

CAECAI VOLVULUS PRESENTING WITH INTESTINAL OBSTRUCTION

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ABSTRACT

Caecal volvulus is an infrequently encountered clinical condition and an uncommon cause of intestinal obstruction. Patients with this condition may present with highly variable clinical presentations ranging from intermittent, self-limiting abdominal pain to acute abdominal pain associated with intestinal strangulation and sepsis. This is a case report describing a 70-year-old female with a caecal volvulus diagnosis made during exploratory laparotomy for intestinal obstruction, which was treated with a limited resection. Lack of familiarity with this condition is a factor contributing to diagnostic and treatment delays. It is important to acknowledge and consider this pathology during differential diagnosis, and not delay the treatment in patients with caecal volvulus.

KEYWORDS : Caecal volvulus, Intestinal Obstruction, Limited resection.

INTRODUCTION

Caecal volvulus is characterised anatomically by the axial twisting that occurs involving the caecum, terminal ileum, and ascending colon.^{1,2} The incidence of caecal volvulus is reported to range from 2.8 to 7.1 per million people per year, and the process is responsible for 1%–1.5% of all the adult intestinal obstructions and 25%–40% of all volvulus involving the colon. Patients' ages at presentation are presumably affected by cultural and dietary influences and their effects on intestinal motility, resulting in highly variable peak ages of presentation from various geographical regions, where the average age of patients reported in India is 33 years as compared with 53 years in reports from Western countries.¹ Previous abdominal surgery has been identified as an important contributor in caecal volvulus formation. It is postulated that postoperative adhesions contribute to the formation of fixation points and fulcrum of rotation for the mobile right colon, whereby promoting volvulus development.¹

CASE REPORT

A 70-year-old female patient presented to us with complaints of pain involving the whole abdomen for 1 week with non-passage of flatus and stools for 3 days. Pain was insidious in onset, mild to moderate in intensity, initially localized in right lower abdomen but later generalized and gradually progressive. She also had complaints of non-passage of flatus and stools for 3 days associated with abdominal distension and multiple episodes of bilious vomiting. There were no associated aggravating or relieving factors. There was no history of melena or previous abdominal surgery. She had no associated comorbidity. She was a chronic smoker for 40 years and had attained menopause 20 years back. On per abdomen examination, patient was found to be having generalized tenderness all over the abdomen along with guarding, rigidity and rebound tenderness. There was no organomegaly or palpable lump. Hyper tympanic note was present on percussion with obliterated liver dullness. Bowel sounds were absent.



Figure 1- On local abdominal examination ,whole abdomen distension visualized .

Blood investigations were as follows: Hb -14.3g/dl, TLC - 10,900mcg/L, Urea - 82 mg/dl, Creatinine - 1.3mg/dl, Na -132

mmol/L, K - 4.2 mmol/L, Bil(T) - 0.98mg/dl, Bil(D) - 0.20mg/dl, ALT/AST/ALP - 84/55/72 U/L, Lipase/Amylase - 88/38 U/L.

Her abdominal X-ray (FIGURE 2) revealed multiple dilated gut loops suggestive of Large Bowel Obstruction and air under diaphragm suggestive of pneumoperitoneum. Abdominal sonogram revealed multiple dilated gut loops with inter-loop fluid suggestive of intestinal obstruction.



Figure 2 Abdominal Xray erect showing air under right hemidiaphragm with dilated bowel loops- Large bowel obstruction

CECT abdomen (Figure 3,4) revealed F/S/O Acute Intestinal Obstruction (transition point in transverse colon) with minimal free fluid in pelvis with pneumoperitoneum with few air foci in the wall of ascending colon-? Pneumatosis intestinalis. Cause? Midgut volvulus?? Adhesion Band.

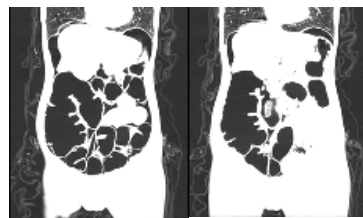


Figure 3-CECT lung window showing air under diaphragm s/o pneumoperitoneum and air in colonic wall - s/o pneumatosis intestinalis.

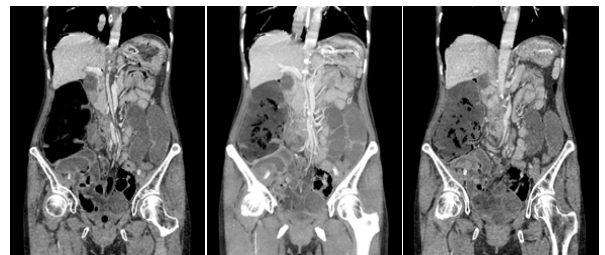


Figure 4-CECT abdomen showing dilated ascending colon with minimal ascites.

