

Cecal Volvulus: About 2 Cases

I Konaté, A Toure, M Charfi, P Ba, I Ka, M Seck, M Cisse, C Toure

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Abstract

Cecal volvulus is an acute or chronic and recurrent cecum twisting. This is the second location after the sigmoid colon. It is a surgical emergency. Preoperative diagnosis is difficult and surgical treatment is controversial. We report our experience in the management of 2 cases of cecal volvulus in our department in Dakar.

Case 1: A 38 year old female patient with no pathological individual history was admitted for an occlusive syndrome lasting for 5 days. Abdominal examination revealed a symmetrical bloating without defense or contracture. Digital rectal examination found feces in the rectum. Blood cell count (BCC) objectified hyper leukocytosis at 11,900 / mm³ with neutrophil predominance (89%). An abdomen X-ray revealed small bowel and colic air-fluid levels. During clinic surveillance the patient presented secondary fever of 38 °C and diffuse abdominal sensibility. The hemodynamic status remained stable and hourly urine output was estimated at 1.5ml/kg/hour. Exploration by midline laparotomy objectified cecal volvulus in a clockwise spiral turn, the cecum was completely free, distended, left projected with lesions of ischemic nature. A cecal and 10 cm of terminal ileum resection with end-to- end ileocolic anastomosis was performed. Abdominal cavity drainage was performed with a Delbet drain. The postoperative course was uneventful with digestive laxation at the 3rd postoperative day. The patient was sent back home on the 8th post- operative day.

Case 2: A 40 year old male patient was admitted for an occlusive syndrome lasting for 3 days. Examination on admission had objectified a patient in fairly good condition without fever. The abdomen was distended with diffuse sensibility without defense or contracture. A blood cell count showed leucopenia with 4700 white cells/ mm³. Abdominal X-ray highlighted many small bowel type hydro-aeric levels. A rectal enema was performed without improvement. The patient underwent laparotomy. During exploration an objectified cecal volvulus was found with ileal involvement. the cecum was distended with ischemic lesions. We performed ileo - cecal resection. Restoration of continuity was done immediately by end-to-end ileocolic anastomosis. The postoperative course was uneventful. The patient was discharged on the 5th postoperative day.

Conclusion : The cecal volvulus is a rare abdominal emergency. The surgical resection (ileocecal resection and right hemicolectomy) gives the best immediate and long term results. Early diagnosis and prompt management before complications occurrence manage to reduce the mortality rate.

INTRODUCTION

Cecal volvulus is an acute or chronic and recurrent cecum kinking or twisting sometimes involving a variable portion of the ileum and limited to the area of abnormally mobile right colon [1]. The cecum is the second location of the colon volvulus after sigmoid. It represents 1 % of acute intestinal mechanical obstruction and 20 to 40% of colon volvulus [2, 3]. This is a surgical emergency with difficult diagnosis. It is confirmed by radiological and/or endoscopic investigations. If surgery seems appropriate treatment, indications for resection or fixation in the absence of intestinal necrosis, are not clearly defined and laparoscopy

has not clarified the situation yet [2].

We report 2 cases of cecum volvulus managed in the General Surgery Departments of the Aristide Le Dantec Hospital and Regional Hospital of Thies in the last 5 years. The objectives of our study were to discuss diagnostic aspects, etiological and therapeutic modalities.

CASE #1

A female patient, aged 38, with no pathological history was admitted for an occlusive syndrome lasting for 5 days with abdominal pain starting in the right iliac fossa which spread

secondarily to the entire abdomen. It was associated with vomiting and intestinal transit stop. The patient did not report any similar episode in the past. Examination on admission found a patient in good condition without fever. Her hemodynamic status was stable with a blood pressure of 120/80 mmHg and a pulse of 120 beats/minute. Abdominal examination revealed a symmetrical median bloating without defense or contracture. Digital rectal examination (DRE) found feces in the rectum. Blood cell count (BCC) objectified hyper leukocytosis 11,900/mm³ with neutrophil predominance (89%). The hemoglobin level was 15 g/dl, hematocrit was 45% and platelets, 290 000/mm³. Abdominal X-ray revealed air-fluid levels of small bowel and colic types. The patient was hospitalized. A peripheral vein catheter, a nasogastric tube and a urinary catheter were introduced. She was put under analgesic treatment. During monitoring, the patient presented secondary fever of 38 ° and diffuse abdominal sensibility. The hemodynamic status remained stable and hourly urine output was estimated at 1.5 ml/kg/hour. She underwent midline laparotomy. During exploration we found a cecal volvulus in a spiral clockwise turn. The cecum was completely free, distended, left projected with lesions of ischemic nature. The abdominal cavity was clean (Figure 1).

