Case Report

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A Case of Sigmoid Volvulus Associated with Constipation

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Abstract

Sigmoid volvulus (SV) is a rare cause of intestinal obstruction in adolescents. Delay in diagnosis may lead to complications such as necrosis and perforation of the volvulated colon. Clinical presentations are non-specific and the diagnosis is based on high clinical suspicion. Herein, we report a 14-year-old male patient who presented to the emergency department with abdominal pain and no stool output. It was learned that the patient had these complaints for the last four years and had been receiving constipation treatment. In abdominal X ray, the classic coffee bean finding of the sigmoid volvulus has seen. A diagnostic laparotomy was performed, which revealed a 180-degree rotation of the mesentery and a significant diameter difference in the colon due to significant dilatation proximal to the volvulus. This case with SV without any complications, reminds us that SV should be considered as a differential diagnosis in patients presenting with acute or recurrent abdominal pain and intestinal obstruction.

Keywords: Sigmoid volvulus, constipation, emergency

Introduction

Sigmoid volvulus (SV) is a rare but potentially life-threatening condition in pediatric patients. It may resolves pontaneously; therefore the diagnosis is usually missed or delayed (1). Delay in diagnosis may lead to complications including necrosis and perforation of the volvulated colon (2). Clinical presentations are non-specific and the diagnosis is based on high clinical suspicion. SV manifests acutely with abdominal pain, bloating and vomiting. However, the chronic form has an insidious course with vague symptoms at the time of diagnosis (3). In this article, we present a 14-year-old patient who had multiple emergency room visits and was evaluated as constipation in almost all of his visits, which eventually diagnosed as SV through detailed examination and evaluation. Key points;

1. Sigmoid volvulus should be considered in patients presenting with recurrent abdominal pain and constipation.
2. The clinical course of sigmoid volvulus in pediatric patients may be occult.

Case

A 14-year-old male patient was admitted to the pediatric emergency department with complaints of abdominal pain and no stool output for the last three days. When his history was questioned, it was learned that he had spontaneously regressing abdominal pain and constipation for the last four years, he did not have nausea and vomiting during these periods, he frequently applied to the emergency department with complaints of abdominal pain and was discharged after constipation treatments were arranged. The patient was evaluated in the emergency department; his vitalsigns were as follows: pulse rate 90/min, respiratory rate 19/min, oxygen saturation 98%, blood pressure 110/70 mmHg. There was no fever and vomiting. Physical examination revealed abdominal distension and diffuse tenderness in all quadrants. On rectal palpation, the ampulla was empty and there was no fecal contamination or gas discharge. There was no free air under the diaphragm in the standing abdominal X ray, but dilated loop of large bowel and the classic coffee bean finding of sigmoid volvulus were observed

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(Figure-1). Laboratory tests were as follows: Hemoglobin (Hb) 14.5 g/dl, White Blood Cell (WBC) 4.24 x10.e3/uL, Neutrophil count (NEU) 1.90 x.e3/uL, C-ReactiveProtein (CRP) 2.9 mg/L and liver and renal function tests were within normal range. Abdominal computed tomography (CT) was performed as a further investigation because the patient had no stool output. The transverse colon was 9 cm in diameter and appeared dilated, and 180-degree rotation of the mesentery was observed at the level of the descending colon where the dilated are a terminated. Sigmoid colon and rectum were thin and collapsed. Redundant sigmoid colon volvulus was observed. The patient was evaluated by pediatric surgery department. After oral intake was stopped and a nasogastric catheter was inserted, a small amount of fecal contamination was observed with bedside rectal irrigation. Diagnostic laparotomy was performed by the pediatric surgeon and a 180-degree rotation of the mesentery and a significant diameter difference in the colon due to significant dilatation proximal to the volvulus area were observed. There was no evidence of necrosis and the rest of the colon was healthy and normal (Figure-2). Considering that resection anastomos is might not be safe due to the diameter difference in the colon, it was decided to open a colostomy first. The pathologic examination of the biopsy material from the distal part of the dilated loop of large bowel was evaluated for Hirschprung's disease and no aganglionic area was observed. He was discharged on the 5th postoperative day. After 2 months, the colostomy was closed by resection anastomosis from the redundancy to the sigmoid colon and no complications were reported.

