

Cecal Bascule as a Rare Presentation of Cytomegalovirus Colitis in a Kidney Transplant Recipient

Hong Gi Shim, MD¹, Alex Huh, MD¹, and Aaron Dickstein, MD¹

¹*Division of Gastroenterology & Hepatology, Department of Medicine, Tufts Medical Center, Boston, MA*

ABSTRACT

Cecal bascule is a rare type of volvulus of the colon and requires a mobile cecum and ascending colon, which could be due to congenital or acquired anatomic abnormalities. Inflammatory conditions that cause acute changes in colonic mobility or motility may contribute to development of volvulus, as described in other types of colonic obstruction. Patients with risk factors for a mobile proximal colon presenting with obstructive symptoms should undergo prompt diagnostic evaluation for volvulus to allow for timely intervention. We report an unusual case of invasive cytomegalovirus colitis presenting as cecal bascule in a kidney transplant recipient.

INTRODUCTION

Cecal volvulus is defined as the rotation or torsion of a mobile cecum and ascending colon, representing 1%–3% of all large-bowel obstructions.¹ Cecal bascule is the rarest of the 3 types of cecal volvuli and involves an upward, anterior folding of the cecum rather than the axial twisting in the torsion-type cecal volvuli.^{2,3} Typical risk factors include congenital mobile cecum, peritoneal adhesions, bowel atony, pregnancy, or Hirschsprung disease.^{1,4,5} There are case reports, especially in the pediatric literature, describing other types of colonic obstruction in association with diverticulitis, inflammatory bowel disease, gallstone ileus, appendiceal mucocele, endometriosis, and *Mycobacterium tuberculosis* that may affect colonic mobility to a sufficient degree to cause rotation or torsion.^{6–10} To our knowledge, there are no reports in the current literature of cecal volvulus associated with inflammatory or infectious etiologies in adults.

CASE REPORT

A 51-year-old man with a medical history of end-stage renal disease due to immunoglobulin A (IgA) nephropathy requiring 2 kidney transplants presented with 3 days of progressive lower abdominal pain. Notably, he had a history of paralytic ileus with cecal dilation up to 13 cm during the immediate postoperative period after the first kidney transplant 10 years prior, treated successfully with conservative management including neostigmine and rectal tube decompression. His immunosuppressive regimen included mycophenolate mofetil, tacrolimus, and prednisone. Initial abdominal computed tomography (CT) showed findings suggestive of mild uncomplicated sigmoid diverticulitis, and he was subsequently discharged home on oral antibiotics.

However, he returned to the emergency department the next day with worsening periumbilical and lower abdominal pain. This time, abdominal plain film showed cecal dilatation up to 20 cm suggestive of volvulus. Repeat abdominal CT confirmed a distended proximal right colon folding on itself with an appearance suggestive of a cecal bascule (Figure 1). On serial abdominal examinations, the patient developed worsening diffuse abdominal tenderness and mild distension. He was subsequently taken to the operating room where he underwent endoscopic decompression, followed by exploratory laparotomy with right hemicolectomy and end ileostomy. Gross examination of the resected bowel showed dilated cecum and ascending colon with atrophic, edematous mucosa and multiple areas of ischemia and ulcerations.



Figure 1. Abdominal computed tomography showing a distended proximal right colon slightly folded on itself, consistent with an appearance of a cecal bascule.

Pathologic review and immunohistochemical stain revealed extensive invasive cytomegalovirus (CMV) colitis throughout the colonic mucosa with involvement of 4 lymph nodes and extensive CMV inclusions (Figure 2). Serum CMV DNA titer was high at 4,188,270 copies/mL. Although invasive CMV colitis is typically seen with reactivation or exacerbation, his CMV colitis was suspected to be an unusual case of a recent primary infection, as he had no history of previous CMV exposure based on negative CMV serologies in both the donor and the recipient before and after the second kidney transplant. He completed 3 weeks of 2.5 mg per kg per dose of intravenous ganciclovir every 12 hours for induction therapy (dose adjusted for renal impairment), followed by 6 weeks of 900 mg of oral valganciclovir twice daily with good clinical and serologic responses.

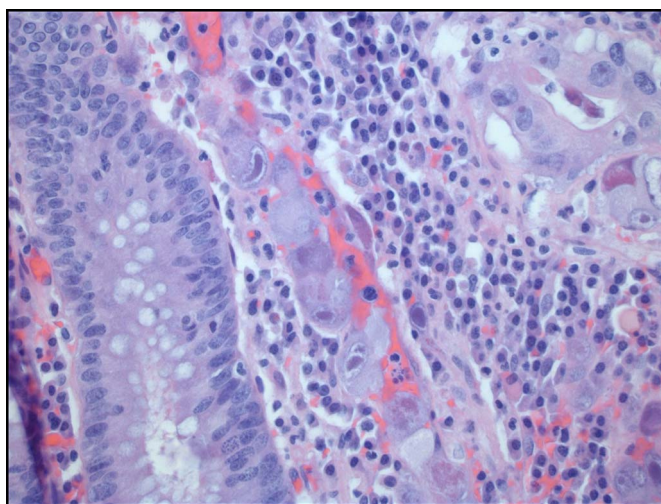


Figure 2. Photomicrograph of the resected bowel with hematoxylin and eosin stain shows extensive cytomegalovirus colitis throughout colonic mucosa and “owl eye” inclusions in infected endothelial cells of blood vessels.

