

Sigmoid volvulus secondary to undescended testicle, Report of first case in the literatures

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Introduction

A volvulus occurs when a segment of intestine, usually part of the colon, twists around its mesentery. Following this rotation, initially venous return is disturbed and causes ischemia caused by venous stasis. With the prolongation of obstruction in the mesenteric vessels, along with the distention of the twisted segment of the intestine due to the progressive production of gas by the bacteria inside it, the arterial input is also disturbed, and the mucosal ischemia gradually progresses towards the muscular and serous layers, leading to perforation of the entire thickness of the intestine

Sigmoid volvulus accounts for 2% to 5% of colonic obstructions in Western countries and 20% to 50% of colonic obstructions in Eastern countries (1). This occurs mostly in patients with lack of mobility and a history of chronic constipation, where the sigmoid colon becomes chronically distended and redundant.

Undescended testis (UDT) is defined as one or both testicles absent in scrotal sac when descending processes become disturbed and testis remains inside the peritoneal cavity (2). There are some very known complications of a undescendent intra-abdominal testicle such as cancer, ischemia and infertility(3); But the rotation of the colon around the spermatic cord of one UDT, it is a very rare phenomenon that there is no similar report.

In this article, we introduce a 67-year-old man who underwent laparotomy with the diagnosis of sigmoid volvulus, and the intraoperative findings were surprising.

Case presentation

A 67-year-old man, came to the emergency department with a complaint of abdominal pain and obstipation from 2 days ago. In the post medical history, he was a healthy man with 3 childs, with no comorbidities, or history of hospitalization in the past, and he mentioned a history of constipation. On examination, vital signs were within normal limits(BP=100/80 mmhg,PR=84 per/min,RR=14 per/min ,T=37),and in abdominal examination there was mild abdominal distention and mild general tenderness .With the suspicion of intestinal obstruction, plain abdominal x-rays were requested, and according to the appearance of coffee beans in the X-ray (Figure 1), the diagnosis of sigmoid volvulus was made. In the requested tests Hb was 14.5 g/dl, WBC was 9000 with 70% PMN. The rest of the tests were within normal limits.

After fluid resuscitation, and insertion of a nasogastric tube for upper decompression, rigid rectosigmoidoscopy was performed in the operating room, which was unsuccessful. the patient was transferred to the operating room for laparotomy. After induction of general anesthesia and midline laparotomy, the sigmoid was clearly warped around the meso-sigmoid. After manual untwisting, we noticed a tubular structure at the base of the meso-sigmoid(Figure 2 and 3). Suspecting that the said element is the spermatic cord,

the scrotum was touched and it was found that the left scrotum was empty. With further exploration and release of adhesions between the spermatic cord and meso-sigmoid, the testis was observed with a normal and non-atrophic appearance. After releasing all adhesions, orchidectomy was performed intra-abdominally by urologist. Then sigmoidectomy was performed by Hartmann's method by attending surgeon. On the first day after the operation, the number of leukocytes decreased (12000/dl) and the general condition of the patient improved. patient passed the post-operative period without significant incident and was discharged after 4 days. In the pathology report of the testicle sample, no neoplasia or dysplasia was reported.

Discussion

Etiology of sigmoid volvulus is a redundant loop of sigmoid that twists on its mesenteric pedicle more than 180° which lead to obstruction and venous outflow and arterial inflow disturbance, respectively. Prolongation of this disturbance leads to mucosal ischemia and infraction, and eventually, transmural perforation (4).

There are some known risk factors that have been associated with sigmoid volvulus such as anatomical redundancies in the mesentery, malfixation of the mesentery, chronic constipation, sedentary lifestyle, and neurological disease (5)

Plain abdominal radiographs will show the classical coffee bean or kidney bean sign, and often dilatation of the proximal colon. The characteristic "whirl" sign on CT scan corresponds with twisted mesentery (6).

When the viability of the sigmoid colon mucosa is suspected, flexible sigmoidoscopy is indicated to examine the colon mucosa, as well as insufflation during sigmoidoscopy to untwist the volvulus (7). Those patients with failed decompression or those with complications such as mucosal infarction or more advanced sequels need surgical intervention. The surgery of choice is a sigmoid colectomy. Performing primary anastomosis versus a Hartman procedure depends on intraoperative findings and patients status .

In the reported articles, there are few intestinal complications associated with cryptorchidism. Most of these articles considered the mechanical obstruction caused by the adhesion of the undescended testis or the compressive effect of the gubernaculum as the main cause of the mechanical obstruction of the small intestine.

