Ectopic gastric mucosa in “ectopic” Meckel’s diverticulum

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Received: 6 June 2011 / Accepted: 13 October 2011 / Published online: 28 October 2011
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A previously healthy 11-year-old boy presented with an acute onset of hematochezia, right abdominal pain and syncope. On admission, he was found to be hypotensive with a blood pressure of 90/60 mmHg, and tachycardic with a pulse rate of 100 beats/min. The hemoglobin level was 8.1 g/dL. The boy was promptly resuscitated responding with a blood pressure of 110/70 mmHg, and a pulse rate of 80 beats/min. The physical examination was otherwise unremarkable. The abdomen was soft with no guarding or rebound tenderness. The rectal examination was unremarkable apart from traces of fresh blood. The platelet count of $307 \times 10^9/L$ was normal, and he did not have a coagulopathy. Erect chest radiograph and abdominal radiograph studies were unremarkable with no evidence of pneumoperitoneum or other abnormality. An abdominal ultrasound scan was normal with no intussusception detected.

A Meckel’s scan was performed to evaluate for a Meckel’s diverticulum containing ectopic gastric mucosa. After intravenous administration of 155 MBq (4.19 mCi) of ^{99m}Tc pertechnetate, images of the abdomen were acquired with a dual-head gamma camera (ECAM, Siemens, Erlangen, Germany). The Meckel’s scan showed

an abnormal focus of tracer activity in the right upper abdomen that appeared early with gastric activity, indicative of ectopic gastric mucosa (Fig. 1, *arrow*). The abnormal tracer was persistent and unchanged in position over 60 min, distinguishing it from physiological bowel activity. Despite the unusual location, a Meckel’s diverticulum containing ectopic gastric mucosa was thought probable. The boy underwent a laparoscopy. Intraoperatively, a 4 cm long inflamed Meckel’s diverticulum was found arising from the ileum, approximately 15 cm from the ileocecal junction, and this was located “ectopically” in the right hypochondrium (Fig. 2, *arrow*). Dark bluish colored blood from a recent hemorrhage was seen through the bowel wall (Fig. 2, *arrowheads*). The Meckel’s diverticulum was resected, and histology confirmed that the diverticulum contained the gastric mucosa. The patient recovered swiftly after the surgery.

A Meckel’s diverticulum is the most common congenital abnormality of the gastrointestinal tract, and is found in 1–3% of the population [1]. It is a result of a failure of regression of the omphalomesenteric duct, and is frequently located within 100 cm proximal from the ileocecal valve, and hence, symptoms typically involved the lower abdomen [1]. It is most frequently asymptomatic, with symptoms being present in approximately 25% of the cases [2, 3]. The symptoms arise from the complications of a Meckel’s diverticulum, which include bleeding, intestinal obstruction, diverticulitis, vesicodiverticular fistula and tumor [2, 3]. Bleeding secondary to ectopic gastric mucosa is the most common complication of a Meckel’s diverticulum, and is most often seen in the pediatric population, particularly in patients younger than 2 years of age [3]. In adults, the most common complication of a Meckel’s diverticulum is intestinal obstruction, which may be secondary to intussusception, volvulus or internal herniation

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Fig. 1 The Meckel's scan showed a persistent focus of tracer activity in the right upper abdomen that appeared together with gastric activity, indicative of ectopic gastric mucosa (*arrow*)

Fig. 2 During laparoscopy, a 4 cm long inflamed Meckel's diverticulum was found arising from the ileum, approximately 15 cm from the ileocecal junction, in the right hypochondrium (*arrow*). Dark bluish colored blood was seen through the bowel wall (*arrowheads*)

[2, 3]. The other less common complications include diverticulitis, vesicodiverticular fistula and tumor [2, 3].

Ectopic gastric mucosa is present in approximately 20% of the cases of Meckel's diverticulum [3]. Although the ectopic gastric mucosa is most commonly seen in a Meckel's diverticulum, it may also rarely be found in a gastrointestinal

duplication. Gastrointestinal duplications are rare, and are seen in approximately one of every 4500 autopsies [4]. Ectopic gastric mucosa is seen in 20–30% of the patients with symptomatic gastrointestinal duplications [4]. A Meckel's scan is accurate at detecting the presence of ectopic gastric mucosa, and if a positive scan is present, a Meckel's diverticulum containing ectopic gastric mucosa is the most common cause, and should be the presumptive diagnosis regardless of the location [5]. This case demonstrates ectopic gastric mucosa in a Meckel's diverticulum that was in an “ectopic” location of the right upper abdomen, and highlights the need to entertain this diagnosis in young patients with lower gastrointestinal hemorrhage to avoid delay in the treatment.

Conflict of interest None.

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