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Case Report

Caecal volvulus: a rare entity of intestinal obstruction: 2 cases report

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ABSTRACT

Caecal volvulus is a very rare cause of intestinal obstruction. Patients with this condition may present with variable clinical presentation ranging from intermittent, self-limiting abdominal pain to acute abdominal pain associated with progressive intestinal ischemia, sepsis, and death. In this report, we presented two cases of caecal twist which was diagnosed with series of radiological imaging and labs. The first patient, 83 years old male underwent caecopexy, appendicectomy, and the second female who was 36 years old underwent right hemicolectomy with ileocolic anastomosis. We reported our experience in the management of 2 cases of caecal volvulus in our department.

Keywords: Caecum, Obstruction, Volvulus

INTRODUCTION

The term volvulus is derived from the Latin word 'volvere' (to twist). A colonic volvulus occurs when a part of the colon twists on its mesentery resulting in acute, sub-acute, or chronic colonic obstruction.

The embryonic right colon typically has a mesentery that eventually fuses to the parietal peritoneum; this fusion results in adherence to the posterior abdominal wall.[1,2] Developmental variations in the degree of fusion lead to the difference in the mobility of the ascending colon and caecum. Hendrick, in a review of cadaver studies, found that 10-25% of the general population had a propensity for caecal volvulus based on the length of the colonic mesentery.[3]

The long mesentery of the ascending colon results in a mobile caecum. Caecal volvulus is caused by axial twisting of the caecum along with the terminal ileum and ascending colon. It is relatively rare, accounting for less than 2% of all cases of adult intestinal obstruction, while 11% of all volvulus-related intestinal obstructions and incidence is 2.8-7. 1 case per million annually. Caecal volvulus is less common than sigmoid volvulus.[3,4] Caecal volvulus occurs more commonly in females and has been reported in all age groups, with an average age of presentation in the fourth decade.[2,4,5] In our cases, ages are 36 years, 83 years.

Delayed treatment of caecal volvulus has a high mortality rate of up to 30%. Due to the high mortality rate and potential complications, if there is any clinical suspicion even in a stable patient, early surgical treatment would be recommended as the best approach.[5-7]

Case 1

A 36 years old female patient was admitted for central abdominal pain associated with four episodes of vomiting and progressive abdominal distension for one day. There was no history of constipation, previous history of such attacks, bleeding per rectum, or something coming out the anus had been observed. General condition was stable, sick looking, dehydrated, and afebrile, without any medical comorbidity.

On examination, abdomen soft, distended mainly in the lower abdomen with localized tenderness/guarding at left iliac fossa/lumbar region and periumbilical area, with no

rigidity, with hypokinetic gut sounds on auscultation. There was an incidental finding of an asymptomatic reducible umbilical hernia (palpable one finger defect in umbilicus). Rest of the hernial orifices was normal.

Laboratory tests revealed leukocytosis with predominance neutrophils. A plain abdominal image showed dilated small bowel loops with air-fluid levels, dilated displaced caecum in the upper left abdomen (Figure 1 and 2). Computed tomography (CT) of abdomen established the diagnosis of caecal volvulus with closed-loop obstruction [Figure 3 (whorly appearance) and Figure 4 (embryo appearance)]. The patient underwent emergency laparotomy for acute intestinal obstruction after resuscitation and optimization. The intra-operative findings were: a counter-clockwise twist at caecum, ileum, ascending colon, markedly distended displaced caecum at left upper quadrant, non-viable, gangrenous caecum, and terminal ileum up to 7-8 cm (Figure 5).

The gangrenous part was resected along with a right hemicolectomy and hand sewed ileocolic end to end anastomosis 3rd post-operative day pt passed flatus and on 4th post-operative day the patient started orally. The post-operative course was uneventful and the patient was discharged on the 5th post-operative day.

Case 2

An 83 years male patient known with an old right sided hemiplegia, hypertension, ischemic heart disease, prostatomegaly on medical management, was admitted with a 2 days history of recurrent abdominal pain associated with vomiting and absolute constipation. On general examination, the condition was hemodynamically stable although uncomfortable, and dehydrated.

Clinical examination demonstrated a distended abdomen with hypokinetic bowel sounds and localized tenderness/guarding at the right lower abdomen. There was an incidental finding of left reducible incomplete direct inguinal hernia. All labs (hemogram, renal function tests, and electrolytes) were acceptable. An abdominal radiograph revealed intestinal obstruction with multiple air-fluid levels.

Abdominal CT revealed diffuse dilatation of colonic bowel loops showing multiple air-fluid levels, with a maximum caecal diameter of 10 cm anteroposterior, with progressive mesenteric ischemia, and caecal volvulus. Patient underwent an emergency laparotomy after optimization.

