A Rare Case Of Simultaneous Cecal and Sigmoid Volvulus In An Elderly Female

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Abstract

Volvulus is the twisting of a segment of the gastrointestinal tract around the mesentery and can lead to bowel obstruction. The sigmoid colon (80%) is the most common site of volvulus followed by the cecum (15%). In the United States, large bowel obstruction due to cecal volvulus is rare. Simultaneous cecal and sigmoid volvulus is exceedingly rare. Here, we report a case of a 70-year-old female patient who presented with abdominal pain, nausea, and vomiting. CT-Ab/Pel revealed sigmoid volvulus, and the patient underwent decompressive sigmoidoscopy. The patient initially reported improved symptoms but developed abdominal distension the next day. The patient was taken for an exploratory laparotomy and was found to have both cecal and sigmoid volvulus. Double colonic volvulus is extremely rate and to our knowledge, this is the sixth reported case to have developed both conditions simultaneously.

Introduction

Volvulus is the axial twisting of the small or large bowel around its mesenteric attachment to the abdominal wall. The term derives from the Latin word *volvere*, which means "to roll" or "to twist". With regards to large bowel volvulus, sigmoid volvulus is the most common occurring in two-thirds of large bowel volvulus. Cecal volvulus on the other hand is a rarer occurrence. It has an incidence of 2.8-7.1 per million annually and accounts for 11% of all volvulus related bowel obstructions. Cecal and sigmoid volvulus presenting in the same patient is an exceedingly rare phenomenon. Information on both cecal and sigmoid volvulus occurring in the same patients has been limited to case reports and to this date only six reports have been found in the literature. In this case report we are presenting a 70-year-old female with diffuse abdominal pain, abdominal distension, nausea, and vomiting, intra-operatively she was found to have both cecal and sigmoid volvulus simultaneously.

Case Presentation

- 70 year old female presented to the ED with 3 day history of diffuse abdominal pain, distension, and nausea.
- CT Abdomen pelvis showed sigmoid volvulus measuring up to 1 0 cm with air fluid level, no free air noted
- The patient was subsequently taken for decompressive colonoscopy and endoscopic detorsion.
- The pt had a temporary relief after the procedure, but pain retained early the next morning to the same extent as before. It was decided to take the patient to the operating room at this time
- Intraoperative there was gross distension of the right colon and cecum as well as the sigmoid colon. The patient was discovered to have both cecal volvulus and sigmoid volvulus.
- Right hemicolectomy was performed with ileotransverse colon side to side isoperistaltic anastomosis.
- Next, sigmoid colectomy was performed to address the sigmoid volvulus.
- Over, the next several days the patient remained stable. We patiently awaited return of bowel function until POD#5 , both gas and soft stool.
- After, starting diet, she began to have nausea and vomiting, NGT was placed and pt was NPO again
- Nausea and vomiting subsequently resolved on POD#10, diet was slowly restarted. The patient retained bowel function throughout this period.
- She was discharged on POD#12, in stable condition to home