A diagnosis of acute generalized peritonitis with intestinal obstruction was made and the patient was taken to the operation theatre for exploratory laparotomy and further management.

Intraoperative findings:

Midline laparotomy incision was given. On opening abdomen, gush of air was present. About 500 ml of free fluid, mixed with pus flakes was present which was suctioned out carefully. Midgut was dilated. There was a caecal volvulus (Figure 5) with mobile caecum with perforation and pre-gangrenous changes. Rest of gut examined was normal. Limited resection done. Thorough peritoneal toiletting along with peritoneal drainage. Drains were kept in Morrison's pouch and pelvic region. Haemostasis ensured and the wound was closed with PDS.

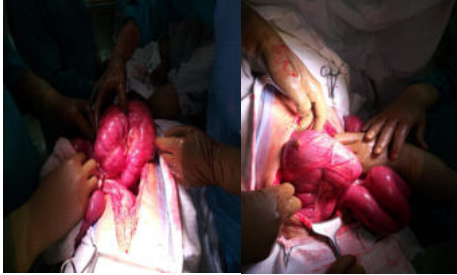


Figure 5 – Post-operative finding showing caecal volvulus.

Post-operative period was uneventful.

DISCUSSION

Caecal volvulus is a torsion, usually of 360°, of a segment of the colon on its mesenteric axis, which causes strangulation – hence, an occlusion of the two ends of the volvulated segment – compromising its blood irrigation, which causes an obstruction in a closed loop^{3,4}. There are two types of caecal volvulus^{5,6}. The first and most frequent type (90%) is the conventional axial rotation of the cecum, mostly counter clockwise, with involvement of the ileum. Secondly, there is caecal bascule, in which the cecum rotates upward and anteriorly in the horizontal plane without any torsion whatsoever^{7,8}.

Colonic volvulus is the most common type of volvulus, followed by that of the sigmoid colon and cecum, and there are case reports involving the transverse colon including the splenic or hepatic angle^{4,9,10}.

Different risk factors and aetiologies have been described for the development of this pathology that vary between populations; the most common associated factors are chronic constipation, a high-residue diet, laxative abuse, pregnancy, and Chagas disease, among others, which are mentioned throughout different studies⁹.

Regarding clinical manifestations, patients may often present with severe abdominal pain, distension, constipation, nausea, and vomiting that even could cause hypovolemic shock^{11,12}. On physical examination, a distended abdomen could be observed, generalized tympany perceived, and a hypoactive or absence of peristaltic sounds found. On the other hand, if perforation or gangrene occurs, a patient will present with clinical findings of acute abdominal pain, with signs of peritoneal irritation and hemodynamic instability¹³.

In contrast to sigmoid volvulus, for caecal volvulus, abdominal X-ray imaging has limited utility, identifying in some cases air fluid levels and predominant cecum dilation, while in fewer cases the cecum is displaced into the right upper quadrant; hence, surgeons must decide whether an additional imaging study or an immediate surgical procedure is needed. CT

scanning nowadays has an important role, with a sensibility as high as 90% for caecal volvulus; a swirl of mesenteric soft tissue and fat attenuation with adjacent loops of bowel surrounding rotated intestinal vessels, known as the “whirl sign,” is almost diagnostic. Nevertheless, it is only present in few cases of classic volvulus. Although abdominal tomography is more reliable than abdominal radiography¹⁴, in some cases, with the initial radiologic findings, patients could undergo emergency surgery¹⁰.

There is no consensus on the best management strategy; nonetheless, the low success rates of colonoscopy for reduction of a volvulated caecum and the risk of perforation alongside the potential risk of missing colonic necrosis support surgical management as the most reliable treatment for this pathology.

Regarding the surgical treatment of choice, right colectomy has become the most effective procedure, with the lowest recurrence rates and an acceptable morbidity risk. Some algorithms have been published which put an emphasis on the patient's clinical condition and the presence of necrosis or perforation. As alternative procedures, detorsion with cecopexy, cecostomy, and ileocectomy are the most common procedures mentioned. When a right colectomy is performed, the performance of a primary anastomosis depends on the hemodynamic conditions and grade of contamination¹⁵.

CONCLUSION

Caecal volvulus is not a common cause of colonic obstruction with multifactorial aetiologies. A diagnosis should be obtained quickly by physical examination and radiological findings. Treatment consists of urgent surgery to diminish the mortality rate.

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