Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Surgery

Acute Cecal Volvulus: Case Report and Literature Review

YASSINE Mohamed[1*], KALLOUT Ibrahim[2], MAZZOUR Oussama[2], JBILOU Aymane[2], AGGOURI Younes[2], AIT LAALIM Said[2]

[1]Department of General Surgery and Digestif Oncology, University Hospital Mohammed VI of Tangier, Morocco
[2]Faculty of Medicine and Pharmacy of Tangier, Abdelmalek Essadi University, Tangier

DOI: https://doi.org/10.36347/sjmcr.2025.v13i06.00X | **Received:** 05.05.2025 | **Accepted:** 10.06.2025 | **Published:** N/A

***Corresponding author:** YASSINE Mohamed
Department of General Surgery and Digestif Oncology, University Hospital Mohammed VI of Tangier, Morocco

Abstract | **Case Report**

Cecal volvulus is the second most common type of colonic volvulus, following sigmoid volvulus [1]. It occurs due to torsion or hyperflexion of an enlarged, poorly fixed, and hypermobile cecum [2]. Clinically, it presents as an acute bowel obstruction often accompanied by strangulation. Abdominal computed tomography (CT) provides crucial diagnostic information [1]. Initial management should prioritize proper resuscitation, with therapeutic decisions tailored based on factors such as patient age, medical history, viability of the colon, and overall clinical condition [3]. The optimal treatment involves surgical excision, with ileocecal resection and right hemicolectomy demonstrating the best outcomes [4]. In this paper we will discuss a rare case of volvulus occurring in 64 years with a review of the literature to clarify both its diagnosis and its management.

Keywords: Intestinal occlusion, volvulus, cecum, right hemicolectomy.

INTRODUCTION

The first description of cecal volvulus is attributed to Rokitansky in 1837 [1]. This condition seemed rare since it was responsible for 1% of intestinal obstructions [2]. Despite numerous publications, the symptomatology and management of this pathology remain controversial [2,3]. We report the observation of our second case, treated in the emergency room for cecal volvulus six years after our department opened.

CASE PRESENTATION

A 64-year-old man from Morrocco with no significant medical history was admitted to the emergency room presenting with signs of bowel obstruction. He exhibited an occlusive syndrome characterized by absence of gases and stools, accompanied by vomiting. The patient's general condition remained stable. These symptoms developed progressively over the past five days.

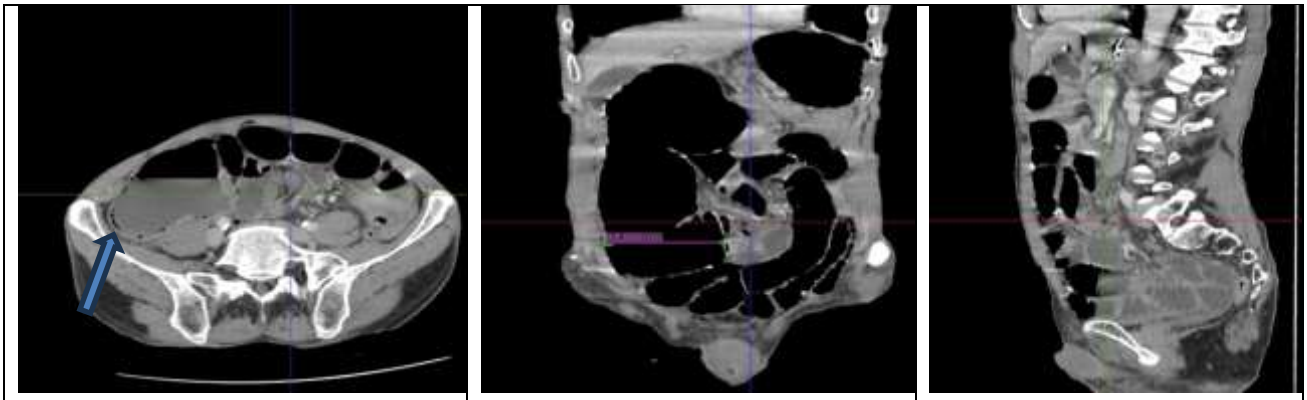
The patient was conscious and afebrile. He was tachycardic with a heart rate of 102 beats per minute, with a blood pressure of 100/80 mmHg. Pulse oximetry showed 96% on ambient air, and respiratory rate was 25 breaths per minute. Signs of dehydration were evident, including skin folds and dry oral mucosa. Abdominal examination revealed distension and tenderness on palpation, with hypertympanism. The hernial orifices were free of hernias. Rectal examination revealed an empty rectal vault.

