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CASE REPORT

Incisionless Surgery as a Minimally Invasive Treatment of Sigmoid Volvulus Through the Colostomy Site. Case Report

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ABSTRACT
Sigmoid volvulus (SV), the most common presentation of colonic volvulus, produces an acute obstructive abdomen mainly in elderly patients. Computed tomography is considered the gold standard for diagnosis. Treatment depends on several factors, including the general condition of the patient and the experience of the surgeon. The objective is to present a minimally invasive and incisionless approach to resolve an uncomplicated SV in an elderly patient.

Keywords: *Sigmoid volvulus; Surgical procedures; Incisionless*

INTRODUCTION

Colonic volvulus is a rare cause of acute obstructive abdomen accounting for 2-3% of causes in the US and up to 10-50% in other areas of the world, including Latin America. Sigmoid volvulus (SV) is the most common, accounting for 50-90% of cases.[1] Most affected patients are those older than 70 years, institutionalized, bedridden, with muscular hypotrophy, chronic constipation, and who often suffer from neurological or psychological disorders.[2]

The diagnostic method considered the gold standard is computed tomography.

The multiple treatments available for its resolution can be summarized in endoscopic, radiological and surgical approaches. Devolvulation and endoscopic decompression is the treatment of choice in compensated patients without clinical or radiological signs of ischemia or perforation, with an approximate success of up to 90% in some series, associated with the placement of a transanal catheter. However, a high recurrence rate is observed, so many authors perform elective surgery days after the colonoscopy, after the improvement of the clinical picture and bowel preparation. In patients with suspected colonic perforation or ischemia, or in those in whom endoscopy was unsuccessful, surgical resection is recommended. The extent of the procedure, the approach, and the performance of a primary anastomosis with or without proximal diversion, or a permanent colostomy, depend on the condition of the patient and the experience of the surgeon.[1,2]

The objective of this report is to present a case of SV in an elderly ASA III patient, resolved with a minimally invasive approach without abdominal incisions.

The authors declare the absence of conflicts of interest.
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CASE REPORT

We present a 93-year-old man with a history of hypertension, benign prostatic hyperplasia, Parkinson's disease, prostration, and hypotrophy of the abdominal muscle. He was admitted to the emergency room due to a 72-hour abdominal distension and pain, associated with an inability to pass gas and stool. When questioned, he reported similar intermittent episodes in the last 5 years, which were resolved with mobilization and abdominal compression maneuvers by the companion and the physiotherapist at home.

On physical examination, the patient had hemodynamic stability, asymmetric distended abdomen with intestinal imprint on the abdominal wall, and diffuse pain, without guarding or rebound tenderness. In his digital rectal examination, remains of fecal matter were found.

Computed tomography of the chest, abdomen and pelvis with intravenous contrast showed a segment of the sigmoid colon with a decrease in caliber, interpreted as the foot of the volvulus, and a large retrograde colonic distention with abundant stool in the right colon (Fig. 1).

An emergency colonoscopy showed a volvulated area that could be negotiated draining a large amount of gas, although progress beyond 70 cm from the anal margin due to abundant feces. There were no signs of ischemia or necrosis. A K227 transanal catheter was placed.

An urgent colonoscopy showed a volvulated area that could be negotiated draining a large amount of gas, although progression beyond 70 cm from the anal margin was not possible due to the abundance of stool. There were no signs of ischemia or necrosis. A K227 transanal catheter was placed.

The patient evolved favorably, tolerating the diet and draining gas and liquid stool through the catheter, which was withdrawn after 48 h. However, the patient subsequently

