Massive gastrointestinal bleeding due to Meckel’s diverticulum

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Abstract
Introduction
Meckel’s diverticulum is asymptomatic in a majority of cases. The common complications include intestinal obstruction, haemorrhage and inflammation. Painless bleeding as a complication of Meckel’s diverticulum is common in children and not in adults. We report a rare case of massive gastrointestinal bleeding in an adult due to Meckel’s diverticulum.

Case report
A 33-year-old male presented to us with history of haematochezia. There was no pain abdomen. Colonoscopy was done which showed fresh active bleeding proximal to ileocaecal junction. In view of his haemodynamic instability, an emergency laparotomy was done which confirmed a grossly distended blood filled Meckel’s diverticulum to be the source of bleeding.

Conclusion
Gastrointestinal bleeding from Meckel’s diverticulum is rare in adult patients. Symptomatic Meckel’s diverticulum should be surgically resected.

Introduction
Meckel’s diverticulum is the most common congenital anomaly of the small intestine¹-³. The majority of Meckel’s diverticulum were found during abdominal operations⁴. Meckel’s diverticulum is usually asymptomatic, with 2–4% of people developing complications during their lifetime⁵,⁶.

Complications due to Meckel’s diverticulum include intestinal obstruction, inflammation, haemorrhage, intussusception, hernia, torsion, umbilical sinus or fistula and neoplasm¹,⁷. Painless gastrointestinal bleeding is a common symptom of Meckel’s diverticulum in children, and it is relatively rare in adults²,⁷. The bleeding is almost always associated with peptic ulceration from the heterotropic gastric mucosa located within the diverticulum⁵. We hereby report a case of massive gastrointestinal haemorrhage in an adult, which was diagnosed during emergency laparotomy.

Case report
A 33-year-old male presented with history of bleeding per rectum for the last day. The bleeding was sudden in onset with five to six episodes; each episode had around 250–300 ml of blood loss. It was bright red in colour mixed with stools initially and later with clots. There was no history of haematemesis, fever or trauma.

On general examination, the patient was conscious and oriented. He had pallor with a pulse of 120/ min, respiratory rate of 20/min and blood pressure of 82/42 mmHg at admission.

His abdomen was soft with mild tenderness in the umbilical region. There was no mass abdomen. Per rectal examination and proctoscopy did not reveal any blood initially.

In view of haemodynamic instability, he was shifted to the ICU and was under investigations and resuscitation. Within a few hours, the patient passed about 200–250 ml of blood mixed with clots per rectally. He had to be intubated due to deteriorating general condition and was on noradrenaline support of 30 drops/min (8 mg/100 ml) as his systolic blood pressure had fallen to 50 mmHg.

An urgent colonoscopy was done to identify the cause of the bleeding as his Ryles tube drainage was clear. Colonoscopy revealed active gastrointestinal bleeding proximal to the ileocaecal junction with fresh blood and clots in the colon.

His haemoglobin was 6.1 g%, total count 7,300, platelets 132,000, prothrombin time 13.8, INR 1.1, APTT 23.4, serum electrolytes (sodium 131 mg%, potassium 2.6 mg% and chloride 105 mg%).

The patient was planned for an emergency exploratory laparotomy in view of his haemodynamic instability and unavailability of angiographic facility at night.

During surgery, it was found that there were adhesions between the transverse colon and sigmoid colon which were released. The entire jejunum was collapsed and distal ileum was distended with blood in it. There was Meckel’s diverticulum (Figure 1) which was thickened and filled with blood. It was around two and half feet from the ileocaecal junction. We confirmed that Meckel’s diverticulum was the source of the bleed. Resection of Meckel’s diverticulum and part of the ileum was done with end-to-end anastomosis. The patient recovered postoperatively. He was discharged on postoperative day 8 after removing the sutures. His histopathology revealed Meckel’s diverticulum with gastric and pancreatic tissue.

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The distended Meckel’s diverticulum that was the source of the bleeding.

Discussion
Meckel's diverticulum results from an incomplete closure of the omphalomesenteric duct and generally arises from the antimesentric border of the ileum. It is present in 2% of the population, is about 2 inches long and is found within 100 cm from the ileocecal valve. Meckel’s diverticulum was named after a German anatomist in 1809.

Meckel’s diverticulum is often overlooked as a possible cause of lower gastrointestinal haemorrhage in adults. Gastrointestinal haemorrhage accounts for around 1% of acute hospital admissions. Around 87–95% of all cases of gastrointestinal bleeding are from the colon, with the remaining cases arising from the small bowel. Massive bleeding is defined as any bleeding requiring three to five units of blood during 24 h.

Haemorrhage from a Meckel’s diverticulum is very rare in the adult age group. The haemorrhage can be slow and occult or massive and dramatic, manifesting in a bright red colour in the stool. Heterotopic mucosa is found in almost 100% of patients with gastrointestinal bleeding due to Meckel’s diverticulum. Meckel’s divertica are lined with heterotopic mucosa in up to 60% of cases with the following percentages: 62% with gastric mucosa, 6% pancreatic, 2% jejunal, 2% Brunner’s glands, 5% have both gastric and pancreatic and 2% have both gastric and duodenal. Tc-99m pertechnetate scanning is known to be the most useful diagnostic method for the diagnosis of Meckel’s diverticulum, with heterotopic gastric mucosa with diagnostic accuracy in more than 90% in children and 50–65% in adults. This, however, cannot be done in emergency situations. Surgical resection is the treatment of choice for symptomatic Meckel’s diverticulum.

Conclusion
Gastrointestinal bleeding from Meckel’s diverticulum is rare in adult patients. Most of the cases are detected during surgery. Symptomatic Meckel’s diverticulum should be surgically resected.

Consent
Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the editor-in-chief of this journal.

Abbreviations list
ICU, Intensive Care Units; IMR, Individual Medical Record; APTT, Activated partial thromboplastin time.

References