CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

Available online at: http://www.iajps.com *A Case Report*

A CASE OF PEDIATRIC CECAL VOLVULUS PRESENTING WITH ABDOMINAL PAIN AND VOMITING

Hussam K. Alzahrani,[1] Yasir K. Alzahrani,[1] Abdullah M. Binjabi,[1] Muhannad S. Alzahrani,[2] Abdulmohsen M. Alsofi,[1] Abdulaziz A. Joharji[1]

[1] College of Medicine, Umm Al-Qura University, Makkah, Saudi Arabia

[2] Ibn Sina National College for Medical Studies, Jeddah, Saudi Arabia

Abstract

Cecal volvulus is an emergency surgical condition that is infrequently encountered in the pediatric age group. We describe an 11-year-old girl who presented with epigastric pain, dizziness, and bilious vomiting. A plain radiograph of the abdomen and barium enema examination revealed findings consistent with cecal volvulus. Transverse colon volvulus colopexy with appendectomy was performed on the patient and consisted of twisting of the volvulus with fixation of the mobile colon to the abdominal wall. Cecostomy with appendectomy were also performed. Given that patients with cecal volvulus may present with nonspecific symptoms, clinicians should be aware that radiographic studies play a major role in establishing the diagnosis, and these may help in preventing diagnostic and treatment delays.

Keywords: *Cecal disease, cecal volvulus, intestinal volvulus, pediatric*

Corresponding author:

Hussam K. Alzahrani,

7524 Abdullah Bin Alabbas Str., Makkah 24351

Saudi Arabia

Telephone: 00966-557329720

Email: Hussam94k@gmail.com

QR code

Please cite this article in press Hussam K. Alzahrani et al., ***A Case of Pediatric Cecal Volvulus Presenting With Abdominal Pain and Vomiting.,*** *Indo Am. J. P. Sci, 2018; 05(12).*

INTRODUCTION:

Colonic volvulus is a rare surgical emergency that accounts for 1–3% of bowel obstructions [1]. Although rare in the pediatric age group, colonic volvulus is reportedly more frequent in children with psychomotor retardation and/or chronic constipation [2,3]. Physicians face challenges in diagnosing the condition, as patients typically present with non-specific symptoms such as intermittent abdominal pain or symptoms associated with intestinal strangulation and sepsis [4]. This results in diagnostic delays, and therefore, radiographic studies are central for the early pre-operative diagnosis in pediatric cases [5].

The standard of care is laparotomy with surgical removal of the cecum along with the terminal ileum.[1] Some investigators have reported a success rate of approximately 30% with interventions such as colonoscopic detorsion and decompression [7,8]; however, these results were reported in adult patients, who also experienced high recurrence rates after the procedure. It is thus possible that a single colonoscopic decompression can be offered to stable adult patients [9] as a bridge to surgery [10]. Unfortunately, only a few isolated reports have described the management of cecal volvulus in children [2,11].

We report the case of an 11-year-old girl who presented with unspecific abdominal pain, and a barium enema revealed the rare diagnosis of cecal volvulus, which was confirmed on laparotomy.

CASE PRESENTATION:

An 11-year-old girl presented to the emergency room with complaints of epigastric pain of eight-day duration, dizziness, and bilious vomiting of three-day duration. Her medical history was remarkable for chronic constipation since birth, with chronic usage of laxative. After examination, a provisional diagnosis was made for adhesive intestinal obstruction.

The initial plain radiograph of the abdomen demonstrated severe dilatation of the ascending and transverse colon (Figure 1).

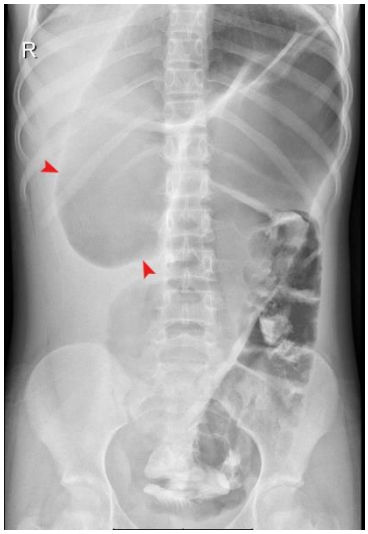

Figure 1. Plain abdominal radiograph showing severe dilatation of the ascending and transverse colon.