Biology: white cells at 5000 elements/mm3, C Reative Protein CRP: 210 mg/L, correct renal function (urea =0.3 g/l creatinine = 10 mg/l) and ionic imbalance with hypokalemia (potassium = 3 mmol/L).

Medical Imaging:
Abdominal X-ray: Upright position. Fluid level in the inflated cecum. Gas-filled ileal loops laterally to the cecum (**fig 1**).

Figure 1: Voluminous hydro-aeric level (HAL) reflecting the distension of the caecum

Injected abdominal CT scan on the three slices of the contrast-enhanced CT scan during the portal phase, a mechanical colonic obstruction is seen extending up to 86 mm at the level of the cecum, upstream of a transition zone forming a whirl-like twist (Whirlpool sign) involving the transverse colon and the mesenteric vascular pedicle, with signs of intestinal distress characterized by bowel wall pneumatosis. (fig 2):



a **b** **c**

Figure 2: a mechanical colonic obstruction is seen extending up to 86 mm at the level of the cecum, upstream of a transition zone forming a whirl-like twist (Whirlpool sign) involving the transverse colon and the mesenteric vascular pedicle, with signs of intestinal distress characterized by bowel wall pneumatosis ( ).

After initial assessment, the decision was made to perform an operation on the patient. Intraoperatively we noted a Ileo-caeco-colic volvulus, with signs of parietal suffering (**fig 3,4**).

Figure 3: ileo-caeco-colic volvulus. we note an appendix at the top and in the middle ( )

Figure 4: **Demonstration of three twists (turns) between the ileum, cecum, and ascending colon with signs of bowel wall distress**

We performed a right hemicolectomy with end-to-side ileo-transverse anastomosis (**fig 5**). The immediate postoperative period and after six months were without any particularity. pathological examination returned without signs of malignancy.

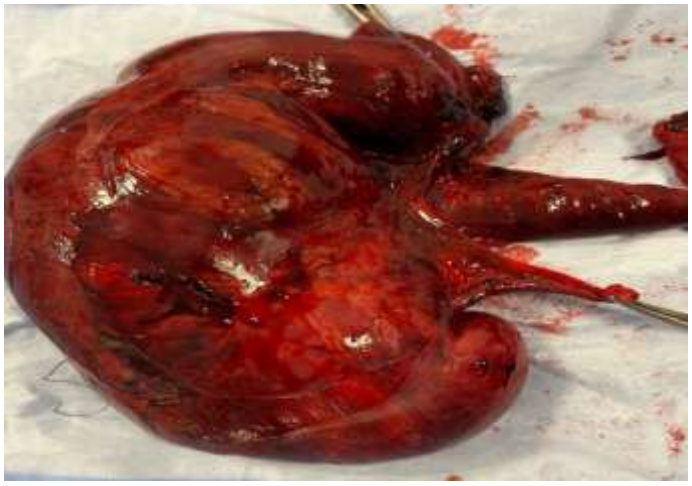


Figure 5 : Right hemicolectomy surgical specimen

DISCUSSION

Volvulus is a condition where in a loop of bowel and its mesentery twist on a fixed point at the base reference. It occurs when a large, mobile segment of colon has a narrow, fixed mesenteric attachment, which readily allows axial rotation to occur [5]. Once twisted, gas and fluid accumulate in the obstructed loop, leading to distention, ischemia, gangrene, and perforation [6]. Volvulus may arise in the sigmoid colon, cecum, splenic flexure, and transverse colon, in descending order of frequency [7].