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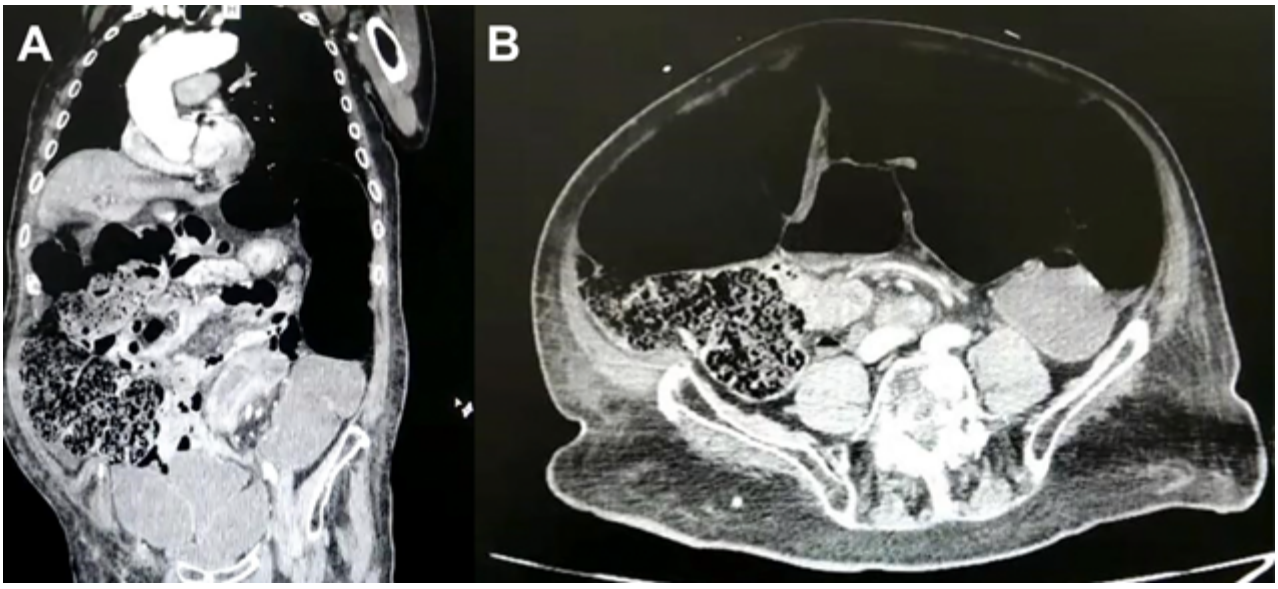

Figure 1: Computed tomography showing the foot of the volvulus (arrow) and the proximal colonic distention.