Nik Hamidi et al reported A 22-year-old man with typical symptoms and imaging findings reported a small bowel obstruction that was caused by adhesions from an undescended testis (8). Kim et al and Bassiouny et al reported such cases of small bowel obstruction due to twisting of small bowel around gubernaculum of an undescendent testis (9),(10)

Despite the existence of reports of small bowel mechanical obstruction due to undescended testis, no report of colonic volvulus was found in the literature, and to our knowledge, this is the first report of such a case.

Sigmoid volvulus is one of the common cases that surgeons frequently encounter. The case scenarios are often the same, and from experience, most cases result from a long meso and an elongated sigmoid secondary to prolonged constipation. Therefore, it is clear that a scrotal examination would not be part of the routine examination of a patient with sigmoid volvulus. In this article, by reporting a very rare etiology for a very common pathology, we tried to point out the importance of head to toe examination in all patients.

Consent

Informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Ethical approval

This is a case report paper.

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Guarantor

The corresponding author is Dr. Javad Zebarjadi Bagherpour who accepts full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

Research registration number

None.

CRediT authorship contribution statement

All authors had same contribution on this work.

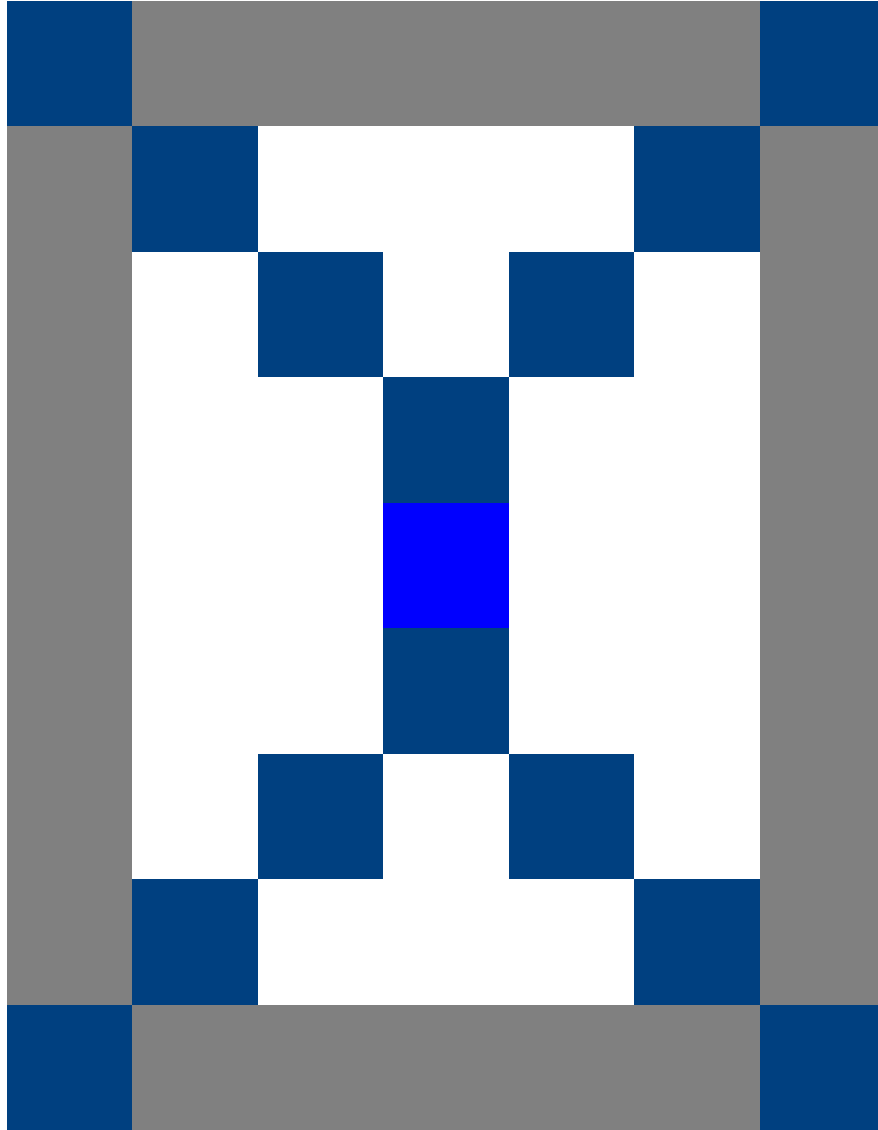
Declaration of competing interest

All authors confirm that there is no conflict of interest.

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Figure legends:

Figure 1:typical coffee bean sign in abdominal X-ray

Figure 2-3:intraoperative finding

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