

Cecal Volvulus a Rare Cause of Bowel Obstruction: A Case Report and Review of Literature

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Abstract

Cecal volvulus is considered one of the rare causes of abdominal pain and intestinal obstruction. It is considered as a surgical emergency which needs urgent intervention, and if left untreated can lead to sepsis and death. Because of its rarity and variable clinical presentation, physicians are faced with diagnostic dilemmas which will cause delay in treatment. In this paper, we are reporting a case of cecal volvulus in a 30-year-old Bahraini female presented with severe abdominal pain, vomiting and constipation. The diagnosis was not suspected by the initial treating physicians. The purpose of this paper is to discuss the rare diagnosis of cecal volvulus and the need for urgent treatment of this life-threatening condition.

Keywords: *Volvulus; Cecum; Cecal Volvulus; Bowel Obstruction; Intestinal Obstruction; Cecopexy*

Introduction

Cecal volvulus is described as torsion of the cecum around its mesentery which frequently leads to obstruction [1]. It has a variable clinical presentation; however, majority of the patients present with acute gradually increasing abdominal pain that is crampy in nature due to peristalsis [2,3]. In addition to that, patients present with nausea, vomiting, constipation or obstipation and distention [4]. Its presentation can mimic small bowel obstruction; however, the clinical signs and symptoms and laboratory investigations are not specific to the disease [5]. Computed tomography (CT) is considered diagnostic in this condition [6]. If left undiagnosed or treated it can progress to bowel obstruction, ischemia, perforation and peritonitis [7]. Surgical intervention is the only modality of treatment of cecal volvulus [1].

The Case

A 30-year-old Bahraini female with past history of asthma, hypothyroidism and chronic constipation was brought to the Emergency Medicine Department (EMD) with 6 hours history of sharp severe lower abdominal pain. It was associated with multiple episodes of vomiting and obstipation. On physical examination her abdomen was distended and tympanic on percussion. With generalized tenderness,

guarding over the right lower quadrant and hyperactive bowel sounds. Laboratory investigations were within normal limits. The initial diagnoses by the emergency physician was ovarian torsion, hence ultrasound abdomen was done and showed moderate amount of free fluid in the pelvis. And increased echogenicity in the right lumbar area. These findings were suggestive of ruptured ovarian follicle versus inflammatory process and CT was recommended.

A CT abdomen and pelvis was done and showed hugely dilated cecum with abnormal site and orientation with cluster of collapsed ileal loops in abnormal location at the right paracolic gutter associated with engorgement of mesenteric vessels and free fluid. A characteristic whirl sing of the cecal mesentery indicating cecal volvulus was seen (Figure 1).

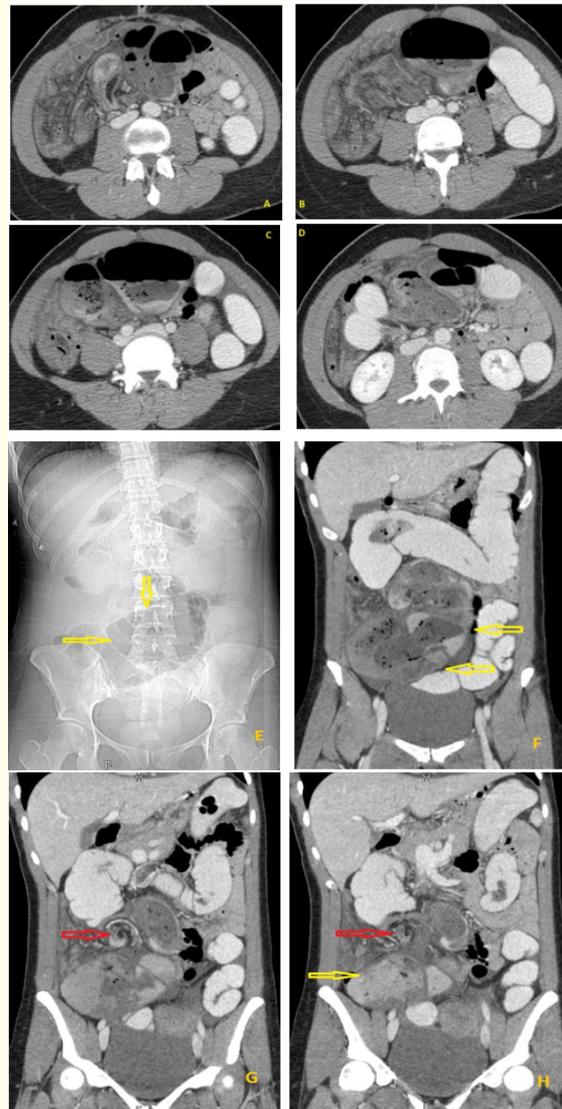


Figure 1: The axial CT scan (A-D), scout view (E), coronal CT (F-H) showing a dilated cecum (yellow arrows), with peaking and swirling of mesenteric vessels (red arrows) at its transition to a collapsed colon.

