

Unusual Presentation of Duodenal Ulcer Presenting with Duodenal Intussusception

Shilpa Lingala, MD¹, Andrew Moore, MD², Siri Kadire, MD², Sridhar Shankar, MD³, Kanak Das, MD¹, and Colin W. Howden, MD, FACG¹

¹Division of Gastroenterology and Hepatology, University of Tennessee Health Science Center, Memphis, TN

²Department of Medicine, University of Tennessee Health Science Center, Memphis, TN

³Department of Radiology, University of Tennessee Health Science Center, Memphis, TN

ABSTRACT

We present a unique case of duodeno-duodenal intussusception from a duodenal bulb ulcer. A 38-year-old man presented with nausea, vomiting, and abdominal pain. Computed tomography showed duodenal intussusception. Esophagogastroduodenoscopy (EGD) showed a linear gastric ulcer and a duodenal bulb ulcer with an overlying blood clot. *Helicobacter pylori* status was positive. Intussusception resolved spontaneously without intervention. He completed treatment for *H. pylori* infection, and repeat EGD showed ulcer healing. Duodenal intussusception is rarely reported; intussusception from an edematous duodenal ulcer with an overlying blood clot mimicking a mass lesion acting as lead point has never been reported to our knowledge.

INTRODUCTION

Intussusception is a condition in which there is invagination of the full thickness of the bowel wall into more distal bowel. It is more common in children than adults. Duodenal intussusception is extremely rare due to the fixed retroperitoneal position of the duodenum. Intussusception of the more distal small intestine is also rare; when it occurs, the lead point is usually a tumor, Meckel's diverticulum, or a surgically created stoma.^{1,2} In previous reports of small bowel intussusception involving the duodenum, causes have included prolapse of ampullary lesions, duodenal tumors, congenital malrotation, and duplication cysts.³⁻⁷

CASE REPORT

A 38-year-old man presented with intermittent abdominal pain, nausea, and vomiting for 2 days. Pain was located in the right upper and lower quadrant, described as "achy" and "sharp" with no radiation, and it was aggravated by food and alcohol. No alleviating factors were noted. He also reported 3 episodes of hematemesis and 1 episode of melena a few days earlier. He denied weight loss, constipation, diarrhea, or fever. Past medical history was positive for 1 episode of acute pancreatitis 3 years ago. He was not on any medicines including NSAIDs. He drank up to 25 ounces of beer per day.

On physical exam, he had diminished bowel sounds and mild tenderness in the right upper and lower abdominal quadrants. On rectal exam, dark brown stool was present. Abdominal and pelvic computed tomography (CT) with contrast showed concentric loops of bowel with intervening mesenteric fat in the descending duodenum suggestive of intussusception (Figure 1). There were mildly dilated small bowel loops in the pelvis, but no other abnormal findings were noted.

Hemoglobin and hematocrit were 13.1 g/dL and 38.3%, respectively. Serum lipase was normal. After surgical evaluation, esophagogastroduodenoscopy (EGD) was recommended to evaluate for possible small bowel ischemia and

ACG Case Rep J 2018;5:e25. doi:10.14309/crj.2018.25. Published online: March 28, 2018.

Correspondence: Shilpa Lingala, Division of Gastroenterology, 956 Court Ave, Suite H210, Memphis, TN 38163 (lshilpa@uthsc.edu).



Copyright: © 2018 Lingala et al. This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0>.



Figure 1. (A) Axial and (B) coronal abdominal computed tomography showing duodenal intussusception with typical bowel-within-bowel sign or target sign.

to confirm intussusception prior to any surgical intervention. His symptoms improved after admission except for mild abdominal pain. EGD on the day after admission revealed a linear ulcer on the lesser curvature of stomach. In the duodenal bulb, there was a mass-like lesion composed of a duodenal bulb ulcer with edema and a tightly adherent blood clot (Figure 2). There was mild diffuse oozing of blood from the lesion. The clot was removed with cold snaring, and bipolar diathermy was applied to the lesion to achieve adequate hemostasis. Biopsies from the gastric mucosa and the presumed duodenal mass were positive for *Helicobacter pylori* infection; biopsy of the duodenal mass showed only chronic inflammation. There was no evidence of intussusception at the time of endoscopy.

The *H. pylori* infection was treated with omeprazole, amoxicillin, and clarithromycin for 14 days. Repeat EGD 6 weeks after completion showed normal mucosa in the duodenal bulb with complete disappearance of the previously noted mass lesion (Figure 2). The gastric ulcer that had been noted on the initial EGD had also healed. Our presumption was that the duodenal ulcer with underlying edema and the appearance of a

mass lesion noted on initial EGD had been the probable cause of intussusception.

DISCUSSION

Intussusception is a condition in which the proximal bowel telescopes into the distal bowel, which may lead to intestinal obstruction. This was first reported in 1674.⁸ Intussusception is rare in adults, accounting for 5% of all intussusceptions and 1-5% of bowel obstructions.⁹ Eight to twenty percent of cases are idiopathic, without a lead point lesion.^{9,10} Secondary intussusception may occur in Crohn's disease from inflammatory edema and spasm, or it may be due to post-operative adhesions, Meckel's diverticulum, intestinal tumors, or the presence of jejunostomy feeding tubes.^{11,12}

Intussusception involving the duodenum is uncommon due to its fixed anatomical position. Duodeno-duodenal intussusception has rarely been attributed to benign or malignant tumors of the duodenum or ampulla, congenital malformations, or duplication cysts. In our patient, a large duodenal ulcer with underlying edema and an overlying blood clot with the appearance of a duodenal bulb mass presumably acted as a lead point for the intussusception in a manner similar to what has been rarely reported in Crohn's disease.

