

## Cecal Volvulus on a Common Mesentery: A Rare Case in an Adult

MAJD ABDESSAMAD<sup>1</sup>, ZARHOUNI BAALAL MALIK<sup>2</sup>, MAROUANE MOUNTASSIR<sup>3</sup>, ABDELHAK ETTOUSSSI<sup>4</sup>, KHADIJA KAMAL<sup>5</sup>, BOUALI MOUNIR<sup>6</sup>, ABDELILLAH EL BAKOURI<sup>7</sup>, EL HATTABI KHALID<sup>8</sup>

<sup>1,2,3,4,5,6,7,8</sup> Department of general surgery, IBN ROCHD University hospital of Casablanca, Casablanca, Morocco

**ABSTRACT:** Atypical adult persistence of common mesentery is a well-known anomaly, which could lead to acute complications though infrequently. A 30-year-old female patient who was admitted with acute intestinal obstruction and was found to have cecal volvulus on common mesentery during surgery, adds to the literature. This report describes the epidemiological, clinical, and therapeutic features of the condition.

**KEYWORDS:** Adult; Common mesentery; Acute intestinal obstruction; Volvulus.

### INTRODUCTION:

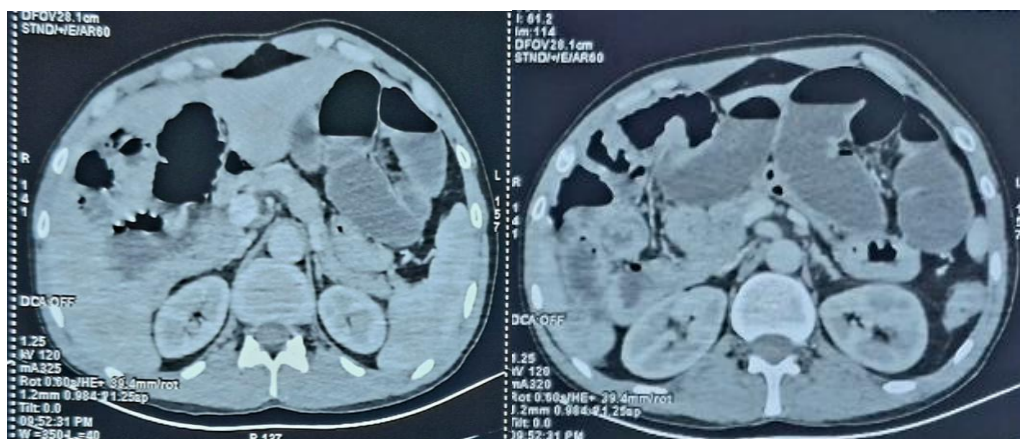
Cecal volvulus over a common mesentery is a rare etiology of acute intestinal obstruction in adults. Due to its rarity, it can lead to late diagnosis despite a severe clinical presentation [1,2]. It is an emergent condition requiring surgical intervention. We report a case of partial cecal volvulus on a common mesentery diagnosed preoperatively by acute intestinal obstruction. The purpose of this research is to examine epidemiological features, diagnostic techniques, and treatment possibilities for this disease.

### CASE PRESENTATION:

A 30-year-old patient was admitted to the emergency department of the University Hospital of Casablanca with acute abdominal pain. He presented a history of more than 24 hours of absence of bowel movements and flatus, with episodes of vomiting. Medical history was marked by recurrent abdominal pain since childhood.

On clinical assessment, the patient was hemodynamically stable and alert with normal respiratory patterns. The abdomen was tympanic and distended, and rectal examination revealed an empty rectal ampulla.

The CT scan showed gross hydro-aeric distention of the cecum, predominantly liquid, at pelvic level, with an aerated retrocecal appendix. The maximum diameter of the cecum was 105 mm. Dilatation of the ileal loops proximal to the maximum diameter of 38 mm was also noted. There was a transitional level, with the beak sign and a left-lateral pelvic fat notch at L5 level. Also, a colonic framework collapse was present with displacement of the transverse colon and right colon to the left. A whirlpool sign appearance at L2-L3 level suggested a twist of the superior mesenteric vein and artery, along with an inversion of the relative positions. A positional abnormality of the small intestine was present with upward and to the right displacement.