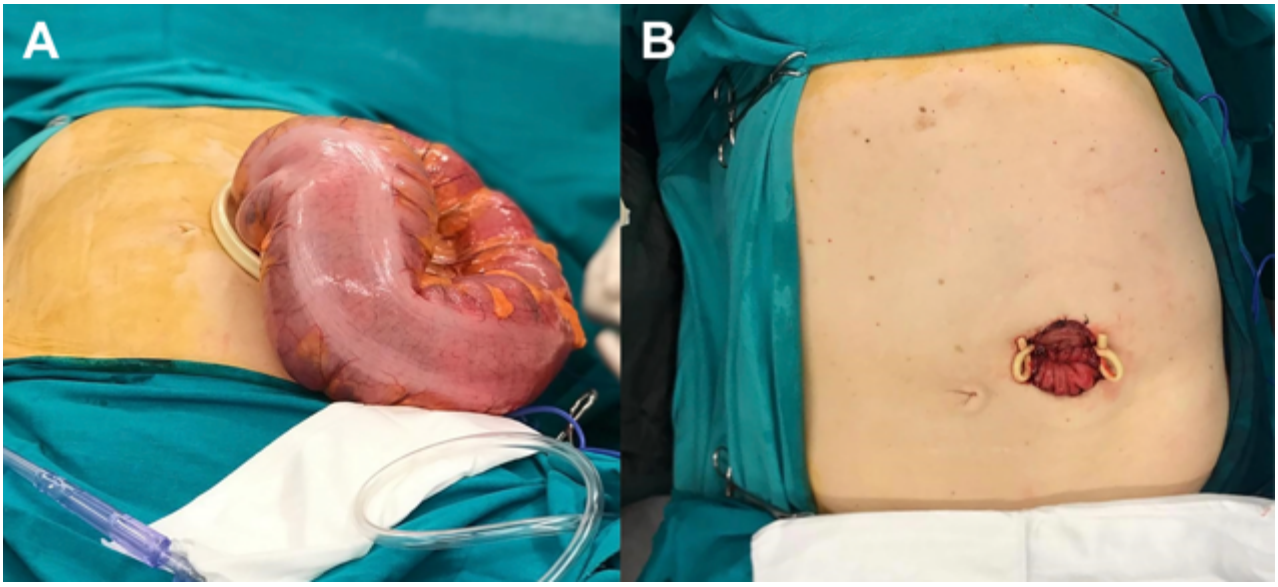

Figure 2: Exteriorized volvulus. Double-barrel colostomy.

began with progressive abdominal distention and pain, so surgery was decided on day 5. After general anesthesia and endotracheal intubation, he was placed in the modified Lloyd Davies position.

After antisepsis and infiltration with local anesthesia, a circumferential incision of approximately 3 cm in diameter was made in the left flank. The aponeurosis was incised longitudinally, the rectus abdominis muscle was dissected bluntly, and the cavity was entered. An Alexis-type skin retractor was placed and the redundant and volvulated sigmoid colon was exteriorized, proceeding with manual devolvulation. The sigmoid mesocolon ligation and colonic division were performed, completing the sigmoidectomy. A colostomy was performed according to the Mikulicz technique (Fig. 2).The approximate duration of the procedure was 50 minutes, the anesthetic recovery was favorable and the patient returned to the ward. A diet was established 6 hours after surgery, with good tolerance. On the first postoperative day, the colostomy was vital and passing stool, and the patient was discharged on the second postoperative day.

DISCUSSION

SV is an acute condition that mainly affects elderly patients, generally with multiple comorbidities that translate into greater postoperative morbidity and mortality.[1]

As mentioned above, the treatment of choice is endoscopic, as long as the patient's clinical condition allows it and there is no intestinal ischemia. However, due to the high

failure and recurrence rate of volvulus, surgical treatment is necessary and can be performed days after endoscopy, with prior bowel preparation.[1,2]

Different series, such as these of van der Naald, et al.[3] and Seow-En and Seow-Choen[4] report similar minimal approaches, primary anastomosis, and good results. Other authors, such as Alhindawi, et al.[5] performed the Hartmann procedure through the colostomy site in elderly patients without perioperative morbidity and mortality and with a short hospital stay.However, these studies and most of the currently available literature have some limitations, such as being retrospective and case series.

We present an elderly ASA III patient with significant comorbidities, which leads us to carry out this sequence of treatment to avoid surgery. Due to the torpid evolution of the patient after endoscopic treatment, we opted for a sigmoid resection and a double-barrel colostomy performed through the colostomy site, thus avoiding another larger incision, a prolonged surgical time, a possible dehiscence of the anastomosis or the rectal stump with its consequent consequences, and obtaining a rapid postoperative recovery and hospital discharge.

We consider that it is a safe, effective and easy to reproduce technique, both by general surgeons and by coloproctologists, which by avoiding the complications of a larger incision and dehiscence of the anastomosis or the rectal stump, is a very useful option for elderly patients with unfavorable clinical characteristics.

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COMMENT

In this article, the authors briefly summarize sigmoid volvulus and its therapeutic options. As in the case presented, patients with sigmoid volvulus tend to be mostly elderly, comorbid, and frail, which makes them more prone to developing postoperative complications. Minimally invasive methods are of choice in these cases, since they generate less inflammatory response and less pain than open surgery, accelerating recovery after the procedure.

In this case, after the failure of endoscopic treatment, the surgeons opted for resective surgery, using an innovative technique, scarcely described in the literature. It is based on the exteriorization and resection of the colon through the colostomy site and the placement of the mucous fistula. This is especially useful and appropriate in patients with sigmoid volvulus, because they usually have a dolichosigma, with a long and lax mesosigmoid, which allows adequate mobilization, without the need for extensive laparotomies. The great advantage of this technique is that due to its small incision, it retains the important benefits of the minimally invasive procedures, especially valuable in these patients with high surgical risk.

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