Case Report

Bleeding giant Meckel diverticulum, masquerading as abdominal tuberculosis

Abstract

Meckel's diverticulum is the most common congenital anomaly of gastrointestinal(GI) tract. It's clinical presentation varies with age and overlaps with multiple GI pathologies. We are presenting a case of 18-year old boy presenting with overt lower GI bleeding, suspected to be intestinal tuberculosis based on imaging and Mantoux test. Initially responded to anti-tubercular treatment. However, his symptoms of GI bleed recurred, and repeat computed tomography(CT) scan showed suspicion of small bowel stricture with a dilated bowel loop. Exploration revealed a giant Meckel's diverticulum which was resected and patient remained asymptomatic in the follow-up for 2 years. Bleeding giant Meckel's diverticulum is sparingly reported in literature. However, even in tuberculosis endemic countries it showed be suspected as a possible cause of lower GI bleeding in young age group.

Keywords: lower gastrointestinal bleeding, abdominal tuberculosis, Giant Meckel diverticulum

Volume 14 Issue 1 - 2023

Nalinikanta Ghosh, Somanath Malage, Ashish Singh, Rahul, Rajan Saxena
Department of Surgical Gastroenterology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, India

Correspondence: Rahul, Associate Professor, Surgical Gastroenterology, SGPGIMS, Lucknow, India – 226014, Email rahulimsbh@gmail.com

Received: January 17, 2023 | **Published:** February 13, 2023

Abbreviations: GI, gastrointestinal; MD, Meckel's diverticulum; ATT, anti-tubercular treatment; CECT, contrast enhanced computed tomography; GMD, giant Meckel's diverticulum

Introduction

Most common congenital anomaly of the gastrointestinal (GI) tract is Meckel's diverticulum (MD)- a true diverticulum of ileum. The incidence is 2% among autopsy series; however, only 2-4% become symptomatic.[1,2] It may present with crampy abdominal pain, intestinal obstruction (common in adults), or lower GI bleeding (common in children).[3,4] Symptoms overlap with tuberculosis, and often create a diagnostic dilemma, especially in regions endemic for tuberculosis. Anti-tubercular treatment (ATT) is usually introduced based on clinical suspicion and imaging features. A rare case of tuberculosis of Meckel's diverticulum presenting with perforation peritonitis was reported by Rahangdale et al., which was managed by resection and anastomosis.[5] We herein, report a case of a young boy, who presented with overt lower GI bleeding and central abdominal pain. Imaging (contrast enhanced computed tomography- CECT) revealed a dilated segment of distal small bowel (Figure 1). He was started on ATT based on clinical suspicion and positive Mantoux test to which his symptoms responded. However, lower GI bleed recurred one year later and was referred to surgical gastroenterology for re-evaluation. Gastroduodenoscopy, colonoscopy and capsule endoscopy was unyielding. Repeat CECT revealed a similar picture. He was taken up for exploratory laparotomy with plan of intra-operative endoscopy. Resection and anastomosis was done for a Giant Meckel's diverticulum (GMD) discovered intra-operatively. Patient remained asymptomatic for more than 2-years follow-up.

