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Case Report

Inverted Meckel's Diverticulum: A Rare Cause of Chronic Anaemia

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1. Abstract

Meckel's diverticulum (MD) are vestigial remnants of the omphalomesenteric duct found in the ileum in 1-2% of people. Rarely, MD can become inverted into the lumen of the small bowel and be a cause of anemia, intussusception, and abdominal pain. The radiological appearance of an inverted MD is similar to that of a submucosal lipoma or pedunculated polyp. The non-specific clinical and imaging features of an inverted MD make definitive pre-operative diagnosis difficult, and as such, clinicians should be aware of the presentationand appearance of this interesting congenital anomaly.

2. Key words

Inverted meckel; S diverticulum; Intussusception; Gastrointestinal bleeding; Enterography

3. Case

A 47-year-old male was referred to our neuroendocrine tumor (NET) clinic because of an imaging finding consistent with a sub mucosal tumor of the small bowel. The patient was found to have iron deficiency anemia on routine blood tests by his family doctor earlier 4 years earlier. On further evaluation, he was found to be FIT positive, but upper, lower and capsule endoscopy were unable to demonstrate a cause of occult gastrointestinal blood loss [1]. A CT enterography at that time demonstrated a 5cm smooth and elongated sub mucosal lesion in the proximal ileum, of which the differential diagnosis included small bowel NET, pedunculated polyp and benign lipoma.

4. Introduction

Serum chromogranin A, urinary 5-HIAA, and an octreotide scan were all negative, effectively excluding a small bowel NET. A repeat of his cross-sectional imaging demonstrated that the lesion had increased in size from 5cm to 8cm parallel to the long axis of intestine, and was now associated with a small degree of non-obstructing intussusception (Figure 1). At this time it was felt that the lesion was acting as a lead point for the intussusception, and that mucosal ulceration in the region of the intussusception was possibly causing occult gastrointestinal bleeding. Therefore, a decision was made to perform a laparoscopic small bowel resection.

During laparoscopy, an intussuscepted segment of small bowel was identified in the proximal ileum approximately 90cm from the ileocolic valve (Figure 2). The intussusception was reduced, and a soft, non-obstructing mass was evident within the lumen of the intussuscepted bowel segment. The small bowel was exteriorized via a 5cm mini-laparotomy and the segment containing the mass lesion resected, and bowel continuity restored. The specimen was opened to reveal an inverted and ulcerated MD within the lumen of the small bowel (Figure 3). The MD measured approximately 6cm x 1.5cm, and had a large mucosal ulcer on its mid-portion as well as a smaller ulcer at the tip.

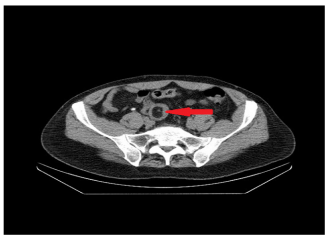

Figure 1: Coronal view of CT abdomen.
Description: An 8cm intra-luminal and fat-attenuation lesion is demonstrated within the proximal ileum.

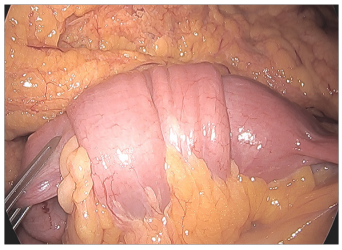

Figure 2: Laparoscopic image of the ileo-ileal intussusception Description: On running the small bowel, this ileo-ileal intussusception was discovered approximately 90cm from the ileocolic valve. A palpable mass was evident in bowel segment just to the left of the intussusception.

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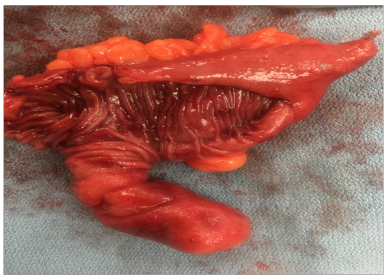

Figure 3: Segmental small bowel resection specimen, which has been opened along its anti-mesenteric border.
Description: The small bowel resection specimen was opened along its anti-mesenteric border to reveal a 6cm x 1.5cm inverted Meckel's diverticulum. Note the mucosal ulceration in its mid-portion, which was likely the cause of this patient's chronic anemia.

5. Discussion

The rarity and non-specific presentation of an inverted MD present a diagnostic challenge to clinicians. In 2012, Rashid and colleagues reported that only 59 cases had been described in the literature, and their review of these cases showed that the most common presenting symptoms were bleeding (81%) and anaemia (80%), and that abdominal CT scan was the most accurate imaging modality (mass seen in 100%). Only 23 of these cases also had active intussusception at the time of operation, further highlighting the uniqueness of this case [2].

Radio logically, an inverted MD may appear as an elongated intra-luminal mass with smooth margins and a central core of fat attenuation, and thus can be easily confused for a benign lipoma. Bowel intussusception may also be seen with the mass acting as a target lesion, though this finding is in no way specific for MD. Inverted MD are reported to account for only 4% of adult intussusceptions. Recently, a case report described the first successful pre-operative diagnosis of an inverted MD by double-balloon enteroscopy [3].

When an inverted MD is diagnosed, either pre-operatively or intra-operatively, segmental bowel resection should be performed in those fit for surgery. Laparoscopic reduction of ileal-ileal intussusception and resection of an inverted MD has been reported previously [3-5], though if a pre-operatively imaged intra-luminal lesion is unable to felt during laparoscopy, conversion to an open or hand-assisted operation is warranted.

In retrospect, there were several learning points from this case. First, the large size of this lesion was inconsistent with a primary small bowel NET tumour, which are typically small and often not detectable on cross sectional imaging. Second, the 'enlarging' nature of the lesion was not due to true growth but rather reflected the amount of diverticulum and bowel that was being intussuscepted. Third, intestinal bleeding in small bowel NET is rare, whereas it is the most common presenting symptoms with an inverted MD.

Increasing use of abdominal CT scans in modern medicine will likely increase the frequency with which clinicians encounter this interesting and curable condition. An inverted MD should be remembered as an important differential diagnosis for a sub mucosal lesion of the small bowel, particularly in the setting of bleeding and anaemia.

References

1. Hansen CC &Soreide K. Systematic review of the epidemiology, presentation, and management of Meckel's diverticulum in the 21st century. Medicine. 2018; 97(35): e12154.

2. Rashid OM, Ku JK, Nagahashi M, Yamada A, Takabe K. Inverted Meckel's diverticulum as a cause of occult lower gastrointestinal hemorrhage. World J Gastroenterol. 2012; 18(42): 6155 - 6159.

3. Takagaki K, Osawa S, Ito T, Iwaizumi M, Hamaya Y, Tsukui H. Sugimoto, K. Inverted Meckel's diverticulum preoperatively diagnosed using double-balloon enteroscopy. World J Gastroenterol. 2016; 22(17): 4416 - 4420.

4. El-Dhuwaib Y, O'Shea S, Ammori BJ. Laparoscopic reduction of an ileoileal intussusception and resection of an inverted Meckel's diverticulum in an adult. SurgEndosc. 2003; 17: 1157.

5. Karahasanoglu T, Memisoglu K, Korman U, Tunckale A, Curgunlu A, Karter Y. Adult intussusception due to inverted Meckel's diverticulum: laparoscopic approach. SurgLaparoscEndoscPercutan Tech. 2003; 13: 39 - 41.