Intra-operatively we found a massively distended viable caecum reaching till right HCR/left HCR with clockwise caecal volvulus and dilated small bowel. Caecopexy with appendicectomy was done. The patient passed flatus on 2nd post-operative day and was started orally from 3rd day, and discharged on 4th post-operative day.

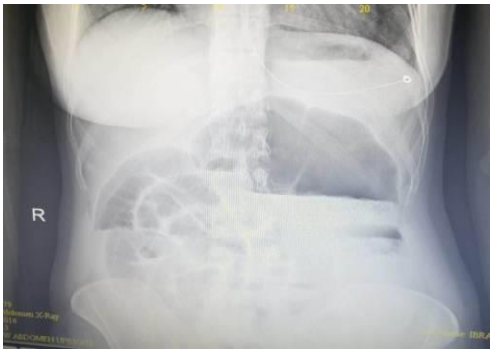

Figure 1: Plain X-ray abdomen erect showing the caecum in the left upper abdomen, with air fluid levels.

Figure 2: Dilated bowel loops and NG tube in place.

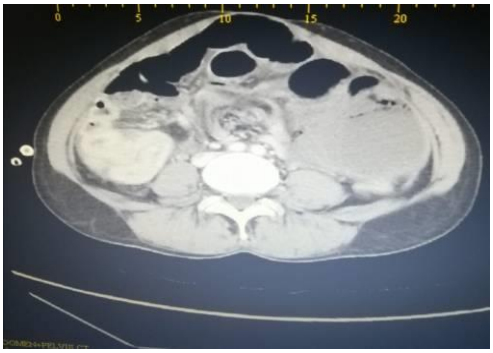

Figure 3: CT abdomen: whorly appearance.

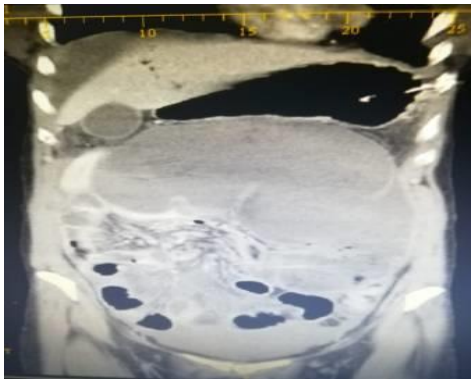

Figure 4: CT abdomen: embryo appearance.

Figure 5: Intra-operative finding: non-viable, gangrenous caecum and terminal ileum up to 7-8 cm.

DISCUSSION

There are two prerequisites for caecal volvulus to occur: a segment of the mobile caecum and ascending colon and a point of fixation about torsion may occur. Mobility results from either incomplete embryological rotation of the bowel or improper developmental fusion of the mesentery of the caecum and ascending colon with the posterior parietal peritoneum.[6-8] Other causes include: previous surgery, pregnancy, and obstructing lesions of the left colon.[8] Axial torsion and loop type are the main two types of caecal volvulus.

In axial torsion type, as in our case, the caecum twists in the axial plane, rotating clockwise or counterclockwise around its long axis with the caecum remains in the right upper quadrant. In the loop type of volvulus, the distended caecum both twists and inverts, moving to occupy the left upper quadrant of the abdomen. Caecal bascule is the case in which caecum folds anteriorly without any torsions is a rare entity.[8,9] With all types of caecal volvulus, patients present acutely with nonspecific symptoms of bowel obstruction, including generalized abdominal pain, nausea, vomiting, constipation, and abdominal distension. The acute presentation can be preceded by a recurrent intermittent pattern of symptoms in 50% of patients. Physical examination may show asymptomatic distension of the abdomen, with tympanic mass palpable in the left upper quadrant or mid-abdomen. Abdominal radiographs, CT abdomen, and contrast studies with water-soluble contrast can clinch the diagnosis. CT confirms the diagnosis in 90% of cases as in our presenting cases.[8-10]

The selection of surgical procedures depends on patient's age, overall general condition, associated comorbidities, and gut viability. Right hemicolectomy with ileocolic bowel continuity is the mainstay of treatment. Right hemicolectomy has low morbidity and mortality with less than 10% recurrence. Caecopexy with appendicectomy can be done if the patient's condition does not allow resection as in our case 2. Ileostomy with controlled mucous fistula is offered in unstable patients. Detorsion with caecopexy is performed when the gut is viable but has a recurrence rate of 3-40 %.[8,10-12]

CONCLUSION

Caecal volvulus is rare but is associated with a high mortality rate in sick patients. CT is considered fundamental in the prompt and for accurate diagnosis of caecal volvulus. Early surgery is a rule and right hemicolectomy is the treatment of choice.

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