

CASE REPORT

Transverse colon volvulus in a patient with autism

Rony Shah^{1,*}, Linda Klumpp¹, Juan Negron-Diaz¹, Torr Carmain², Jeffrey Jordan¹, and HCA Healthcare/USF Morsani College of Medicine GME Programs at Citrus Memorial Hospital, Inverness, Florida

¹Department of Internal Medicine, Citrus Memorial Hospital, Inverness, FL 34452, USA and ²Department of Surgery, Citrus Memorial Hospital, Inverness, FL 34452, USA

*Correspondence address. HCA Citrus Memorial Hospital, 502 W. Highland Blvd, Inverness, FL 34452, USA.
Tel.: 352-496-0456; Fax: (352)-344-6499; E-mail: rony.shah@hcahealthcare.com

Abstract

Transverse colon volvulus is an extremely rare cause of bowel obstruction with approximately 100 cases reported in literature. Transverse colon volvulus presents with signs and symptoms of large bowel obstruction, but it can become a surgical emergency due to bowel infarction or peritonitis. We present a rare case of transverse colon volvulus in a 36-year-old male patient with severe autism. We hope this case report will raise awareness of this disease.

INTRODUCTION

Transverse colon volvulus is an extremely rare cause of bowel obstruction; it constitutes approximately 5% of all causes of bowel obstruction [1]. There have been ~100 total cases reported in literature [2]. Transverse colon volvulus presents with signs and symptoms of large bowel obstruction, but it can become a surgical emergency due to bowel infarction or peritonitis [1–2]. This disease has a high risk of mortality, so it requires urgent diagnosis and surgical intervention. We present a rare case of transverse colon volvulus in a patient with severe autism.

CASE PRESENTATION

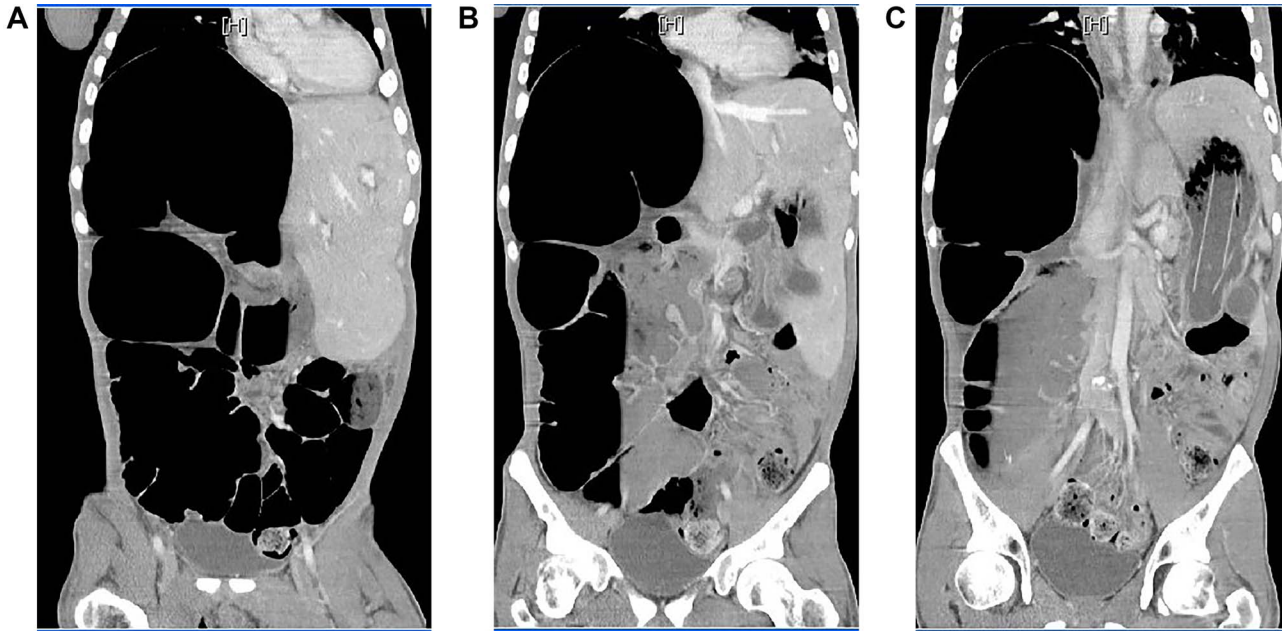
A 36-year-old male presented to the emergency room (ER) for not having a bowel movement, abdominal distension, decreased appetite and increased lethargy for 3 days. Patient is nonverbal, so majority of the history was obtained from his caretaker. He reported a past medical history of severe autism. Vitals were temperature 98.8 F, blood pressure 127/88 mmHg, heart rate 125 beats per minute, respiratory rate 24 breaths per minute and oxygen saturation 94%. On physical examination patient

