

CLINICAL CASE

AN INTRICATE CASE OF SIMULTANEOUS VOLVULUS ON
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Abstract

We present a case of simultaneous volvulus on megadolichocolon and jejunum in a 70-year-old patient with no previous abdominal condition. Volvulus is pathology worth to be considered in patients with acute abdominal pain and distension as it has a fast progression to an abdominal catastrophe where prompt diagnosis is crucial. It is an important surgical emergency that imposes immediate unravel of affected bowel. The goal of the management includes restoring the hemodynamic balance of the patient, immediate reduction of the volvulus and relief of the obstruction. Although most of the times the diagnosis of colonic volvulus is easily confirmed by plain abdominal x-ray, an intricate case such as the presented one can be regarded as a multidisciplinary challenge. The mortality rate can be as high as 20-25%, depending on the delay at presentation before treatment is sought.

Keywords: Megadolichosigmoid, Volvulus, Emergency, Abdominal acute pain and distention

Introduction

Dolichocolon is a word derived from ancient Greek where dolichos meant the long distance in running. Therefore dolichocolon is an abnormality which consists in a long large intestine. On the other hand, megacolon represents the abnormality, which consists in the dilatation of the large intestine. Those 2 terms can be used only in the absence of a mechanical obstruction [1].

The transverse diameter of the colon varies greatly and that is why the definition of megacolon has also varied a lot in literature. In general population, the cecum has the greater diameter 9-12 cm; the transverse colon is usually less than 7 cm in diameter and the descending colon and sigmoid are usually slightly smaller in caliber [2]. The sigmoid is

considered enlarged, and therefore megasigmoid when it has more than 6.5-7 cm in diameter [1,3].

While dolichocolon is often an incidental finding on abdominal x-rays or colonoscopy, chronic megacolon is frequently a cause for constipation extended sometimes to intestinal paresis [2]. The association of these two abnormalities is an idiopathic disorder most of the times but no large scale studies have been conducted to determine prevalence or incidence of acquired megadolichocolon.

The term volvulus comes from the Latin word "volvere" which means "to roll" and represents a twist of intestine around itself and the mesentery that supports it, resulting in a bowel obstruction. Sigmoid volvulus accounts for the majority of cases but it is more often pathology of children [4,5]. Sigmoid volvulus

that occurs after infancy is more common seen in males and after 60 years old or in patients with a history of mental health conditions [5]. The first case of volvulus was described as early as 1550 BC in ancient Egypt. Nowadays it occurs more in Africa, Middle East and India while in Romania, it is incriminated in 3-7 % of all intestinal obstruction being the third leading cause of large bowel obstruction [6,7]. Women are thought to have a lower incidence due to their wider pelvis [8].

Case presentation

We bring to your attention the case of a 70-year-old patient with no medical known history or hospitalization and no medical treatment, who came into the emergency room with a chief complaint of spread abdominal pain which he describes as 7-8 on a severity scale from 1 (lowest) to 10 (highest), started suddenly, 6 hours before presentation, with a progressive evolution of pain and abdominal distention.

The patient related a chronic constipation in the last 30 years with periodically bloating and, the presence of intestinal transit at 3-4 days. Upon direct questioning he stated that he had no passage of stool or flatus in the last 5 days.

Physical examination revealed an important discrepancy between the abdominal pain and distention and the apparent state of health (Figure 1), with normal vital signs (blood pressure 130/80mmHg, heart rate 76 b/min, normal body temperature), except a slightly dehydrated state and a moderately high respiratory rate 26 per minute. Oxygen saturation on room air was 92%.



Figure 1 - Physical examination

His abdomen was generally distended, tympanic to percussion with rebound tenderness signs all over the abdomen. There were no bowel sounds. Digital rectal examination revealed an empty rectum and no tumors of rectal ampoule.