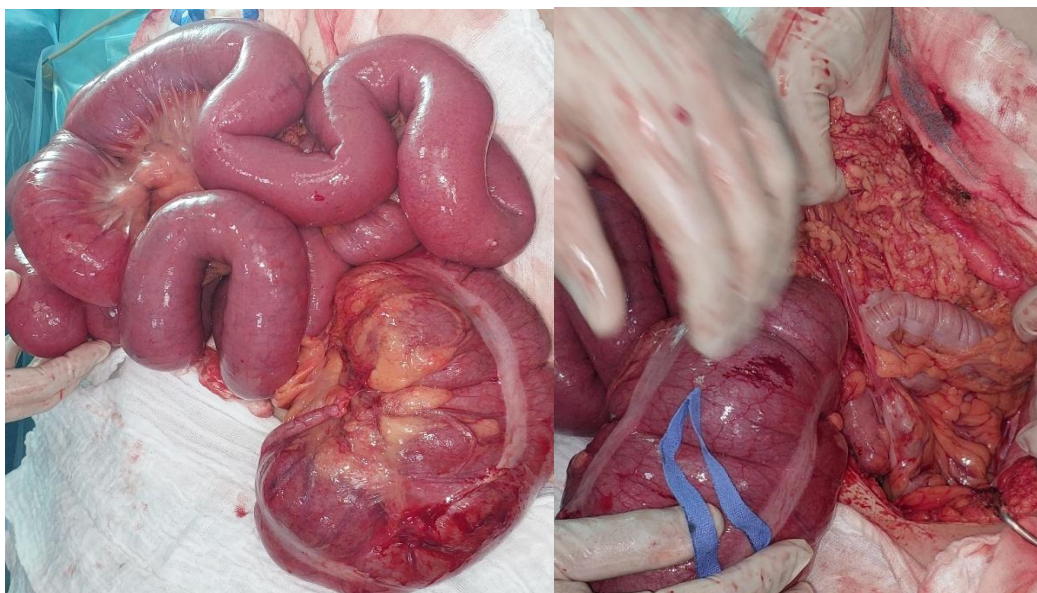
**Figure 1 : Figure2 :**

CT images show a left-laterally located pelvic transitional level, with distension of the upstream small bowel loops.

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These radiologic features suggested the mechanical origin of acute bowel obstruction amenable to urgent operation. A supra- and sub-umbilical median laparotomy revealed a huge cecal volvulus displacing the liver towards the left side and rotating on a cecocolic adhesion. Operation revealed an incomplete type 1 common mesentery, according to the GROB classification, with abnormal juxtaposition between duodenojejunal flexure and ileocecal valve. The remaining abdominal viscera was normal.

The adhesion was released, and derotation of the cecum was performed, which was maintained in its macroscopically viable state. Appendectomy was also performed. The postoperative period was smooth and without complications. The patient, on follow-up a month later, returned to his normal activities without any particular sequelae.



**Figure 3 et 4:**

**Intraoperative images of cecal volvulus accompanied by upstream bowel distension.**

### DISCUSSION:

The common mesentery is a result of an embryonic developmental anomaly with a failure of rotation of the tube of the gut. It is a state of persistence of a fetal morphological pattern due to defective rotation of the primitive umbilical loop, leading to a single common mesentery for all the intestine and a very short root of the mesentery [3]. This defect of rotation usually accompanies an adhesion defect. When rotation of the vitelline loop stops at 90°, it results in a complete common mesentery, with the colon on the left and the small intestine and mesentery on the right. Most common in our experience was a stop at 180°, with consequent subhepatic fixation of the cecum, with a higher risk of volvulus [4].

The cecum, after the sigmoid colon, is most frequently involved in volvulus, followed by the left colic flexure and transverse colon [5]. Cecal volvulus most frequently occurs due to two mechanisms: first, twisting of the cecum, typically secondary to an inflammatory process or previous surgery, and second, distension of the cecum, which can be exacerbated by pregnancy, childbirth, certain gynecologic tumors, an obstruction of the distal colon, or chronic constipation [1].