appeared somnolent with a distended abdomen, decreased bowel sounds and mild diffuse tenderness on palpation. Laboratory results were significant for white blood count (WBC) 25.8 U/L, hemoglobin (Hg) 12.3 g/dL, platelet 370×10^3 U/L, blood urea nitrogen (BUN)/creatinine 14/0.5 mg/dL, aspartate aminotransferase (AST) 13 U/L, alanine aminotransferase (ALT) 12 U/L, alkaline phosphatase 121 U/L, lipase 25 U/L and lactic acid 4.64 mmol/L. Computed tomography (CT) scan demonstrated marked distension of the cecum and a colonic loop in the right upper abdomen due to a volvulus possibly in the ascending colon and is unable to visualize the transverse and proximal descending colon and a foreign body within the stomach (Fig 1A–C). Patient was taken for an emergent exploratory laparotomy; however prior to the procedure, he underwent an esophagogastroduodenoscopy (EGD). A foreign body was found in the stomach, but it was too large to be extracted on EGD. Examination of the abdominal cavity intraoperatively revealed a dilated colon (15 cm), a large section of volvulized colon in the right upper quadrant and a segment of volvulus in the distal transverse colon. Patient underwent an extended right hemicolectomy with anastomosis of the terminal ileum

Received: June 30, 2020. Accepted: July 6, 2020

Published by Oxford University Press and JSCR Publishing Ltd. All rights reserved. © The Author(s) 2020.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com



Figures 1: Axial view of CT of abdomen and pelvis with intravenous contrast (A) & (B), dilated cecum and colonic loop in the right upper quadrant and (C) foreign body within the stomach.

to the transverse colon at the level of the splenic flexure. He also underwent a gastrotomy to remove the foreign body, which appeared to be rolled up tar paper. He was started on empiric antibiotic regimen of vancomycin, ciprofloxacin and metronidazole for 2 days. His antibiotics were de-escalated to ceftriaxone and metronidazole and continued for an additional 5 days. Patient had a nasogastric tube placed following the procedure which continued to drain bilious material for 3 days before it was removed. His diet was advanced as tolerated. He was safely discharged to his group home, and no complications were noted at patient's 2-week follow-up with general surgery.

DISCUSSION

Majority of the volvulus occur in the sigmoid colon (60–80%), cecum (20–40%) and transverse colon (3%) [1, 3]. The mortality rate of transverse colon volvulus is 33% compared to 21% for sigmoid colon volvulus and 10% for cecum volvulus [1–2]. Any segment of the colon can get rotated if it has a long loose mesentery which becomes narrow at the base [2, 4]. This is less likely to occur in the transverse colon due to its short mesentery and fixed hepatic and splenic flexure [1, 2]. Several predisposing risk factors are history of volvulus, previous surgery involving bowel translocation, malignancy, distal colonic obstruction, adhesions and congenital defects such as intestinal malrotation with an inadequate fixation of posterior abdominal wall, chilaiditis syndrome, *Clostridium difficile*-associated pseudomembranous colitis, pregnancy and chronic constipation because it causes severe elongation of the transverse colon [1–2, 5–10]. In our case patient's mental status and the foreign body within his stomach may have contributed to chronic constipation as a risk factor for his transverse colon volvulus. The two most common presentations of transverse colon volvulus are acute fulminating type and subacute progressive type. The acute fulminating type presents with sudden onset of severe abdominal pain, rebound tenderness, nausea, vomiting, mild abdominal

