

## Giant solitary diverticulum of the sigmoid colon

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### ABSTRACT

Solitary giant diverticulum of the sigmoid colon is a very rare entity that can present as acute abdomen or with chronic nonspecific abdominal discomfort. The most important complications are perforation, obstruction and volvulation. Imaging studies show the characteristic "balloon sign", a large, smooth-walled gas-filled cyst. Treatment is surgical resection of the affected colonic segment. We present the case of a patient with recurrent episodes of diverticulitis that resolved with surgical resection.

**Keywords:** giant solitary diverticulum, sigmoid colon, balloon sign, colonic resection

### INTRODUCTION

Solitary giant diverticulum of the sigmoid colon is a very rare entity that can present as an acute abdomen or with chronic nonspecific abdominal discomfort reminiscent of typical uncomplicated acute diverticulitis.<sup>1</sup> The most important complications of a giant diverticulum are perforation, obstruction or volvulation. Both an abdominal x-ray and a barium enema show a large gas-filled cystic image (balloon sign), with regular edges and a smooth wall,<sup>2</sup> although computed tomography is the diagnostic test of choice. Treatment consists of en-bloc resection of the compromised colon segment.<sup>3</sup> Depending on the pathological appearance, these diverticula are classified as: type 1 or pseudodiverticulum (pulsion type); type 2 or inflammatory type, and type 3 or true diverticulum (contains all layers of the intestinal wall).<sup>4</sup>

### CASE

A 47-year-old female patient with a history of multiple consultations for episodes of chronic abdominal pain consulted due to exacerbation of cramping pain.

The abdominal x-ray showed an image of intra-abdominal gas, similar to a balloon. An abdominal CT scan reported a "large air bubble" in the left abdomen with no identifiable origin (Fig. 1).

Once pneumoperitoneum was ruled out, the study was completed with a colonoscopy that showed no findings of interest. The same intra-abdominal gas configuration was observed in the barium enema (Fig. 2).

The patient underwent laparoscopic surgery, although it had to be converted to open surgery due to adhesions and a severe inflammatory process next to the sigmoid colon and angle of Treitz as a consequence of recurrent acute episodes. A large solitary sigmoid diverticulum was identified (Fig. 3).



Figure 1. CT scan showing the "balloon sign," a large, thin-walled gas bubble without continuity with the lumen of the colon.



Figure 2. Barium enema. The narrow lumen of the diverticular neck prevents passage of contrast into the gas-filled diverticulum.

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Received: December, 2022. Accepted: December, 2023

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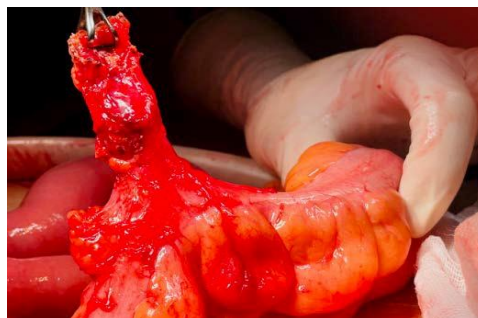


Figure 3. Intraoperative image. The solitary giant sigmoid diverticulum can be seen.

Despite having a narrow orifice, the base was very wide, so it was decided to perform a sigmoidectomy with an end-to-end colo-colonic anastomosis. The postoperative period

The pathological examination reported giant solitary colonic diverticulum (>5 cm), with signs of chronic inflammation and presence of foreign body giant cells, without evidence of malignancy, type 2 according to the McNutt classification.<sup>4</sup>

## DISCUSSION

A giant diverticulum is defined as an air-filled cystic diverticulum of more than 4 cm in maximum diameter.<sup>1</sup> Although its etiology is not clear, some authors propose a valvular mechanism of colonic gas trapping that is self-perpetuating with inflammatory episodes.<sup>5</sup> Although the first described case of solitary air cyst dates back to 1943, a small number of cases have been published that describe this clinical entity with various names: "giant gas cyst", "giant sigmoid diverticulum", "giant colonic diverticulum" or "intestinal gas cyst".

A giant diverticulum can present with a variety of signs and symptoms, ranging from an incidental finding in an asymptomatic patient, to presentation as an abdominal tumor or even an acute abdomen secondary to perforation.

The main etiopathogenic mechanism described is the valvular effect of the muscular layer that narrows the communication of the pseudodiverticulum of mucosa and submucosa with the intestinal lumen due to the inflammatory process.

The diagnosis is suspected with a plain abdominal x-ray and confirmed with a computed tomography scan. Both tests show the classic "balloon sign". The barium enema confirms the diagnosis when there is communication

was uneventful and the patient was discharged on the sixth postoperative day.

between the diverticulum and the lumen of the colon, which only occurs in 25% of cases. Sometimes, this study can precipitate perforation of the diverticulum. Sigmoidoscopy rarely provides information.

The treatment of choice is resection of the affected colonic segment, with anastomosis as long as there are no local complications such as perforation or abscess. In these cases, a Hartmann's procedure could be performed.

## CONCLUSION

We present the case of a giant solitary colon diverticulum type 2 (inflammatory). It should be suspected in the presence of a balloon-shaped radiological image. Its treatment is surgical to avoid complications such as the formation of abscesses or free perforation.

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