Caecal Volvulus on a Background of Previous Sigmoid Volvulus: Case Report and Review of Literature

Ikechi C*, Panjwani Z, Alam T and Cooke JM
Department of General Surgery, William Harvey Hospital (EKHUFT), UK

Abstract

Caecal volvulus is a rare clinical disorder, caused by an axial twist around the ascending colon, caecum and terminal ileum. Although, it generally presents as small bowel obstruction, it is a rare occurrence with an annual incidence of 2.8 to 7.1 per million people [1,2]. If not detected on time, it can lead to bowel necrosis, perforation and faecal peritonitis. Presumably, the age of patients at presentation is influenced by the cultural and nutritional factors and their impact on bowel motility. This results in extremely variable peak age presentation from different parts of the world ranging from 33 years in India to 53 years in Western Europe and North America [2-4]. Laboratory assessments such as complete blood count and blood biochemistry are neither sensitive nor specific in the diagnosis of caecal Volvulus. Laboratory values are often non remarkable in patients with intermittent illnesses and in early acute obstruction, however computed tomography is more diagnostic [5]. In this report, we present a 65-year-old patient with caecal volvulus who has had recurrent sigmoid volvuli in the past.

Case Presentation

A 65-year-old woman, who was admitted to the emergency unit after been reviewed by her GP with complaints of severe generalized abdominal pain constipation and vomiting. She had a background history of sigmoid colectomy for a volvulus 7 years prior to presentation and an open mesh repair for an abdominal incisional hernia. Clinical examination showed a distended abdomen which was tender globally with hyperactive bowel sounds. Diagnosis of volvulus was confirmed with a plain X-ray abdomen which showed dilated loops of bowel and a distended ileum along its mesentery. Laboratory tests were within normal limits. A computer tomography scan confirmed the clinical diagnosis of caecal volvulus (Figure 1). Urgent laparotomy was performed with a right hemicolectomy. The resected specimen confirmed the diagnosis of caecal volvulus (Figure 2). The patient had an uneventful recovery postoperatively (Figure 3). She was discharged home on the 5th post-operative day with no recurrence of her symptoms.

Discussion

Volvulus is derived from the Latin word Volvo which means to twist. Colonic volvulus occurs when a part of the colon twist on its mesentery. The consequence of this twisting will result in strangulation of the bowel, which may lead to bowel necrosis.
either a total or partial bowel obstruction with arterial and venous compromise of the affected bowel [6]. Volvulus is an unusual cause of intestinal obstruction accounting for approximately 5% of cases of gastrointestinal obstruction and 10% to 15% of large bowel obstruction. The most common location for colonic volvulus is the sigmoid (75%) the cecum (15%) transverse colon (3%) and the splenic flexure (2%) [3,7,8]. Having a caecal volvulus on a background of having had a sigmoid volvulus is a very rare occurrence. A combination of sigmoid and colonic volvulus might be synchronous or metachronous. We report this case of a metachronous caecal colonic volvulus in a middle-aged woman, who had a history of recurrent large bowel obstruction as a sigmoid volvulus in the past. She had one episode of a colonic decompression and a sigmoidectomy 7 years prior to presentation. Congenital, mechanical and physiological variables are considered as predisposing factors to volvulus. During embryogenesis, intestinal growth is a complicated and sequential event in which the caecum rotates counter-clockwise from the left side of the abdomen to its more permanent position and this could lead to the two congenital causes which are non-fixation and redundancy [5,8]. Mechanical causes can arise from distal colonic obstructions, adhesion, carcinoma, strictures, background of prior sigmoid or transverse colon volvuli, and iatrogenic malposition of the colon after surgeries. Physiological causes include high roughage diet and large bowel distension secondary to chronic constipation and associated with psychiatric and neurologic diseases [9,10]. Caecal volvulus can present in various ways, ranging from intermittent abdominal pain to severe acute pain resulting from sepsis and intestinal strangulation as a result of ischemia caused by obstructed, twisted mesenteric vessels. Atypical presentations have also been documented. An example was a reported case of a female adolescent with right lower quadrant abdominal pain that resulted in numerous unsatisfactory visits to the emergency department prior to a diagnosis of caecal volvulus [10]. Laboratory findings are neither specific nor sensitive for caecal volvulus diagnosis as was documented in our case. They only reflect the degree of intestinal obstruction and associated abnormalities.

Plain radiology is often the first choice in diagnostic imagining in patients presenting with volvulus, it is not specific but sensitive and could lead to an initial diagnosis of small bowel obstruction as was also recorded in our case. Barium enema was the imaging method traditionally used for the confirmation of caecal volvulus with a diagnostic precision of 88%. In addition, occasional effective volvulus reduction and decompression was recorded after barium enema administration. The most prevalent confirmatory finding visualized during barium enema is the “beak” sign or a soft tapering cut off at the efferent limb of the obstruction. An extra benefit of barium enema is distal colon visualization to exclude coexisting abnormalities that may have led to the formation of the volvulus. Because of the time required to complete this procedure and the potential for extravasation of the contrast, barium enema is not usually advocated for evaluating patients in the emergency setting. Abdominal CT is increasingly being used for the assessment of acute abdominal pain, and for this purpose, CT replaces barium enema as the preferred imaging method for the diagnosis of acute caecal volvulus in the emergency setting. “Coffee bean,” “bird beak,” and “whirl” signs are three prevalent CT signs used in making a diagnosis of acute caecal volvulus [4,5,10]. The success rate of endoscopic decompression for caecal volvulus is only 15% to 20%, and therefore emergency surgery is required. The procedure of choice depends on the clinical condition of the patient at presentation. Caeceostomy is a valid choice in severely debilitated patients; however, it is associated with a rate of 40% to 50% wound infection and a rate of recurrence of about 2% to 5%. On the hand, caecopexy which is an extensive form of fixation of the right colon and caecum with a much lower rate of recurrence has been described. The time required for this procedure is as long as, if not longer than, that required for colectomy, which is the definitive procedure [11-14]. Hence, fixation procedures for volvulus are not recommended. Ultimately, if the patient is able to tolerate surgery, the procedure of choice is a right hemicolectomy with primary ileocolic anastomosis as was done in our case.
References