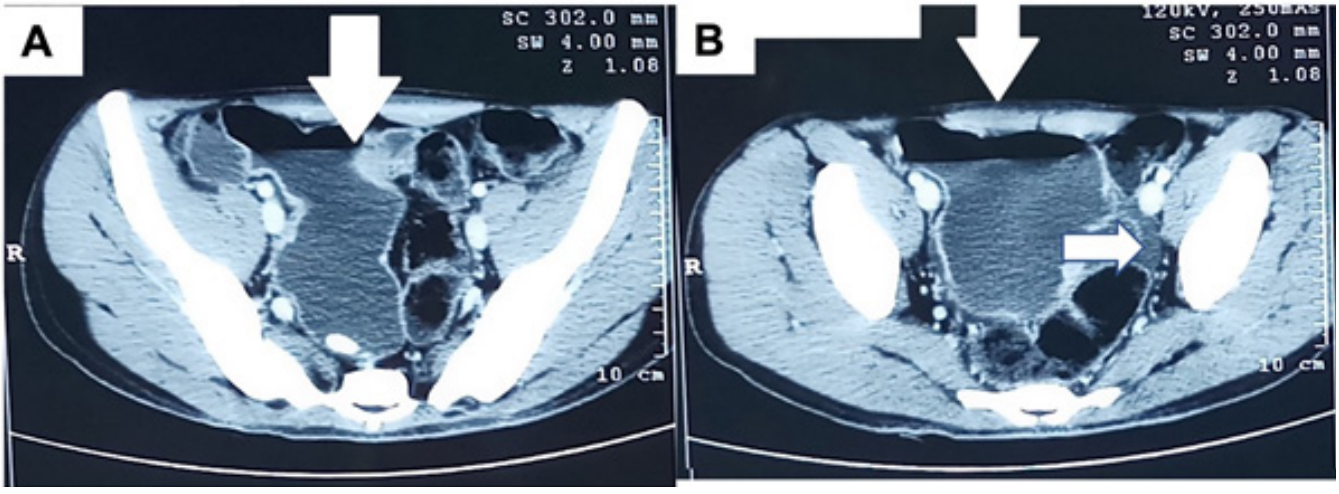

Figure 1 Contrast enhanced CT scan.A & B - showing dilated bowel loop in pelvis (vertical arrow), B- ascites (horizontal arrow).

Case summary

An eighteen years old boy presented with history of hematochezia 3.5years back. Volume was 200-300ml fresh blood/day, for 2-3days associated with postural hypotension. He required 4 units packed red blood cell (PRBC) transfusion. His upper gastrointestinal endoscopy was normal. Colonoscopy revealed mild erosive proctitis and grade-I internal haemorrhoids. Capsule endoscopy, after 11 hours of observation showed multiple ulcers and stricture at 1.20 hours and 9.05 hours from ingestion. Capsule was stuck at the initial stricture

site for few hours. CT enteroclysis showed a dilated small bowel loop in pelvis and multiple enlarged lymph-nodes in the mesentery (largest short axis diameter was 11mm) (Figure 1). There was minimal ascites. Mantoux test was positive. India being an endemic country for tuberculosis with more than one-third infected with Mycobacterium tuberculosis, he was started on ATT based on clinical suspicion. He fared well for 10months. He gained 5kilograms of body weight. Two months after completion of treatment, he developed progressive weakness and easy fatigability. No positive history of hematochezia or melena was present. He was pale with a body mass index of 17.3kg/m^2. Abdominal examination was unremarkable. Haemoglobin was 7.5g/dl. Fecal occult blood test was positive. Repeat upper and lower GI endoscopy were normal. Triple phase CT again showed a similar dilated small bowel loop in the pelvis (diameter 8.6cm) with air fluid levels and multiple sub-centimetric mesenteric lymph-nodes (figure 1). Suspecting tubercular stricture or intestinal duplication, he was planned for exploratory laparotomy. A dilated Meckel diverticulum of dimeter 10cm at the antimesenteric border of ileum 2 feet from ileo-cecal junction was found, resected using stapler and side-to-side hand sewn anastomosis was fashioned (Figure 2). Biopsy showed intestinal diverticulum with heterotropic gastric mucosa and lymph-nodes showed reactive hyperplasia. He has remained asymptomatic for more than two years of follow-up.