Imaging

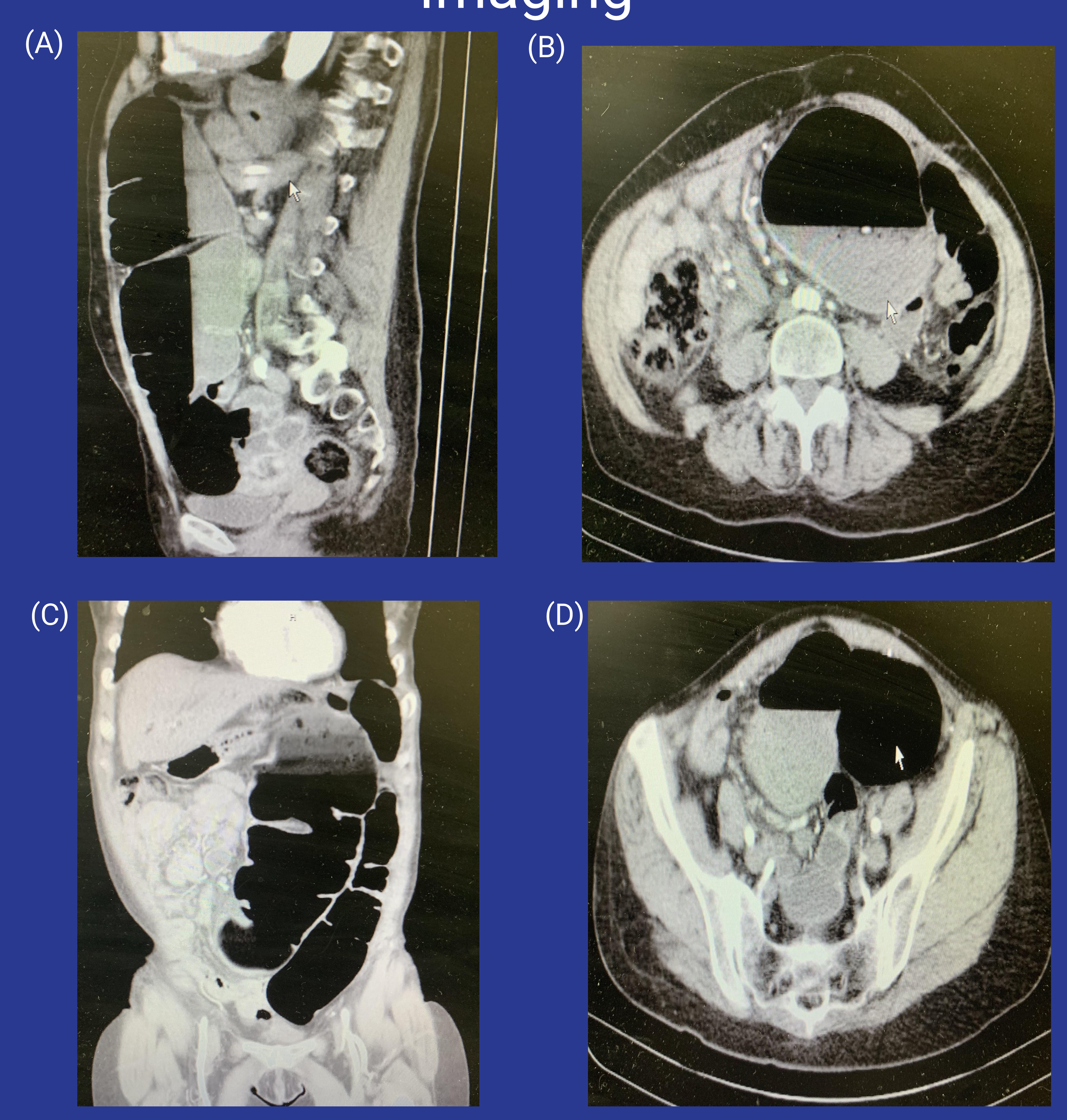

Figure 1. (A) CT Abdomen/Pelvis Sagittal view diffuse dilation of sigmoid and transverse colon. (B)CT Abdomen /Pelvis Axial view showing dilations of sigmoid colon, mild to moderate distention of cecum. (C) CT Abdomen/Pelvis Coronal view showing "Coffee Bean" sign, indicating sigmoid volvulus (D) CT Abdomen pelvis Axial view showing additional sigmoid distention, sigmoid volvulus.

