



Chronic Mesenteric Volvulus with Superior Mesenteric Venous Thrombosis: A Case Report

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Abstract

Mesenteric volvulus is a life-threatening complication of malrotation. It's often found in children prior to 1 month of age and requires immediate surgical intervention. After the infant stage, chronic mesenteric torsion becomes difficult to diagnose because of intermittent and vague clinical symptoms. Herein, we report an unusual older adult case of 74-year-old with symptoms of intermittent episodes of epigastralgia and upper gastrointestinal tract bleeding, who was diagnosed with chronic mesenteric torsion resulting in chronic Superior Mesenteric Vein (SMV) thrombosis. He received a laparotomy for reduction of the intestine and made a full recovery after surgery. There was no any episode of gastrointestinal discomfort presented till now (2020/01).

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Introduction

Mesenteric volvulus is a life-threatening complication of malrotation. Most individuals with intestinal malrotation develop signs of acute small bowel obstruction or ischemic bowel in early infancy. This usually leads to surgical intervention at a young age. After the infant stage, chronic mesenteric torsion becomes difficult to diagnose because of intermittent and vague clinical symptoms.

Case Presentation

A 74-year-old male was admitted for a 3 day history of tarry stools and mild hiccups. His history was significant for recurrent epigastralgia of 2 years duration. The pain was exacerbated after eating, but was relieved after hiccups, flatulation, or assuming the flexion position. Workup in our gastrointestinal outpatient department leads to a diagnosis of type II bulb deformity and gallstones. Laparoscopic Cholecystectomy was performed in November, 2009; however, his symptoms persisted. On physical examination, there was mild pale conjunctiva but no obvious abdominal tenderness nor distended abdomen. Laboratory studies were only notable for mild anemia. Upper GI panendoscopy and colonoscopy both revealed no active bleeding. ^{99m}Tc-RBC scintigraphy indicated possible active bleeding from the small intestine/jejunum. Based on this finding, celiac angiography was performed which revealed a twist of the Superior Mesenteric Artery (SMA) and chronic Superior Mesenteric Vein (SMV) thrombosis with a long segmental stricture of the SMV and engorged collateral veins (Figure 1). Abdominal Computed Tomography (CT) revealed twisting of mesenteric root, SMA, SMV, ileum, and cecum with engorged and torturous collateral veins to the SMV root, especially from the territories of the right colic vein and ileal vein. There was no filling defect in SMA or SMV lumen or extravasation of the IV contrast medium indicating no active bleeding (Figure 2). Laparotomy performed at September 19th revealed SMA torsion and herniation

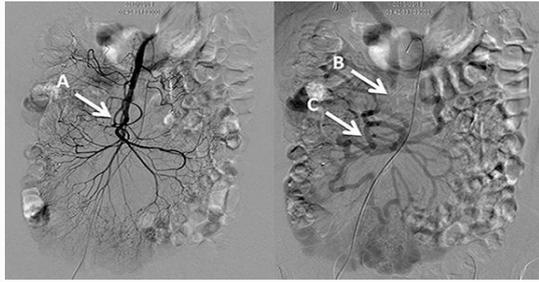


Figure 1: Celiac angiography showed (A) a twist of the superior mesenteric artery and (B) a long segmental stricture of the superior mesenteric vein with (C) engorged collateral veins.

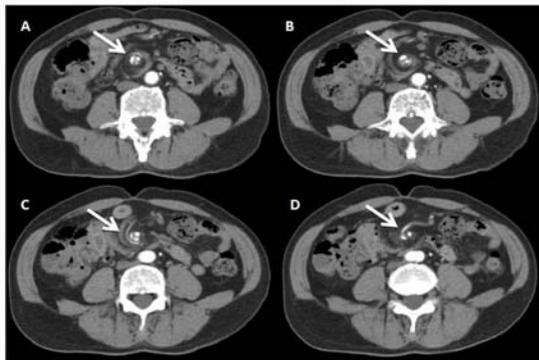


Figure 2: Abdominal computed tomography images revealed twisting of mesenteric root, SMA, SMV, ileum, and cecum with engorged and tortuous collateral veins to the SMV root, especially from the territories of the right colic vein and ileal vein. There was no filling defect in SMA or SMV lumen nor extravasation of the IV contrast medium indicating no active bleeding.

of the terminal ileum into the cecum in the midabdomen. The cecum and ascending colon was found to be on top of the small bowel, not in the normal retroperitoneal position (Figure 3). After enterolysis and reduction of the intestine, the ascending colon was fixed to the retroperitoneal position. The patient tolerated the procedure well, and has been pain free and on a regular diet since surgery. There was no any episode of gastrointestinal discomfort presented till now (2020/01).

Discussion

The first case of chronic volvulus with SMV thrombosis reported by medical literature was in a 13-year-old girl with malrotation [1]. Our case in this study was the oldest individual case reported. This is because most individuals with intestinal malrotation develop signs of acute small bowel obstruction or ischemic bowel in early infancy. This usually leads to surgical intervention at a young age. In our case, nonspecific clinical findings and past history similar to upper gastrointestinal bleeding made diagnosis difficult. Because of his initial symptoms of tarry stool without abdominal tenderness, a workup for GI bleeding was performed; however, the diagnosis was not made until the patient received celiac angiography and abdominal CT. The celiac angiography showed a long segmental stricture of the SMV and engorged collateral veins, which was suspicious for chronic thrombosis of the SMV. Abdominal CT images showed a “whirlpool sign”, compatible with midgut volvulus. Chronic SMV

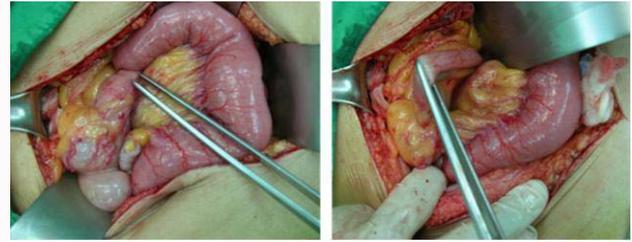


Figure 3: The terminal ileum was herniated into the cecum at the level of the midabdomen.

thrombosis with engorged collateral veins manifested as bleeding gastrointestinal varices. Upper GI panendoscopy and colonoscopy both could not find the bleeding point, but the small bowel lumen revealed many blood clots and ^{99m}Tc -RBC scintigraphy indicated possible active bleeding from the proximal jejunum. The imaging study showed chronic volvulus and SMV thrombosis, which may explain the cause of the GI bleeding and tarry stools [2]. Huang et al. [3] categorized intestinal volvulus in adults into two types according to their cause: (1) the primary form in which small bowel volvulus occurs without any apparent intrinsic anatomical anomalies; and (2) the secondary type in which small bowel volvulus is due to an anatomical abnormality, such as adhesions, mesenteric or omental defects, or an intestinal diverticulum. Secondary small bowel volvulus is clinically common. Our case belongs to the primary type and is based on clinical and image findings where malrotation was less likely. After reduction of the intestine, the ascending colon was fixed to the posterior abdominal wall.

Conclusion

We have reported the oldest case of a male with intermittent epigastralgia who was also diagnosed with chronic mesenteric torsion resulting in chronic Superior Mesenteric Vein (SMV) thrombosis. After operation, the patient was followed up and there were no signs of tarry stool nor epigastralgia recurred till Jan. 2020.

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