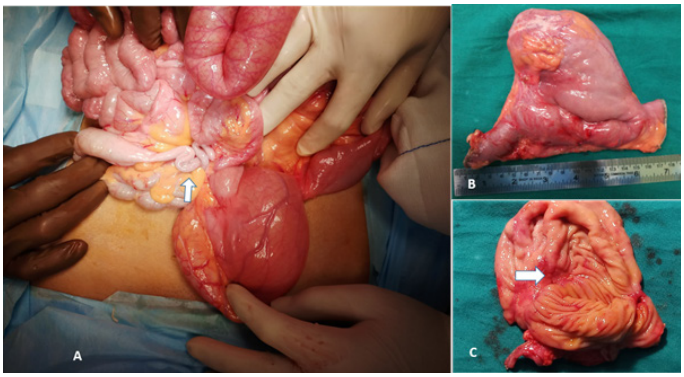

Figure 2 A- Intra-operative picture showing giant Meckel diverticulum, ileocecal junction and appendix. B- Gross specimen of Giant Meckel diverticulum. C- Ulcerated mucosa on cut section.

Discussion

Globally 10million people were affected by tuberculosis in the year 2019. Since the start of COVID-19 pandemic, global decline in reporting of new cases of Tuberculosis was observed in endemic countries like India, Indonesia, Philippines and South Africa.[6] Abdomen is the most common site for extra-pulmonary tuberculosis.[7] Clinical features vary with the site of involvement.[9,10] Our patient presented with lower GI bleeding which was observed in 16.9% patients of abdominal TB in a series published from India.[10] Imaging (sonography or CECT) features suggestive of TB include localised or generalised ascites, thickened omentum or peritoneum, thickened bowel loops or enlarged mesenteric lymphnodes.[11] CT scan is better than sonography and regarded as the investigation of choice. In the present report, patient had enlarged mesenteric lymph-nodes and dilated small bowel loops and tested positive for Mantoux test, which lead to the suspicion of intestinal tuberculosis. Mantoux test is a hypersensitivity test used for screening although is less specific for active infection in endemic countries. It plays a supportive role in diagnosis. The patient showed symptomatic improvement after initiation of ATT. He gained 5 kg of body weight and there was no recurrent GI bleeding for 1-year.

Meckel diverticulum affects 2% of general population. It may be asymptomatic or can present with bleeding, obstruction or perforation.[3] In the present report, the patient presented with recurrent lower GI bleeding which can be observed in 12% patients with MD.[4] Severity of complications depend on the size of MD and ≥5 cm diameter qualifies to be named as a giant Meckel diverticulum (GMD), which is rare.[13] Type of complication depends upon structure of GMD i.e, narrow base GMD- torsion, broad base GMD- intussusception, and foreign body impaction. Our patient had a broad based GMD of diameter ≥10 cm with an ulcer on the ante-mesenteric border and histopathology showed presence of ectopic gastric mucosa. He was relieved of his symptoms after segmental resection and is doing well with no further evidence of lower GI bleeding till 2 years of follow up.

Giant Meckel diverticulum is a rare entity and only case reports have been published in literature. On PubMed search, with keywords giant Meckel's diverticulum, fewer than 100 publications could be found. Majority of patients presented with torsion and obstruction (over 30 reports) and bleeding (< 5 reports) is a rare presentation of Giant Meckel diverticula. Our patient had a giant diverticula ≥10cm who presented with overt lower GI bleed. Temporary relief with ATT prevented the physician from performing a nuclear scan test. This report suggests that Meckel's diverticulum should be kept as a differential diagnosis in a young patient who presents with sub-acute intestinal obstruction or recurrent GI bleeding even in tuberculosis endemic countries.

Conclusion

Giant Meckel diverticulum is a rare entity and presentation with bleeding is even rarer. Initiating ATT without histological proof should be discouraged. Bleeding in young age patients should be evaluated for Meckel diverticulum even in TB prevalent regions.

Acknowledgments

None

Funding

None.

Conflicts of interest

Author declare there are no conflict of interest towards the article.

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Citation: Ghosh N, Malage S, Singh A, et al. Bleeding giant Meckel diverticulum, masquerading as abdominal tuberculosis. *Gastroenterol Hepatol Open Access.* 2023;14(1):23–25. DOI: 10.15406/ghoa.2023.14.00538