distension, severe leukocytosis and clinical deterioration [1–2, 5]. The subacute progressive type presents with mild abdominal pain, severe abdominal distension, normal to mildly elevated leukocytosis and clinically stable [1–2, 5]. Our patient's mental status made it difficult to clinically evaluate him, but his physical exam findings and laboratory findings suggest that he had the subacute progressive type which was progressing to the acute fulminating type. Early diagnosis of the subacute progressive type can be challenging which allows it to progress to the life-threatening acute fulminant type with bowel infarction, peritonitis and death [5 and 6]. The diagnosis of transverse colon volvulus is typically made intraoperatively because the radiographic findings are not as characteristic as seen in sigmoid colon volvulus [1–2, 5]. There are no typical radiographic findings of transverse colon volvulus seen on a CT [5]. The classical 'bird's beak' appearance of the transverse colon is seen with contrast enema, but it is not recommended in acute settings because it can delay surgical intervention [1–2, 5]. The CT scan findings in our case suggested a volvulus, but we were unable to identify the exact location of the volvulus. The treatment is not decompression as it is in cecal or sigmoid volvulus due to the risk of failure and necrosis [1–2, 5]. Treatment options include detorsion of the bowel, untwisting with colopexy, surgical resection with primary anastomosis or surgical resection with stoma formation [1–2, 5]. Surgical resection with primary anastomosis or stoma formation is the preferred option because it prevents recurrence [1–2, 5–6, 9]. Simple detorsion of the bowel and untwisting with colopexy are not the preferred treatment options due to the higher risk of recurrence or even death [1–2, 5, 7, 9]. Our patient underwent surgical resection with primary anastomosis.

CONCLUSION

Transverse colon volvulus is a rare cause of large bowel obstruction with an extremely high mortality rate. Early diagnosis and treatment can reduce the risk of mortality as seen in our

patient. We hope our case report will raise awareness of this disease.

DISCLAIMER

This research was supported in part by HCA Healthcare and/or an HCA Healthcare-affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

CONSENT

The patient provided informed consent.

CONFLICT OF INTEREST

No conflict of interest to report.

FUNDING

None.

REFERENCES

1. Walczak D, Czerwinska M, Wojciech F, Piotr T. Volvulus of transverse colon as rare causes of obstruction- a case report and literature review. *Pol Przegl Chir* 2013;**85**:606–7.
2. Hasnaoui H, Laytimi F, Elfellah Y, Mouaqit O, Benjelloun EB, Ousadden A, et al. Transverse colon volvulus presenting as bowel obstruction: a case report. *J Med Case Reports* 2019;**13**:156.
3. Islam S, Hosein D, Hamarayan P, Naraynsingh V. Synchronic volvulus of splenic flexure and caecum: a very rare cause of large bowel obstruction. *BMJ Case Rep* 2016;**1**:1–5.
4. Bullard KM, Rothenberger DA. Colon, rectum, and anus. In: *W: Brunnicardi FC(red) Schwartz's Principles of surgery*, Vol. 8. 2005, 1099.
5. Abdulla H, Hamza E, Dhaif A. Transverse colon volvulus in a patient with sickle cell disease. *BMJ Case Rep* 2019;**12**:e228863.
6. Sana L, Ali G, Kallel H, Amine B, Ahmed S, Ali E, et al. Spontaneous transverse colon volvulus. *Pan Afr Med J* 2013;**14**:160.
7. Ciraldo A, Thomas D, Schmidt S. A case report: transverse colon volvulus associated with chilaidditis syndrome. *Internet J Emerg Intensive Care Med* 2000;**4**:2.
8. Tobinaga S, Morinaga A, Sajima S, Kanazawa N, Yoshida T. Transverse to descending colon volvulus and megacolon with mesenterium commune: report of a case. *Surg Today* 2004;**34**:875–7.
9. Deshmukh S, Maske AN, Deshpande AP, Shende S. Transverse colon volvulus with chilaidditis syndrome. *Indian J Surg* 2010;**72**:347–9.
10. Yaseen ZH, Watson RE, Dean HA, Wilson ME. Case report: transverse colon volvulus in a patient with *Clostridium difficile* pseudomembranous colitis. *Am J Med Sci* 1994;**308**:247–50.