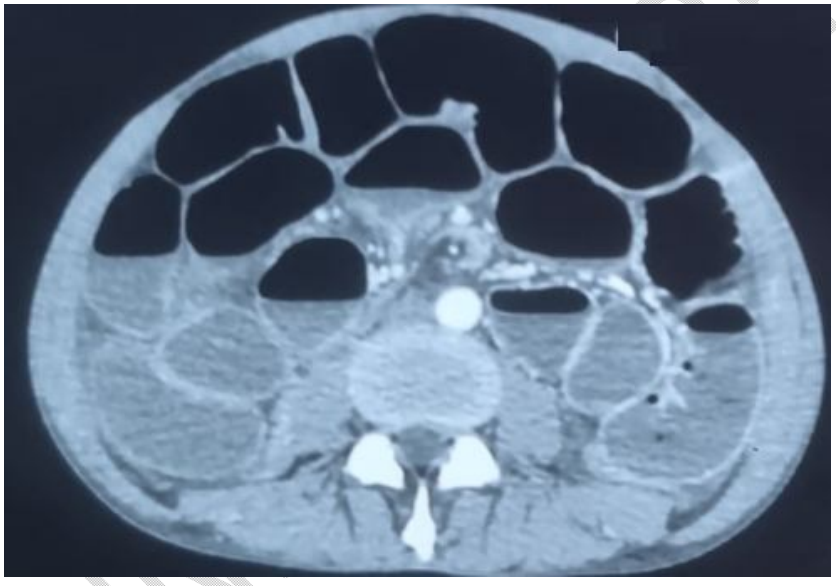
Introduction:

"Small bowel volvulus is a rare cause of intestinal obstruction in adult patients".(1) "It is a twisting of the small bowel around its mesenteric axis. It is a well-known condition in infants and children, but is rare in adults. Diagnosis is difficult because the symptoms resemble those of an acute abdomen".(2) "Prompt diagnosis and treatment are necessary to avoid intestinal necrosis".(3)

Case presentation:

The patient was 44 years old and was admitted to the emergency room for an occlusive syndrome that had been evolving for 7 days. On examination the patient was hemodynamically and respiratorily stable with a temperature of 37.7°C. Abdominal examination showed a distended and tympanic abdomen with generalized abdominal defense, the hernial orifices were free. A rectal examination showed an empty rectal ampulla without palpable mass. Abdominal radiography showed grelicular hydroaeric levels. Abdominal CT scan showed small bowel obstruction with moderate peritoneal effusion (Fig 1(A-B)).

(A)



(B)

Figure **1 (A-B) :**CT scan of the abdomen showing the twisting of the ileum around its mesentery.

After optimization of his general condition with a Naso-Gastric tube suction and intravenous fluids resuscitation, a decision was taken to proceed with an emergency laparotomy, under general anesthesia with endotracheal intubation. Preoperative prophylactic antibiotics were administered. Intraoperative findings (Fig. 2,3) a peritoneal effusion of medium abundance with the presence of a small bowel volvulus on incomplete common mesentery

with 2 counterclockwise spiral turns with small bowel necrosis from 1m extended from the ileocaecal junction to 2m40 from the duodenojejunal angle with perforation of distal ileal. The operation consisted of an ileocaecal resection taking 1m of small bowel and a double-barrel ileo-colostomy,
The postoperative follow-up was simple with resumption of transit on the 2nd day and the patient was declared discharged on the 4th day with heparin therapy. A restoration of continuity was performed 4 weeks after, which took place without complications.

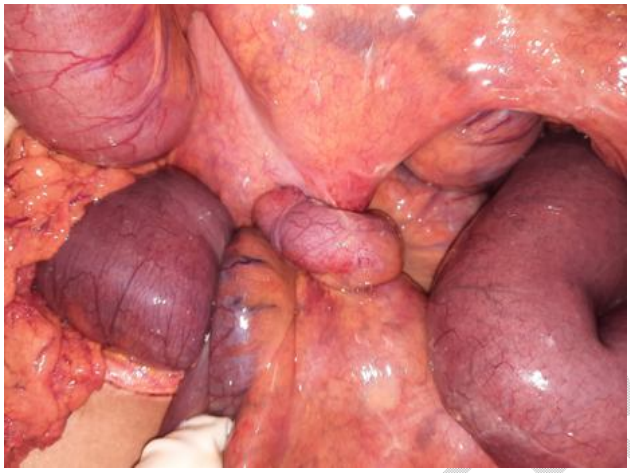


Figure 2: Intraoperative photograph showing volvulus of ileum

Figure 3 : Distal iléal perforation

Discussion:

“Small bowel volvulus is torsion of the small bowel around its mesenteric axis, resulting in mechanical obstruction of the small bowel (1-4-5), Mesenteric torsion also results in occlusion of the mesenteric vessels with intestinal ischemia and ultimately necrosis. It is a rare surgical emergency. It represents 1% of the etiologies of intestinal obstructions” (1-4-6-7). “Depending on its etiology; small bowel volvulus can be divided into two categories: primary and secondary. Primary volvulus occurs in abdominal cavities in which there are no predisposing anatomical abnormalities. On the other hand, secondary small bowel volvulus occurs in the presence of predisposing lesions, congenital or acquired, such as malrotations, flanges and adhesions” (1).

“The clinical presentation of small bowel volvulus is non specific. (4-8), the diagnosis is that of an acute intestinal obstruction (4) marked by abdominal pain, vomiting and cessation of fluid and gas”. “Physical examination shows abdominal meteorism with tympany, and pelvic touches are painless. This may lead to a delay in diagnosis. Mortality of small bowel volvulus ranges from 9% to 35%, but increases to 20% to 100% with intestinal necrosis” (2).

The unprepared abdomen is the first-line examination for acute intestinal obstruction, and can show hydro-aerosic levels of the small bowel (1-8).The barium enema can be useful in some cases, showing the Corskcrew sign (1). “Abdominal CT is the gold standard for the positive, topographical and severity diagnosis of small bowel volvulus (8); it is rapid, non-invasive and has a sensitivity ranging from 89 to 100%”. The "swirl" sign appears to be pathognomonic for the majority of authors, (1-4-7) contrast injection allows visualization of the verticalization, or inversion, of the superior mesenteric vessels, with a vein lying above or to the left of the artery (8).The "beak" sign is also another sign on CT showing the tapering of three dilated intestinal segments, resembling a bird's bent beak (3).

Surgery is the mainstay of management of primary small bowel volvulus(3), and it must be prompt to avoid intestinal gangrene and thus reduce morbidity and mortality. (4) The management of primary volvulus without intestinal necrosis is based on either simple devolvulation with fixation, or to gallbladder resection in all cases of volvulus, whether necrotic or not. Treatment of secondary volvulus is based on cure of the underlying cause, which will guide subsequent management (3-9).

Conclusion :

Primary SBV is an extremely rare situation (3).the clinical presentation is not specific. The diagnosis can be made by CT scan and must be made early to avoid unnecessary bowel resections. (4) Treatment often involves urgent surgical exploration.

Consent

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

Ethical Approval:

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

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