A barium enema examination revealed a non-dilated distal colonic segment till mid transverse colon with tapering of the contrast colon (Figure 2 and 3), which was highly suggestive of cecal volvulus. An ultrasound examination of the abdomen was unremarkable.

Figure 2. Plain film showing marked distension of the large bowel with its long axis extending from the right lower quadrant to the epigastrium.

Figure 3. Contrast enema image showing non-dilated distal colonic segment till mid transverse colon with tapering of the contrast colon (arrowhead).

Her white blood cell count and hemoglobin level were within normal ranges. Urinalysis, amylase, and liver function tests were normal, and urine culture did not show bacterial growth.

Transverse colon volvulus colopexy with appendectomy were offered, and these confirmed the radiologic findings. Cecostomy with appendectomy were also performed. The patient was started on intravenous omeprazole, and her post-operative was uneventful.

DISCUSSION:

The cecum is rarely involved in cases of pediatric intestinal obstruction due to volvulus. Cecal volvulus is so rare in children that its true incidence is unknown, and only a few isolated cases have been reported recently [2,11,12]. Several factors have been associated with volvulus, including previous abdominal surgery, constipation, neurological disorders, abdominal or pelvic tumors, and congenital anomalies [3,13]. The patient in our case had a long-standing history of constipation and presented with epigastric pain, dizziness, and vomiting. The clinical presentation of cecal volvulus is non-specific, and patients will present with the features of bowel obstruction [12,13]. Although rare, clinicians should consider cecal volvulus as part of the differential in children presenting with sudden-onset abdominal symptoms and those with potential risk factors [3,12,13].

Previous reports state that a mobile cecum is required for the ascending colon to twist around a fixed based [12–14], as it was in our case. The rotation of a mobile portion of the colon occurs around the ileocolic artery, resulting in impaired blood flow and subsequently lead to complications such as ischemia, gangrene, perforation, and death [2,13]. Given that patients present with non-specific symptoms, plain radiographs of the abdomen can point toward the diagnosis, which can be subsequently confirmed with a contrast enema [12–14]. Although barium contrast enema is the most sensitive diagnostic modality in patients with colonic volvulus [2], it is seldom performed in cases with cecal volvulus plain because clinicians rarely suspect the diagnosis.

A plain radiograph of the abdomen is fast and affordable and is associated with low radiation exposure. Typical abdominal radiographic findings consist of a dilated cecum in an ectopic position in the abdomen, an air-distended bowel with haustral markings in the left upper quadrant, and an ileocecal twist [13,14]. Other characteristic signs that have been observed on the plain abdominal radiographs of patients with cecal, sigmoid, or transverse colon volvulus include the coffee bean appearance and a dilated cecal apex [14]. While the coffee bean sign is a specific diagnostic feature, it is present in only about 30% of patients with colonic volvulus [15]. Preintervention contrast enema examination demonstrates a characteristic “bird’s beak" appearance that indicates the point of maximal torsion due to twisting of the colon [5,12,14]. The tapering obstruction of the right colon usually points toward the dilated and malpositioned cecum, as described by other investigators [5,14]. The barium enema findings in our case were, therefore, typical.

Our patient underwent transverse colon volvulus colopexy with appendectomy. Surgical intervention is generally recommended to correct intestinal obstruction in patients with cecal volvulus. Surgical options may vary and include manual detorsion, cecopexy, cecostomy, or colectomy by open or laparoscopic approaches [1,6–9]; however, no single strategy has been widely accepted for the resolution of colonic volvulus in children. Additionally, there are no prospective studies to guide management in these cases, and the general agreement is to perform a resection of the nonviable portion of the intestine in the presence of gangrenous changes and perforations. While endoscopic reduction is noninvasive and may be preferable in children [2,11,12], it has been associated with a high recurrence rate [13]. Surgical intervention was offered to our patient because evidence shows a greater advantage of surgery over colonoscopy [16]. According to a previous report, colonoscopy has a success rate of less than 5% with the added risk of bowel perforation. Consequently,

the practice guidelines have been constitutionally established in favor of open surgery as first line of management of cecal volvulus.