Despite the persistence of the common mesentery in adults being typically asymptomatic and well-tolerated, it can in very rare cases lead to a volvulus [3]. This is uncommon in only 0.2% to 0.5% of adults and typically diagnosed within the first two weeks of life. There is poor evidence in the literature for late acute complications [6]. In adults, it is found incidentally and could be identified incidentally by imaging studies or while performing surgery, ideally by doing appendectomy for an ectopic appendix [7]. The symptoms generally are nonspecific in nature; the mesenterium commune would rather be considered for suspicion in cases of adults having acute or chronic intestinal obstruction [3].

Cecal volvulus clinically presents as acute intestinal obstruction by strangulation, in the form of crampy periumbilical, subhepatic, or right iliac abdominal pain. Clinical presentation shows an empty right iliac fossa in 36% to 76% of cases, along with an empty rectal ampulla [1-4,6-8]. Imaging forms the basis for diagnosis. An unprepared abdominal X-ray is useful in making the diagnosis in over half of cases by demonstrating hydro-aeric distension of the cecum, which may be median or laterally right or left. In 50% of instances, a "coffee bean" or "tear drop" sign is present. A water-soluble enema demonstrates complete opacification of the colon but without cecal opacification and a "bird's beak" sign in which the contrast material ceases. Computed tomography (CT) shows a pathognomonic "whirlpool" image, which is equivalent to the organ torsion and superior mesenteric vessels twisting.

Management in the therapeutic modality is directed to three objectives: alleviation of the torsion, management of evolving complications, and prevention of recurrence. Operation is the standard treatment. It can be conservative, involving straightforward detorsion and cecopexy to fix the cecum to the posterior peritoneum, or more extensive, involving cecotomy, right hemicolectomy,

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or ileocecal resection depending on the state of the cecum and associated lesions [5]. Endoscopic treatment, even on a theoretical basis, is unsuccessful in over 75% of instances and is only performed in the high-risk surgical patient or when surgery is contraindicated, such as in the pregnant patient [9].

### CONCLUSION:

The article presents to the reader a rare presentation of cecal volvulus on a normal mesentery in an adult. Due to the absence of characteristic symptoms, diagnosis may be difficult to establish. But these diagnostic constraints should not delay surgical intervention, which is still necessary to prevent the development of complications and ensure a good prognosis.

### REFERENCES

- 1) Bougtab A, Amraoui M, Benchekroun BA et al. Volvulus du cœcum. Médecine du Maghreb 1996 ; 56 : 6-8.
- 2) Jarry J, Razafindratsira T, Bodin R, Lepront D, Durand-Dastes F. A propos d'un cas de mésentère commun complet de l'adulte révélé par une complication occlusive. Press Med. 2008 ; Tome 37 (11) : 1689-92.
- 3) Plouard C, Rivoal E, Broussine L, Blondin G, Trellu X. Volvulus de la grêle sur mésentère commun : Intérêt de l'échographie doppler. A propos d'un cas. J Radiol. 2000 ; 81 : 151-3.
- 4) Zerouali N, Touzani K, Elfares F, Lamhamedi A, Bellakhdar A, Abi F. Volvulus du colon droit et mésentère commun chez l'adulte. J Chir. 1985 ; 122 : 473-7.) : 220-4.
- 5) Abita T., Lachachi F., Durand-Fontanier S., Maisonnnette F., Roudaut PY, Valleix D, Descottes B. Les volvulus du cœcum. J Chir. 2005 ; 142(4) : 220-4.
- 6) Rousset J. Accident dus aux défauts de rotation de l'anse ombilicale primitive. Mémoires de l'academie de chirurgie 1955 ; 81 :477-81.
- 7) Sarazin R, Voisin R, Sarroste J, Manabie B. Mésentérium commune découvert chez l'adulte à l'occasion d'une appendicite aigue. Journal de médecine de Bordeaux 1967 ; 144 : 1556-61.
- 8) Anderson R, Lee D. Acute coecal volvulus. Br J Surg. 1980; 67: 39-41.
- 9) Anderson JR, Welch GH. Acte volvulus of the right colon: an analysis of 69 patients. World J Surg. 1986 ; 10 : 336-42.