

Sigmoid Volvulus: Case Report and Literature Review

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Abstract

Sigmoid volvulus consists of torsion on your mesentery, which leads to intestinal obstruction, volvulus usually affects people in their seventh decade, predominantly in the male gender. Diagnostic support through radiography and abdominal tomography allow to identify the torsion site, as well as the compromise of the intestinal loop. Treatment is controversial, ranging from endoscopic management to intestinal resection, anastomosis and colostomy, for subsequent reconnection [2]. Two cases of patients with sigmoid volvulus who required emergency surgical intervention are presented. Thus, the timely diagnosis and treatment of sigmoid volvulus reduce patient morbidity by allowing less extensive resections.

Keywords: Intestinal Obstruction; Sigmoid Disease; Intestinal Volvulus

Introduction

The sigmoid volvulus (SV) consists of the twisting of the this on its mesentery, which leads to an intestinal obstruction. Sigmoid volvulus usually affects people in their seventh decade, predominantly in the male gender, since the female pelvic anatomy allows spontaneous devolvulation as it is more extensive. Sigmoid volvulus is the most common intestinal volvulus, followed by cecal and finally transverse colon volvulus, corresponding to 2-3% of cases of intestinal obstruction as a result of torsion greater than 180° of the sigmoid on its mesentery with subsequent dilatation (torsion-dilatation) and suffering of the intestinal wall and risk of perforation [1,4]. It affects people between the sixth and seventh

decade, predominantly in men, reaching a mortality of up to 90%. It is often confused with an episode of constipation [5]. The sign of the coffee bean, crossing to the north, bird's beak and the whirlpool will be the main findings in the images that will allow its correct diagnosis [6]. Treatment ranges from endoscopic management and subsequent sigmoidopexy to segmental resection, anastomosis, colostomy and subsequent reconnection [2,7].

Case #1

A 75-year-old male patient, with heart disease, diabetic, with a 6-day clinical picture of colic-type abdominal pain, abdominal distension, absence of flatus and bowel movements, for which he

administered an evacuating enema without improvement. In the emergency department, paraclinical tests showed leukocytosis with neutrophilia, thrombocytosis, and elevated renal function tests. The chest and abdominal X-ray findings compatible with sigmoid volvulus (Figure 1), so he was taken to exploratory laparotomy, sigmoidectomy and colostomy by the General Surgery service. During his post-surgical period he evolved torpidly with subsequent death.

Figure 1: Left: Chest X-ray shows marked dilatation of the colon (red arrow) that exceeds the hepatic shadow. Right: X-ray of the abdomen showing the coffee bean sign (yellow arrow), the north passage sign (red arrow) and the absence of distal gas (star).

Case #2

Female patient, 70 years old, diabetic, with an 8-day history of intermittent abdominal pain, progressive abdominal distension and absence of stool associated with intolerance to the oral route and constant abdominal pain, for which she consulted the emergency department where an abdominal x-ray was performed and Abdominal tomography with findings consistent with sigmoid volvulus (Figure 2). The General Surgery service performs exploratory laparotomy, sigmoidectomy and colostomy (Figure 3). Patient with satisfactory evolution, adequate management of colostomy for which he is discharged. He is currently in a pre-surgical protocol for intestinal reconnection.

Discussion

Sigmoid volvulus was described by Hippocrates, corresponds to 2-3% of cases of intestinal obstruction caused by torsion (volvére) of the sigmoid on its mesentery with subsequent obstruction, dilatation, ischemia and risk of perforation. It most frequently

Figure 2: Top: Left: Chest X-ray shows marked dilatation of the colon (red arrow) that exceeds the hepatic shadow. Center and right: X-ray of the abdomen showing the coffee bean sign (yellow arrow) and the absence of distal gas (star). Bottom: Coronal, sagittal and axial reconstruction of the plain and contrast-enhanced abdominal tomography showing the north passage sign (red arrow), absence of distal gas (star) and the whirlpool sign (green arrow).

Figure 3: Intraoperative findings. Left: Markedly dilated and ischemic left colon (red arrow). Right: Sigmoid volvulus site (Black arrow).

affects men in a 3:1 ratio, with a mortality of 7-90% [3,8]. There are anatomical conditions and physiological factors that favor the appearance of SV, such as a wide and long sigmoid mesocolon that allows sigmoid mobility, narrow pelvis, and on the other hand, medications such as opioids that delay peristalsis favoring colonic overdistention [2,9]. Its pathogenesis comprises two aspects: the first is luminal obstruction that leads to increased intraluminal pressure, perforation, and bacterial translocation; the second vascular obstruction, initially venous to later compromise the arterial one that leads to intestinal ischemia [3]. It manifests with a bizarre clinical picture consisting of crampy abdominal pain, intermittent, ascending intensity, progressive and asymmetric abdominal distension associated with the absence of bowel movements [2].

The clinical diagnosis is focused on the early identification of the alteration in the acid-base balance given by the elevation of lactic acid and metabolic acidosis as indicators of intestinal ischemia [3,8].

Imaging diagnostic support based on simple abdominal X-ray (sensitivity 57%, specificity 90%) and computed tomography as the gold standard (sensitivity 90%, specificity 100%) [6], in search of the characteristic signs of this, such as the coffee bean or the inverted U sign [9,10], product of torsion, blind loop obstruction and intestinal dilatation with a band in its center formed by the apposition of the intestinal walls, has a sensitivity of 25% and a specificity of 80%, it can be seen in other volvulus such as caecal; the north pass sign [11], with a specificity of 85%, is given by the location of the sigmoid above the transverse colon; the nonspecific bird's beak or transitional sign caused by progressive narrowing and threadlike passage of contrast through the site of obstruction [6]. The use of intravenous contrast medium allows identification of the whirlpool sign, which is the site of torsion of the mesentery [6,12].

Treatment includes urgent return through endoscopy in the acute phase and subsequent sigmoidopexy or segmental resection, primary anastomosis, and end colostomy for second-stage restitution [2,7,13].

Conclusion

The rapid identification of the sigmoid volvulus allows timely surgical interventions with intestinal resections of lesser extension

and morbidity in patients, so it is important that the different specialists know its imaging findings.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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