CONCLUSION:

Cecal volvulus is an unusual finding in children. Its clinical presentation is highly variable, and this may contribute to a low clinical suspicion. An abdominal radiograph is recommended in children presenting with unspecific gastrointestinal symptoms, such as abdominal pain, constipation, or vomiting, and signs suggestive of intestinal obstruction. Clinicians should be aware that radiographic studies play a major role in establishing the diagnosis, and these may help in preventing diagnostic and treatment delays.

REFERENCES:

1. Perrot L, Fohlen A, Alves A, Lubrano J. Management of the colonic volvulus in 2016. J Visc Surg, 2016;153:183–92.
2. Folaranmi SE, Cho A, Tareen F, Morabito A, Rakoczy G, Cserni T. Proximal large bowel volvulus in children: 6 new cases and review of the literature. J Pediatr Surg, 2012;47:1572–5.
3. Takada K, Hamada Y, Sato M, Fujii Y, Teraguchi M, Kaneko K, et al. Cecal volvulus in children with mental disability. Pediatr Surg Int, 2007;23:1011–4.
4. Rodríguez-Hermosa JI, Martín A, Farrés R, Pont J, Codina-Cazador A, Ruiz B, et al. [Intestinal occlusion due to cecal volvulus]. Cirugia Espanola, 2005;78:385–7.
5. Peterson CM, Anderson JS, Hara AK, Carenza JW, Menias CO. Volvulus of the Gastrointestinal Tract: Appearances at Multimodality Imaging. RadioGraphics, 2009;29:1281–93.
6. Consorti ET, Liu TH. Diagnosis and treatment of caecal volvulus. Postgrad Med J, 2005;81:772–6.
7. Lou Z, Yu E-D, Zhang W, Meng R-G, Hao L-Q, Fu C-G. Appropriate treatment of acute sigmoid volvulus in the emergency setting. World J Gastroenterol WJG, 2013;19:4979–83.
8. Gingold D, Murrell Z. Management of Colonic Volvulus. Clin Colon Rectal Surg, 2012;25:236–44.
9. Mulas C, Bruna M, García-Armengol J, Roig JV. Management of colonic volvulus. Experience in 75 patients. Rev Espanola Enfermedades Dig Organo Of Soc Espanola Patol Dig, 2010;102:239–48.
10. Ortega PM, Rotellar F, Arredondo J, Baixauli J, Zozaya-Larequi FJ, Betés M, et al. Minimal invasive management of acute cecal volvulus: colonoscopy followed by laparoscopic cecopexy. Rev Espanola Enfermedades Dig Organo Of Soc Espanola Patol Dig, 2014;106:497–9.
11. van de Lagemaat M, Blink M, Bakx R, de Meij TG. Cecal Volvulus in Children: Is There Place for Colonoscopic Decompression? J Pediatr Gastroenterol Nutr, 2018;66:e59.
12. Shahramian I, Bazi A, Ebadati D, Rostami K, Delaramnasab M. Colonoscopic decompression of childhood sigmoid and cecal volvulus. Turk J Gastroenterol, 2018;29:221–5.
13. Tannouri S, Hendi A, Gilje E, Grissom L, Katz D. Pediatric colonic volvulus: A single-institution experience and review. J Pediatr Surg, 2017;52:1062–6.
14. Marine MB, Cooper ML, Delaney LR, Jennings SG, Rescorla FJ, Karmazyn B. Diagnosis of pediatric colonic volvulus with abdominal radiography: how good are we? Pediatr Radiol, 2017;47:404–10.
15. Garel C, Blouet M, Belloy F, Petit T, Pelage J-P. Diagnosis of pediatric gastric, small-bowel and colonic volvulus. Pediatr Radiol, 2016;46:130–8.
16. Madiba TE, Thomson SR. The management of cecal volvulus. Dis Colon Rectum, 2002;45:264–7.

Ethics and Consent: Informed consent was obtained from the patient prior to the publication of this report.