Cecal volvulus accounts for 10 to 40 % of colonic volvulus [1]. It can be divided into two sub-groups: axial ileocolic volvulus, which accounts for 90 % of cases, and cecal bascule, which accounts for 10 % of cases [4]. In the conventional ileo-colic volvulus the torsion is usually a counterclockwise rotation in an oblique fashion, also displacing the ileum [1,4,8]. In cecal bascule the cecum rotates in a horizontal plane anteriorly upward, with the obstruction at the point of folding [1,4]. A prerequisite for cecal volvulus to occur is an abnormal mobility of the cecum that results from improper developmental fusion of the mesentery of the cecum and the ascending colon with the posterior parietal peritoneum in the right gutter [9]. Despite this anatomic predisposition, the cause and predisposing factors are multifactorial and include adhesions and recent surgical manipulation [1,4,8,9].

COURTY divided volvulus of the right colon into three types: caeco-colic, Ileo-caeco-colic, axial torsion. This latter type seems to be similar to the first [1].

The intensity of clinical signs and symptoms varies based on the amount of bowel involved and the degree and duration of the torsion [8]. Generalized abdominal pain (90%), abdominal distension (80%),

constipation or constipation (60%), and vomiting (28%) are common symptoms [4].

Diagnosis is rarely based solely on clinical signs, and abdominal x-rays play an essential role in diagnosis. The dilated colon has a unique fluid level that can be found anywhere in the abdomen, depending on its initial position, gas distension degree, and site, and torsion degree and duration. It is typical to observe distal small bowel loops on the right side of the dilated colon, and the distal colon does not have much gas. Other radiologic findings include a coffee bean sign and a CT whirl sign. The radiologic diagnosis of cecal volvulus can be made with confidence in 90 % of cases. Differential diagnosis includes gastric dilation, sigmoid volvulus, small intestinal volvulus, and colonic obstruction with a competent ileocecal valve [3,4].

Despite the fact that there has been successful non-operative decompression by colonoscopy, it was not popular due to the high failure rate [7,10,11]. Emergency surgery is necessary for most patients with a cecal volvulus.

At laparotomy, determination of viability of the bowel is the initial step in the management. Further management depends on whether the bowel is viable or gangrenous. Non viable bowel requires immediate excision of the involved loop, which can be achieved by right hemicolectomy. Untwisting under these circumstances is not advised, because it has been shown to result in irreversible septic shock [3]. The decision as to primary anastomosis vs. ileostomy must be based on the patient's condition and the condition of the bowel at the time of surgery [11,12]. The majority of teams prefer primary anastomosis of a healthy terminal ileum, although dilated and unprepared, on a viable transverse colon not dilated [12].

The most commonly used nonresectional procedures are cecopexy and cecostomy. Cecopexy by anchoring the right colon to the parietal peritoneum, prevents recurrence of cecal volvulus by eliminating prerequisite hypermobility [2]. Cecostomy has also been used with variable results [13]. It involves the placement of a cecostomy tube through a small incision on the cecal wall, bringing the cecum to the anterior abdominal wall and bringing the tube through a small incision to the skin. It has the advantage of not only fixing the bowel but also decompressing the distended segment.

Colonoscopy can be performed showing the volvulus and a more or less deep parietal colic ischemia [14,15]. Endoscopic detorsion is feasible in the absence of severe ischemia but carries a significant risk of perforation [14,15].

The treatment has three goals: to remove the obstacle by detorsion, if possible, to treat progressive complications and prevent recurrence [16]. It remains controversial. The right hemicolectomy with primary anastomosis is recommended by several teams even in the absence of colic necrosis because it eliminates the risk of recurrence. Caecostomy is effective in preventing relapses but has a high risk of wall infection and risk of digestive fistula requiring intervention of closure. Infectious complications are less common with cecopexies but relapses are more frequent. The coelioscopic first [17] is rarely used in emergency causes distension of the cecum and exposure difficulties. It could be performed after detorsion and exsufflation endoscopic.