Figure 1. Coffee bean image seen in sigmoid volvulus

Figure 2. The intestinal anus volvulated 180 degrees and appears to be greatly dilated

Discussion

SV is a rare cause of intestinal obstruction inadolescents (2). Most patients with SV present with nausea, abdominal pain, bloating and vomiting which start insidiously, progresss lowly and settle within days (4). In our patient, other findings except vomiting were present. Only three studies were made with pediatric volvulus cases. One of them was made by Salas et al., in which a total of 63 cases were reported from 1941 to 2000 having the largest sample among all studies (4). Also, Colinet and colleagues reported 13 cases from 2001 to 2012 (5) and Atamanalp and co-authors presented 19 cases from a Turkish hospital (6).

The median age in SV is seven years and the incidence is higher in males than females (3.5:1) (4). These patients are usually relieved with stool or flatulence and are therefore frequently followed up with a diagnosis of constipation. Because of its insidious course, most patients present to the hospital 3 to 4 days after the onset of symptoms (1). Our case was also evaluated as constipation on multiple hospital admissions.

Various predisposing factors have been described among children. Hirschsprung's disease is one of the conditions associated with both transverse colonic and sigmoid volvulus. This disease was excluded in our patient by the abundant ganglion cells demonstrated in the biopsy specimen.

Physical symptoms are non-specific and the diagnosis can be made with complementary imaging studies such as

radiographs and CT scanand high clinical suspicion (1). Abdominal X-rays in children are usually non specific and lessuseful in differentiating volvulus from other disorders. A plain abdominal X-ray is suggestive of sigmoid volvulus in approximately 29% of patients (7). While abdominal X-ray is not very sensitive in detecting sigmoid volvulus findings in children, our patients howed a classical finding.

The diagnosis of sigmoid volvulus requires obtaining a detailed history, conducting a thorough clinical examination, and accurately interpreting plain abdominal radiographs. Diagnostic findings include the "whirlpool" sign, formed by the expansion of the sigmoid colon around the mesocolon and vessels, and the "Birds beak" appearance of afferent and efferent colon segments on barium enema. However, as in this case, the classic "coffee bean" sign may not be prominent in most pediatric cases and is not specific for distinguishing from other intra-abdominal pathologies (8).

Sigmoid resection is the definitive treatment for both children and adults, but nonoperative decompression should be tried for elective resection in patients without peritonitis findings (7). Since there were no sign of peritonitis in our patient, decompression was tried but was not successful. Our case was treated with sigmoidectomy, and endcolostomy (Hartman) and primary anastomosis of there maining healthy small intestine. It has been reported that the prognosis of sigmoid volvulus is quite good when diagnosed and treated rapidly (4).

If left untreated, SV can progress to ischemic colon, hemorrhagic infarction and even death; since these outcomes are potentially life-threatening, physicians should consider SV as a differential diagnosis in patients presenting with acute or recurrent abdominal pain and intestinal obstruction (1).

Conclusion

Clinicians and surgeons should be cautious and skeptical not to over look the diagnosis of sigmoid volvulus in a case presenting with symptoms of constipation, regardless of the patient's age.

References

1. Chang P-H, Jeng C-M, Chen D-F, Lin L-H. A case report and literature review of sigmoid volvulus in children. Medicine. 2017;96(52):e9434.
2. Kiyaka SM, Sikakulya FK, Masereka R, Okedi XF, Anyama P. Sigmoid volvulus in an adolescent female: A case report. International journal of surgery case reports. 2021;87:106430.
3. Haider F, Al Asheeri N, Ayoub B, Abrar E, Khamis J, Isa H, et al. Sigmoid volvulus in children: a case report. Journal of Medical Case Reports. 2017;11:1-5.
4. Salas S, Angel CA, Salas N, Murillo C, Swischuk L. Sigmoid volvulus in children and adolescents. Journal of the American College of Surgeons. 2000;190(6):717-23.
5. Colinet S, Rebeuh J, Gottrand F, Kalach N, Paquot I, Djeddi D, et al. Presentation and endoscopic management of sigmoid volvulus in children. European journal of pediatrics. 2015;174:965-9.
6. Atamanalp SS, Yildirgan Mİ, Başoğlu M, Kantarci M, Yılmaz İ. Sigmoid colon volvulus in children: review of 19 cases. Pediatric surgery international. 2004;20:492-5.
7. Smith S, Golladay E, Wagner C, Seibert J. Sigmoid volvulus in childhood. Southern medical journal. 1990;83(7):778-81.
8. Akintomide AO, Inyang AW. Spontaneous detorsion of sigmoid volvulus in a toddler: a timely abdominal X-ray that clinched the diagnosis and a review of the role of radiology. Int J Case Rep Images. 2019;10:10.5348.