Discussions

- The two main types of volvulus encountered by the practicing general surgeon are sigmoid and cecal volvulus.
- Cecal volvulus is thus subdivided in cecal bascule and axial torsion. Cecal bascule is when the inferior aspect of a large redundant cecum turns upward along a transverse axis across the cecum.
- Patients presenting with cecal volvulus typically have diffuse abdominal pain, nausea, vomiting, constipation and obstipation.
- Physical exam may show abdominal distension, tympany, peritonitis or severe tenderness.
- Initial work up should include complete blood count, basic metabolic panel, lactic acid level, CXR, abdominal flat plate x-ray, computerized tomography of abdomen and pelvis, gastrograffin enema.
- Patients should be resuscitated with intravenous fluid, kept nil per so, with nasogastric tube decompression..
- Imaging modalities such as chest and abdominal x-ray may show the volvulized cecum and right hemicolon pointing from the RLQ to the LUQ unlike the coffee bean sign of Sigmoid volvulus which typically points from the LLQ to the RUQ.
- CT abdomen pelvis results may show dilated loops of right colon and cecum, as well as whirl sign, which is the twisted axial mesenteric vasculature. Gastrograffin enema may show "bird beaks sign.
- The gold standard of care for treatment of cecal volvulus involves surgical resection with formal right hemicolectomy with primary anastomosis.. In the presence of perforation and fecal contamination, resection with temporary end ileostomy is also acceptable as well. In the past, there have been trials of colonoscopic decompression, but they were associated with high failure rate at initial onset and high recurrence rate.
- The simultaneous finding of cecal and sigmoid volvulus in our case was completely unexpected. CT scan did not show cecal volvulus. Other authors that have encountered simultaneous cecal and sigmoid volvulus did not know prior to exploratory laparotomy..
- We think that possibly the patient's cecum may have volvulized in between the time of the initial CT and surgical intervention.
- On literary review. Typically, these patients were elderly between the age of 70-80 with multiple co-morbidities. .
- To the best of our knowledge this is the sixth reported case of concurrent cecal and sigmoid volvulus in the same patient.

Conclusion

In this report, we describe a rare case of simultaneous sigmoid and cecal volvulus. This is of clinical interest as cecal volvulus alone, is an uncommon cause of bowel obstruction and can lead to significant morbidity if not clinically suspected. The occurrence of both in a patient concurrently is exceedingly rare. In our case, cecal volvulus was not initially suspected based on imaging results of the CT Ab/Pel. We were taken by surprise upon entering into the abdomen surgically to discover distended and hyperemic cecum and right hemicolon. Although, we were not suspecting the pathology we encountered. We feel as if we correctly and adequately provided the correct intervention for the patient and the practicing general surgeon can use this case as a paradigm if they encounter this rare pathology.

References

1. Atamanalp SS. Ozogul B. Kisaoglu A. 2012. Cecal Volvulus: A Rare Cause of Intestinal Obstruction. EAJM.44.115-6.

2. Sadot E, Greenstein A, Zisman SR. 2010. Laparoscopic Approach For Metachronous Cecal and Sigmoid Volvulus. JSLS.14.561-5.

3.Hasbahceci M. Basak F. Alimoglu O. 2012. Cecal Volvulus. Indian J Surg. 74(6):476-479

4. Islam S, Hosein D, Bheem V, Dan D. 2016 Synchronous volvulus of the sigmoid colon and caecum, a very rare cause of large bowel obstruction. BMJ Case Rep. 10(11) 1-5

5. Sadot, E. Greenstein, AJ. Zisman, S. R. 2010. Laparoscopic approach for metachronous cecal and sigmoid volvulus. *JSLS 14*(4):561–565.

6. Singh, G., Gupta, S. K., & Gupta, S. (1985). Simultaneous occurrence of sigmoid and cecal volvulus. Dis Col Rec, *28*(2):115–116.

7. Ballantyne G. Brandner M. Beart RW. Ilstrup DM. 1985. Volvulus of the Colon. Ann Surg.202(1):83-92

8. Reasbeck PG. 1979. Cecal and Sigmoid Volvulus in the Same Patient. Post Grad Med J.55:824-825

9. Atamanalp SS. Ozogul B. Kisaoglu A. 2012. Cecal Volvulus: A Rare Cause of Intestinal Obstruction. Euras J Med.44:115-116

10. Zinkin LD. Katz LD. Rosin JD.1979. Volvulus of Transverse Colon: Report of Case and Review of Literature.22:492-496

11. Javors BR. Sorkin NS. Flint GW. 1986. Transverse Colon Volvulus. Case Report and Review. AJR AM J Roentgenol. 128:68-72

12. Gerwig WH. 1955. Volvulus of the Colon. Surg Clin North Am. 1395-1399.

13. Kasten KR. Marcello PW. Francone TD. 2014. Colonic Volvulus. Decker Intel Prop. 1-21.