The patient was taken for diagnostic laparoscopy which confirmed the diagnosis of cecal volvulus. Detorsion of the volvulus was done. The cecum and ascending colon were dilated due to chronic constipation. The bowels were run to check for their viability and were healthy. Cecopexy was carried out. The cecum and the proximal part of the ascending colon were both fixed to the abdominal wall (Figure 2). And appendectomy was done. Rectal tube was inserted at the end of procedure and successful decompression was achieved. The patient stayed in hospital for 3 days and had an uneventful post operative recovery.

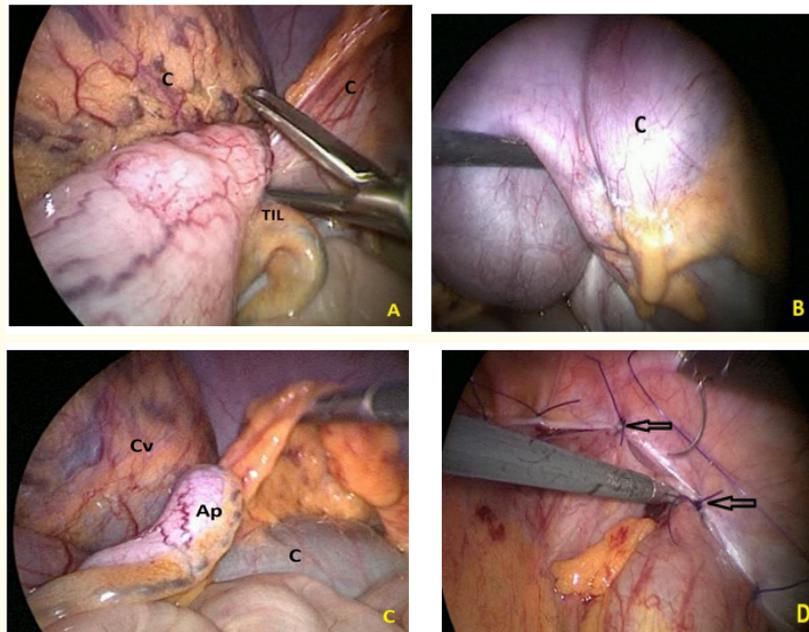


Figure 2: Laparoscopy. images (a-c) showing cecal volvulus (AP: appendix, TIL: terminal ileum, C: Cecum and CV: Cecal volvulus) and (d) showing Cexopexy (black arrows).

Discussion

Cecal volvulus is a rare cause of acute intestinal obstruction [5]. It accounts for approximately 1 - 1.5% of all causes of intestinal obstructions. And the incidence is around 2.8 - 7.1 cases per million annually [1]. It is more common in south east Asian countries due to high fiber diet [1,2]. This reported case is the only case of cecal volvulus in our institution since its establishment 8 years ago. The anatomical abnormality involves axial twisting of the cecum along with ascending colon and the terminal ileum, often in a counter-clock fashion [8]. Predisposing factors can be classified as congenital or acquired. Around 10 - 25% of the population have a mobile cecum and ascending colon sufficient to cause volvulus [9]. Acquired causes include adhesions due to prior abdominal surgeries, pregnancy [10], colonoscopy [11], Hirschsprung's disease [12], chronic constipation, high fiber diet, distant colonic obstruction [4]. The clinical picture of this disease is similar generally to those of small bowel obstruction, including acute onset of abdominal pain, distension, constipation, obstipation, and vomiting [13]. It can present as well with severe abdominal pain that is associated with sepsis and bowel strangulation, due to ischemia of the obstructed or twisted mesenteric vessels [14]. Laboratory investigations are neither sensitive nor specific for the diagnosis of cecal volvulus [5]. There are different modalities of radiological investigations that can diagnose the case with different sensitivity and specificity. This includes plain X-ray, CT scan and contrast studies. CT scan confirms the diagnosis in 90% of the cases. It

demonstrates a distended, midline cecum (coffee bean sign), two ends of the volvulized loop of bowel converging at the site of torsion (bird beak sign), and a swirling pattern of mesenteric fat and engorged mesenteric vessels (whirl sign) (Figure 1) [15]. Surgery is the main treatment, and there are multiple available options depending on the case. It can be done in the form of laparotomy with right hemicolectomy or limited resection with primary anastomosis, with recurrence rate of zero [3]. The other option is cecopexy with appendectomy with recurrence rate ranging from 0 to 28 percent [16]. The procedures can be done as open surgery or laparoscopically as in our reported case. The other surgical options are manual detorsion and cecostomy [17]. A nonsurgical option using colonoscopic reduction was reported to be successful by several authors. However, the success rate is only 30% in addition to the risk of colonic perforation. So, colonoscopy is not recommended [18].

Conclusion

Cecal volvulus occurs on a mobile cecum due to axial twisting of the cecum around its mesentery. The diagnosis is challenging and often delayed because of the nonspecific clinical signs and symptoms. This can lead to high mortality and morbidity rate. Abdominal CT is the best modality of diagnosis. The main treatment of cecal volvulus is surgery which can be achieved either by Open or laparoscopic approach.

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