CONCLUSION

The volvulus of the caecum is the second cause of colic volvulus, after that of the sigmoid colon. Two mechanisms are described: torsion (90%) and bascule (10%). The clinical picture is that of an acute intestinal obstruction. Abdominal X-ray provides diagnosis in more than half of the cases by showing hydro-aeric level of the small intestine and cecal distension with absence of air in the colon. The abdominal scan provides a rapid diagnosis by showing the typical image of whirl sign, and major cecal distension.

Treatment should be surgical: the reductions under colonoscopy and enema water-soluble are ineffective. Excision surgery (ileocecal resection and right hemicolectomy) gives the best immediate and long-term results. Caecopexia should be discussed in the absence of necrosis and in elderly patients or those with severe comorbidities. Cecostomy seems to be unsuitable for the treatment of this pathology.

Conflict of Interest Statement: None Declared

Funding: None

REFERENCES

1. Theuer C, Cheadle WG. Volvulus of the colon. Am Surg 1991; 57:257-262.
2. Wolfer JA, Beaton LE, Anson BJ. Volvulus of the cecum. anatomical factors in its etiology. Surg Gyn Obst 1942;882-94.
3. The Management of Cecal Volvulus. T. E. Madiba, M.Med.(Chir), F.C.S.(SA), S. R. Thomson, Ch.M., F.R.C.S. From the Department of Surgery, University of Natal, Durban, South Africa. DOI: 10.1007/s10350-004-6158-4
4. Les volvulus du cæcum. T. Abita, F. Lachachi, S. Durand-Fontanier, F. Maisonnette, P.Y. Roudaut, D. Valleix, B. Descottes. Service Chirurgie Viscérale et Transplantation, CHU Dupuytren – Limoges. email: youvey@yahoo.fr
5. Reilly PM, Jones B, Bulkley GB. Volvulus of the colon. In: Cameron JL, ed. Current surgical therapy. St Louis: Decker Inc, 1992:170–4.

6. Avots-Avotins KV, Waugh DE. Colon volvulus in the geriatric patient. Surg Clin North Am 1982;62:249–60.
7. Ballantyne GH, Brandner MD, Beart RW Jr, Ilstrup DM. Volvulus of the colon. Incidence and mortality. Ann Surg 1985;202:83–92.
8. Haskin PH, Teplick SK, Teplick JG, Haskin ME. Volvulus of the cecum and the right colon. JAMA 1981;245: 2433–5.
9. Shoop SA, Sackier JM. Laparoscopic cecopexy for cecal volvulus. Surg Endosc 1993;7:450–4.
10. Anderson MJ Sr, Okike N, Spencer PJ. The colonoscope in cecal volvulus: report of three cases. Dis Colon Rec-tum 1978;21:71– 4.
11. Anderson JR, Welch GH. Acute volvulus of the right colon. An analysis of 69 patients. World J Surg1986;10: 336 – 42.
12. Gupta S, Gupta SK. Acute caecal volvulus: report of 22 cases and review of the literature. Ital JGastroenterol 1993;25:380 – 4.
13. Benacci JC, Wolff BG. Cecostomy: therapeutic indications and results. Dis Colon Rectum 1995;38:530–4.
14. friedman JD, Odland MD, Burbrick MP. Experience with colonic volvulus. Dis Colon Rectum. 1989; 32(1): 409-PubMed | Google Scholar
15. Neil DA, Reasbeck PG, Reasbeck JC, Effeney DJ. Cecal volvulus: ten years experience in an australian teaching hospital. Ann R Coll Surg Engl. 1987; 69(2): 283-285. PubMed | Google Scholar
16. Katoh T, Shigemori T, Fukaya R, Suzuki H. Cecal volvulus: Report of a case and review of Japanese literature. World J Gastroenterol. 2009 May 28; 15(20): 2547-2549 ISSN 1007-9327. PubMed |Google Scholar
17. Shoop SA, Sackier JM. Laparoscopic cecopexy for cecal volvulus: case report and a review of the literature. Sure Endosc. 1993Sep-Oct; 7(5): 450-454. PubMed | Google Scholar