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The Ileo-Sigmoid Knotting a Rare cause of Acute Intestinal Obstruction: About a Case

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Abstract | **Case Report**

The ileosigmoid knotting is an exceptional clinical entity, it is a surgical emergency characterized by a strangulation of the small bowel by forming a knot around the base of the sigmoid colon with risk of rapid necrosis of the small bowel and colon. We report the case of a young women admitted for intestinal obstruction; and in which the diagnosis of ileo-sigmoid knotting was made on CT. Through this case and a review of the literature we will define the diagnostic, therapeutic and prognostic aspects of this rare clinical entity.

Keywords: Ileosigmoid volvulus, CT, intestinal ischemia**.**

INTRODUCTION

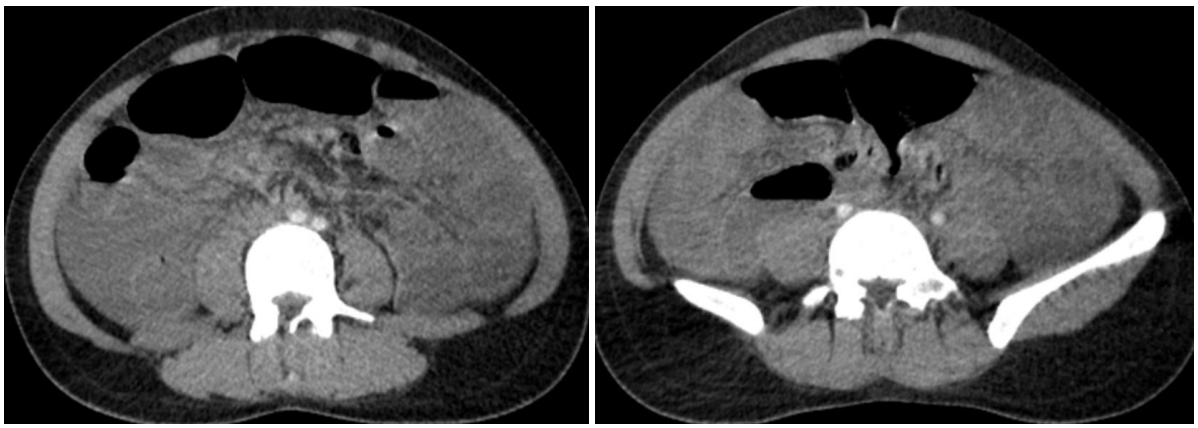
Spontaneous double ileosigmoid volvulus or ileosigmoid knotting is a rare cause of acute bowel obstruction. It is associated with high mortality requiring appropriate and rapid surgical management. Despite its relative rarity, this entity must benefit from an early and precise diagnosis. Knowledge of its CT appearance appears essential for optimal management. It is the result of an ileal loop wrapping around the foot of the sigmoid loop. His radiological description thus includes an aspect of volvulus of the sigmoid, volvulus of the hail and retention of material in a non-distended proximal colon.

CASE REPORT

We report the case of a 32-year-old woman with no particular pathological history, presented to the emergency room for diffuse and intense abdominal pain associated with vomiting with non-discharge of gas or stool, abdominal examination found diffuse abdominal meteorism with generalized abdominal guarding with no other associated signs, particulary without septic syndrome, the biological assessment is normal, the abdominal radiograph without preparation (ASP) demonstrates air distension of the sigmoid loop without air-fluid level. An abdominal and pelvic CT scan is immediately performed: spiral axial acquisition in millimeter sections of 1 mm without and with enhancement. Reconstructions are performed in the coronal and sagittal plane. This scanner objectifies a double volvulus: on the one hand, we note a distention of the sigmoid with an aspect of volvulus (figure 1: A) with rotation of the mesenteric vessels (inferior) (figure 1. B). On the other hand, there is a distension of the ileal small loops and a defect of parietal enhancement, signing an ischemic with a transitional zone at the feet of the sigmoid loop and a second rotation of mesenteric vessels (branches of the mesenteric artery superior) drawn to the midline above the foot of the sigmoid volvulus (Figure 2). A great abundance of peritoneal effusion, witness to digestive suffering. The patient underwent emergency surgery (less than 24 hours after the onset of symptoms), confirming sigmoid volvulus on a knot made by a small loop at the foot of the sigmoid loop (figure 3). This double occlusion is complicated by extensive necrosis of the bowel loops. During this operation, a resection of approximately 70 cm of hail is performed. The post-operative follow-up was simple.