Patient's chest and abdominal x-ray detected distention with air of small and large intestine with the ascension of diaphragm on both sides, and specific signs like "bent inner tube" and "coffee bean" sign, pointed out the volvulus diagnosis (Figure 2).



Figure 2 – X-ray examination

The ultrasound was very difficult to complete because of the intense abdominal pain and the important distention of bowels. It only showed a lack of movement of the bowels.

The blood test pointed out a leukopenia (2000 leukocytes/ μ l), thrombocytopenia (125000 platelets/ μ l), normal hemoglobin (13.6g/dl) with high volume and high hemoglobin concentration of erythrocytes. Also acute renal failure was revealed with the level of serum creatinine at 4.4 and slightly modified glycemic index (166mg/dl), amylase (152U/L), total bilirubin (1.38) and INR (1.25).

Although usually the diagnosis of colonic volvulus is easily confirmed by plain abdominal x-ray, this time, the clinical features of acute abdominal pain with the lack of specific signs required an advanced imagistic exploration, computed tomography, but first an empiric wide

spectrum antibiotic treatment was initiated with cephalosporin and metronidazole.

The CT scan disclosed the diagnosis of sigmoid volvulus noting that the sigmoid arteries were twisted and the sigmoid was already necrotic.

At this point the surgical intervention was mandatory.

Under general anesthesia of the patient, we performed laparotomy in the next hour and we discovered volvulated megadolichosigmoid, clockwise rotated (Figure 3), with gangrene of the sigmoid (Figure 4).



Figure 3 - Volvulated megadolichosigmoid



Figure 4 - Gangrene of the sigmoid

Beside that, into the torsion of the sigmoid a high placed jejunum segment was inserted and that resulted into the necrosis of that segment of the small intestine (Figure 5).



Figure 5 – Small intestine necrosis

The most time saving procedure was chosen because the patient was at that point hemodynamically unstable. We performed Hartmann sigmoid resection and the excision of the small bowel fragment with immediate anastomosis and drainage.

Although the surgery has been done as soon as possible, at the end of it, the patient was still unstable and had no respiratory trigger so he had to be kept ventilated and was admitted in the intensive care unit. Into the next hours the renal acute failure was associated with heart failure, hepatic failure and respiratory failure. Multidisciplinary approach of the patient was required, because of the multiple organ insufficiency and the patient had to have surveillance in the intensive care unit for several days.

Discussions

The complaint of acute abdominal pain and abdominal distension is constant seen in the emergency room and the cause can range from gaseous distention, chronic constipation to intestinal obstruction through any known mechanism including volvulus or even malignancy [9]. Sigmoid volvulus is an important surgical emergency that imposes immediate loosening of the affected bowel. Prompt diagnosis is crucial. Delayed presentation of the patient in the emergency room can be defining for the resolution of the case. Treatment of volvulus may include sigmoidoscopy if there are no complications [10], but for patients with signs of sepsis or ischemia, immediate surgery and resection are advised [11].

In general, sigmoid volvulus accounts for between 5-7% of all intestinal obstruction cases [5,7]. The mortality rate, however can be as high as 20-25%, depending on the delay at presentation before treatment is sought [1].

Conclusions

This case peculiarity consists into the concomitance volvulus of both the sigmoid and the jejunum.

Although the sigmoid volvulus might have an insidious start, with chronic constipation and abdominal distention, this condition is commonly seen in the acute medical setting, and it has fast evolution to multiple organ failure and decease. This case report serves to highlight one such example.

Volvulus on megadolichosigmoid is diagnosis worth to be considered on patients with acute abdominal pain and distension as it has a fast progression to an abdominal catastrophe where prompt diagnosis is crucial.

The goal of management includes restoring the hemodynamic balance of the patient, immediate reduction of the volvulus and relief of obstruction.

Although most of the times the diagnosis of colonic volvulus is easily confirmed by plain abdominal x-ray, an intricate case such as the presented one can be regarded as a multidisciplinary challenge.

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