We performed a cecal and about 10 cm terminal ileum resection with end-to-end ileocolic anastomosis. A drainage of the abdominal cavity was performed by a Delbet drain. The postoperative course was uneventful with digestive laxation on the 3rd postoperative day. The patient was discharged on the 8th post-operative day.

CASE #2

A 40 year old male patient was admitted for abdominal pain with vomiting and stopping intestinal transit evolving for 3 days. The patient was in good condition without fever. The abdomen was distended, soft, with diffuse sensibility without defense or contracture. The DRE showed a rectum full of feces. BCC showed leukopenia at 4700 / mm³, hemoglobin at 11.6 g/dl and hematocrit rate at 32%. An abdominal X-ray revealed hydro aeric levels of small bowel-type (Figure 2).

The patient was hospitalized. A peripheral vein catheter, a nasogastric tube and a urinary catheter were introduced. Rectal enema was performed without improvement. The

patient underwent midline laparotomy. During exploration we found a cecal volvulus with ileal involvement; the cecum was distended with ischemic lesions. The abdominal cavity was clean. We performed an ileo-cecal resection. Restoration of continuity was done immediately by end-to-end ileocolic anastomosis. The postoperative course was uneventful. The patient was discharged on the 5th postoperative day.

DISCUSSION

The incidence of cecal volvulus is 2.8 to 7.1 per million population per year [4, 5]. Cecal volvulus represents 1 % of acute mechanical intestinal obstruction and 20 to 40 % of colon volvulus. It is the second location of colonic volvulus after the sigmoid.

The average age of onset is between 35 and 65. In Anglo - Saxon countries, the average age varies between 47 and 68 years. In India, the incidence of cecal volvulus is higher than in Western countries. In addition, cecal volvulus occurs at a younger age with an average age of 33[6]. The average age of our 2 patients was 39 years. There is no predisposition linked to sex clearly established. However, there is a slight female predominance, probably due to the high incidence of cecal volvulus during pregnancy and postpartum. In other European series, there is a male predominance [7].

The diagnosis of cecal volvulus is difficult because the signs are not specific. The clinic is one of acute intestinal obstruction by strangulation. The onset is often sudden, marked by paroxysmal abdominal pain on a permanent foundation found in almost all patients [8]. These pains sit in the right iliac fossa, the right flank, the right hypochondrium before spreading. They're associated with nausea and vomiting in 20-60 % of cases and bowel dysfunction in 50-80 % of cases [8, 9]. Clinical examination is a patient with clinical signs of dehydration. We can note a general or localized bloat. Pelvic digital examinations are painless [2, 10].

Laboratory tests have no specificity for the diagnosis but they are used to assess the impact of occlusion [2]. Radiography of the abdomen without preparation is the first intention test which shows a large air-fluid level resulting in distension of the cecum. It's central or lateralized to the right or left, often associated with air-fluid bowel levels. The interpretation of the images is hindered by the presence of fluid in the cecum, the anteroposterior orientation of the cecum and the superposition with other segments of the digestive tract. Dilated cecum appears as an oval aeric

structure [2, 10]. The particular "coffee bean" image is found in half of the cases [5, 10]. The Abdominal X-ray, practiced in our 2 patients, objectified small bowel and colonic air-fluid levels without specificity. Rectal way opacification is not currently used. It shows a lack of opacification of the cecum while the rest of the colon is normal diameter [2]. The CT-scan is powerful for the diagnosis of cecal volvulus. It also helps to diagnose a complication such as ischemia or perforation [5, 11]. It highlights the "whirl sign". Ileal and cecal distension with contrasting flat colon are sufficient in all cases to suggest the diagnosis [2]. For our 2 patients, it could not be achieved due to lack of availability of CT- scan on emergency.

Treatment has 3 main goals: reduce twisting, treat progressive complications and prevent recurrence. Reductions in cecal volvulus by colonoscopy or enemas are rather considered "accidental" [2, 10]. In a series of 55 patients, Grossmann and al conducted 20 endoscopic exsufflations (36%) with only one success (5%). Anderson and Welch had one success on 4 and Friedman no success on 10 [2]. Endoscopic Reduction might be tempted if contra-indication to surgery or surgical risk (pregnancy) to delay surgery.