DISCUSSION

This case deserves mention for a few reasons. First, it highlights the importance of early recognition of cecal volvulus to allow for timely surgery and good outcome. The initial choice of a diagnostic study should be an upright abdominal plain film to evaluate for pneumoperitoneum, which, if present, requires immediate surgery. Clinically stable patients with evidence of cecal volvulus but no pneumoperitoneum on a plain film should undergo abdominal CT to confirm the diagnosis, locate the level of obstruction, and assess for bowel compromise.^{11,12} Cecal volvulus is managed primarily via surgery, and the surgical approach may vary depending on patient stability.^{13,14} Delayed diagnosis or treatment of this condition may lead to serious, potentially life-threatening complications such as bowel ischemia, necrosis, or perforation. Second, this case suggests that CMV, in addition to causing diarrhea, may have additional effects on colonic mobility and motility that could lead to pseudo-obstruction and volvulus. As depicted in this case, patients with known risk factors such as previous abdominal surgery and peritoneal adhesions may be more susceptible to rotation or torsion of the mobile colon in setting of acute changes in colonic mobility due to a second infectious or inflammatory process. For immunosuppressed patients with acute obstructive symptoms, testing and treating for CMV should be an early part of the workup.

DISCLOSURES

Author contributions: HG Shim wrote and edited the manuscript. A. Huh and A. Dickstein edited the manuscript. A. Dickstein is the article guarantor.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received April 8, 2019; Accepted July 9, 2019

REFERENCES

1. Lung BE, Yelika SB, Murthy AS, Gachabayov M, Denoya P. Cecal bascule: A systematic review of the literature. *Tech Coloproctol*. 2018;22(2):75–80.
2. Delabrousse E, Sarliève P, Sailley N, Aubry S, Kastler BA. Cecal volvulus: CT findings and correlation with pathophysiology. *Emerg Radiol*. 2007;14:411–5.
3. Pousada L. Cecal bascule: An overlooked diagnosis in the elderly. *J Am Geriatr Soc*. 1992;40:65–7.
4. John H, Gyr T, Giudici G, Martinoli S, Marx A. Cecal volvulus in pregnancy. Case report and review of literature. *Arch Gynecol Obstet*. 1996;258:161–4.
5. Sarioğlu A, Tanyel FC, Büyükpamukçu N, Hiçsönmez A. Colonic volvulus: A rare presentation of Hirschsprung's disease. *J Pediatr Surg*. 1997;32:117.
6. Hayakawa K, Tanikake M, Yoshida S, et al. Radiological diagnosis of large-bowel obstruction: Nonneoplastic etiology. *Jpn J Radiol*. 2012;30:541–52.
7. Osman N, Subar D, Loh MY, Goscimski A. Gallstone ileus of the sigmoid colon: An unusual cause of large-bowel obstruction. *HPB Surg*. 2010;2010:153740.
8. Opreanu RC, Sobinsky J, Basson MD. Appendicitis and benign appendiceal mucocoele presenting as large bowel obstruction. *J Gastrointest Surg*. 2013;17:609–10.

9. Pramateftakis MG, Psomas S, Kanellos D, et al. Large bowel obstruction due to endometriosis. *Tech Coloproctol*. 2010;14(suppl 1):S87–9.
10. Jadvar H, Mindelzun RE, Olcott EW, Levitt DB. Still the great mimic: Abdominal tuberculosis. *AJR Am J Roentgenol*. 1997;168:1455–60.
11. Peterson CM, Anderson JS, Hara AK, et al. Volvulus of the gastrointestinal tract: Appearances at multimodality imaging. *Radiographics*. 2009;29:1281.
12. Rosenblat JM, Rozenblit AM, Wolf EL, DuBrow RA, Den EI, Levsky JM. Findings of cecal volvulus at CT. *Radiology*. 2010;256:169–75.
13. Lee SY, Bhaduri M. Cecal volvulus. *CMAJ*. 2013;185:684.
14. Madiba TE, Thomson SR. The management of cecal volvulus. *Dis Colon Rectum*. 2002;45:264–7.

Copyright: © 2019 The Author(s). Published by Wolters Kluwer Health, Inc. on behalf of The American College of Gastroenterology. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.