Clinical manifestations in adults are non-specific and may include nausea, vomiting, gastrointestinal bleeding, change in bowel habits, constipation, and abdominal distension. Abdominal CT is considered the most sensitive modality in diagnosis and can usually determine the presence of a lead point.¹¹ CT may reveal the typical bowel-within-bowel sign (or target sign), which is composed of the outer intussusciens, inner intussusceptum, and central fat density formed by mesenteric fat and vessels.¹¹ CT may help differentiate intussusception with or without a lead point and thus avoid

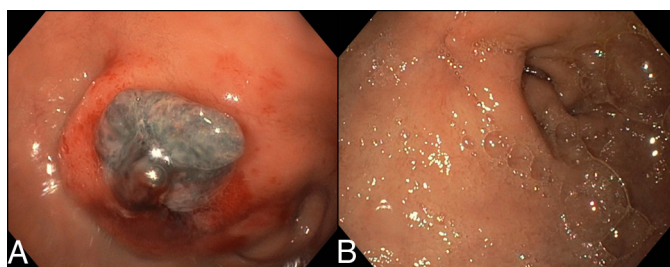


Figure 2. (A) Initial esophagogastroduodenoscopy (EGD) showing duodenal ulcer with underlying edema and an overlying blood clot mimicking a mass lesion. (B) Follow-up EGD showing normal mucosa in the duodenal bulb with complete disappearance of the previously noted mass lesion.

unnecessary surgical intervention. In intussusception without a lead point, there are no signs of proximal bowel obstruction, target-like or sausage-shaped mass, or layering effect. When a lead point is present, there may be signs of bowel obstruction, bowel wall edema, and loss of the classic 3-layer appearance due to impaired mesenteric circulation and demonstration of the lead mass.¹²

Surgical or endoscopic intervention is usually the definitive management of intussusception. Intervention should be prompt, as delay may lead to bowel ischemia and obstruction. Proximal small bowel lesions are generally transient and non-obstructive.¹³ However, surgical or endoscopic intervention should be performed in all patients to rule out malignant lesions that may act as a lead point. Surgical management usually requires resection of the involved bowel segment. Reduction can be attempted in small bowel intussusceptions if the segment involved is viable and malignancy is not suspected.¹⁴

DISCLOSURES

Author contributions: S. Lingala and C.W. Howden wrote the manuscript. All other authors contributed equally to the manuscript. C.W. Howden is the article guarantor.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received October 19, 2017; Accepted January 25, 2018

REFERENCES

1. Meshikhes AW, Al-Momen SA, Al Talaq FT, Al-Jarroof AH. Adult intussusception caused by a lipoma in the small bowel: Report of a case. *Surg Today*. 2005;35(2):161-5.
2. Stubenbord WT, Thorbjarnarson B. Intussusception in adults. *Ann Surg*. 1970;172(2):306-10.
3. Chalmers N, De Beaux AC, Garden OJ. Case report: Prolapse of an ampullary tumour beyond the duodeno-jejunal flexure. *Clin Radiol*. 1993;47(2):141-2.
4. Taams J, Huizinga WK, Somers SR. The wandering ampulla-duodenal-jejunal intussusception of a carcinoid tumour with displacement of the bile duct to the left iliac fossa. A case report. *S Afr J Surg*. 1992;30(4):153-5.
5. Gardner-Thorpe J, Hardwick RH, Carroll NR, Gibbs P, Jamieson NV, Praseedom RK. Adult duodenal intussusception associated with congenital malrotation. *World J Gastroenterol*. 2007;13(28):3892-4.
6. Torres Diez E, Pellón Dabén R, Crespo Del Pozo J, González Sánchez FJ. Imaging findings of duodenal duplication cyst complicated with duodenal intussusception and biliary dilatation. *Case Rep Radiol*. 2016;2016:3069576.
7. Pradhan D, Kaur N, Nagi B. Duodenoduodenal intussusception: Report of three challenging cases with literature review. *J Cancer Res Ther*. 2015;11(4):1031.
8. de Moulin D. Paul Barbette, M.D.: A seventeenth-century Amsterdam author of best-selling textbooks. *Bull Hist Med*. 1985;59(4):506-14.
9. Azar T, Berger DL. Adult intussusception. *Ann Surg*. 1997;226(2):134-8.
10. Erkan N, Hacıyanlı M, Yildirim M, Sayhan H, Vardar E, Polat AF. Intussusception in adults: An unusual and challenging condition for surgeons. *Int J Colorectal Dis*. 2005;20(5):452-6.
11. Warshauer DM, Lee JK. Adult intussusception detected at CT or MR imaging: Clinical-imaging correlation. *Radiology*. 1999;212(3):853-60.
12. Kim YH, Blake MA, Harisinghani MG, et al. Adult intestinal intussusception: CT appearances and identification of a causative lead point. *Radiographics*. 2006;26(3):733-44.
13. Sandrasegaran K, Kopecky KK, Rajesh A, Lappas J. Proximal small bowel intussusceptions in adults: CT appearance and clinical significance. *Abdom Imaging*. 2004;29(6):653-7.
14. Marinis A, Yiallourou A, Samanides L, et al. Intussusception of the bowel in adults: A review. *World J Gastroenterol*. 2009;15(4):407-11.