A B

Figure 1: Abdomino-pelvic CT with enhacement (arterial phase), coronal (A) and sagittal (B) MPR reconstructions, A: Volvulated sigmoid loop, B: Rotation of mesenteric vessels in sagittal MPR reconstruction



A B

Figure 2: Axial sections of an abdomino-pelvic CT with enhacement (portal phase), A: distension of the sigmoid loop and ileal bowel loops with lack of parietal enhancement indicating ischemic, B: Tapered end of the sigmoid loop (double transition zone)

Figure 3: Peroperative aspect of the ilio-sigmoid knotting with ischemic necrosis of the ileal bowel loops

DISCUSSION

The ileosigmoid knotting corresponds to the simultaneous strangulation of the ileum and the sigmoid colon. Rare in the West [1, 2], the ileosigmoid knotting, like sigmoid volvulus, is more common in Asia and Africa where short clinical series have clarified the natural history and pathophysiology of the ileosigmoid knotting [3-7]. But which remains rare, representing 7.6% of all sigmoid volvulus [7]. This mechanism by double strangulation of the mesenteric vessels destined for the small loops and the sigmoid is responsible for almost immediate ischemic suffering. Early diagnosis of this double volvulus is necessary in order to treat without delay and thus avoid digestive necrosis. Despite a clinical picture suggestive of digestive pain, radiological diagnosis is difficult in view of the atypia of CT signs. The diagnosis is unfortunately often intraoperative. The pathophysiology of this type of injury is controversial. Atamanalp *et al.*, evoked anatomical predispositions with a hypermobile small intestine, an excessively long meso or redundant sigmoid loops with a narrow base of implantation [6], whereas Shepherd only explains the NIS by a hypermobile small intestine coming to roll up at the foot of the narrow meso sigmoid [8]. Alver, *et al.*, [7] describe 3 types of NIS, the mechanisms of which vary according to the digestive segment responsible for the torsion (active segment): type I is represented by a small loop wrapping around a passive sigmoid loop, type II results from the opposite phenomenon where the sigmoid torsion, active, attracts passive hail, finally, type III corresponds to the exceptional situation where the ileo-caecal junction "ties" the sigmoid loop. These mechanisms explain the extreme severity of the tables and the poor prognosis of this type of attack. In our case, the time between the onset of pain and the appearance of digestive pain was very short, despite rapid treatment. Abdominopelvic CT scan with injection of iodinated contrast product identified the double occlusion with volvulus of the sigmoid and small intestine and showed signs of ischemic digestive pain; all of which pose the indication for emergency surgery. Two CT signs appear more specific for the diagnosis of ileosigmoid knotting: in addition to the double occlusion, the coiling of the vessels appears to be more extensive than in a simple sigmoid volvulus [4]. This aspect could be explained by the fact that the two volvulus overlap with a few millimeters of difference. On the other hand, one can visualize the medial deviation of the cecum with a tapered aspect of its internal edge. This aspect can be explained either by an attraction of the peritoneum of the left parieto-colic gutter towards the center of the knotting, or by a mass effect of the dilated small loops intercalating between the left wall of the abdomen and the descending colon. Even if the caecum is deviated towards the midline in many patients, this tapering aspect of its medial surface associated with the deviation towards the midline of the descending colon should suggest the diagnosis of an ileosigmoid knotting [4].

CONCLUSION

The ileosigmoid knotting is a rare and serious cause of primary intestinal obstruction by bifocal strangulation. Its rapid evolution towards digestive necrosis secondary to vascular strangulation, should prompt urgent surgery in view of the discovery on the CT of an aspect of double volvulus (sigmoid and ileal).

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