Surgery is the main treatment, whether conservative or not [10]. Laparotomy incision is the most widely adopted. However, laparoscopic or coelio-assisted approach has recently been described for the treatment of colonic volvulus [12]. The benefits of laparoscopic in colon surgery are multiples. Indeed, there is a decrease in the duration of hospitalization, pain and postoperative ileus. Despite its advantages and the low rate of complications, the laparoscopy is rarely used in emergency due to distension of the cecum and the difficulty of exposure. This could be achieved after untwisting and endoscopic exsufflation [12]. Conservative surgery is represented by simple untwisting, cecostomy and cecal fixation. The rate of recurrence after single untwisting varies from 0% to 50% [13, 14]. The mortality rate inherent in this technique is variable. It is around 13% [15]. The cecopexy is practiced in 10 to 60% of the cases [13]. It is advocated by some authors in case of viable colon. It has a low mortality and morbidity rate [7, 13]. Nevertheless, it is correlated with a high rate of recurrence ranging from 13 to 27% [11]. This high recurrence rate is comparable to that of simple untwisting according Rabinovici [10]. The combination of the 2 techniques allows decompression of the distended cecum and increases the effectiveness of cecopexy [7]. Conducting

a cecostomy through a perforation exposes to a high risk of morbidity and mortality [9]. Cecal volvulus recurrence after performing a cecostomy is variable. According Benacci, it is zero in a series of 9 patients with a follow- up of 27 months [16]. Rabinovici reported a high recurrence rate of 14% on a series of 90 patients [7]. Furthermore, this technique is correlated with a high morbidity rate of about 52 % according Rabinovici which explains its abandonment [7]. Indeed, we can observe serious complications such as necrosis of the cecum, progressive necrosis of the abdominal wall and the persistence of cecal fistula.

Cecal resection, ileo-cecal resection, and right hemicolectomy are three methods of colonic resection that may be used. They may be followed by a restoration of intestinal continuity in the immediate or in a second time [2]. Colectomy is increasingly used for the treatment of cecal volvulus even if viable colon: it's the principle colectomy [14]. Resection with primary anastomosis requires favorable intervention conditions: patient in good general condition, absence of peritonitis and distal occlusion. It can be manual or mechanical. In case of peritonitis resection must be followed by a double stoma with continuity restoration in a second time. This is the only surgical technique that guarantees a definitive treatment of cecal volvulus with a recurrence rate of zero [10]. In case of doubtful vitality or of massive colonic necrosis right hemicolectomy is possible with an end-closure and ileostomy or ileo-colostomy. In the absence of peritonitis when the slough areas are limited and we are confident on the viability of ileal and colonic ends it is permissible to immediately restore the ileo-cecal continuity.

The indications depend on age, patient condition, presence or not of comorbidity, and colonic wall status. In patients considered at high surgical risk (very old, severe comorbidity) a conservative solution is reasonable in absence of cecal necrosis. To these objectives, respond simple untwisting with the disadvantage of not preventing recurrence associated with cecostomy which in its very principle is doomed to failure [2]. The cecopexy or ceco - colopexy after untwisting has the advantage of better meet the objectives. In all other patients and mostly, in case of cecal necrosis resection is justified [2]. Our 2 patients underwent resection with end to end anastomosis in a same operation.

Morbidity is around 20% and the mortality varies between 9 and 60% [2]. These differences may be explained in large part by a variable consulting delay. This is the great

advantage brought by the rapid achievement of a scanner, which can accelerate the management. Depending on the series, 23-100 % of the operated patients have cecal necrosis [2]. In a large review of 561 patients, Rabinovici reported the highest rates of mortality and morbidity in cecostomy [7]. The resection led to triple significant morbidity and mortality of those conservative interventions except cecostomy [7]. If resection, mortality was higher if a stoma was performed (31 %) compared to the ideal resection (18 %). Perioperative mortality seems to be less the result of the technique chosen than the state of the colonic wall, and comorbidities [2, 17]. According Todd, the mortality rate was 41.4 % in the case of intestinal necrosis and 14.5 % if the colon is viable [14]. Our 2 patients had no complications.

CONCLUSION

Cecal volvulus is a rare abdominal emergency. It is subject to a significant mortality despite advances in resuscitation and investigative means. The surgical resection (ileocecal resection and right hemicolectomy) gives the best immediate and long term. Early diagnosis and prompt management before installing the complications manage to reduce the mortality rate.

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Author Information

I Konaté

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal

AO Toure

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal
alphaoumartoure@gmail.com

M Charfi

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal

PA Ba

Surgery and Surgical Specialities Department, Thies University
Senegal

I Ka

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal

M Seck

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal

M Cisse

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal

CT Toure

General Surgery Department, University Hospital Aristide Le Dantec
Dakar, Senegal