

Lower Gastrointestinal Bleed Playing Hide and Seek

Abstract

A 13-year-old adolescent male presented with an episode of rectal bleed. He has had five such episodes in the past year where he witnessed black tarry stools mixed with fresh blood, painless, not associated with fever or hematemesis. Clinical examination revealed pallor and a soft, non-tender abdomen. Vitals were stable. Blood investigations revealed haemoglobin of 102g/L, WBC count of $10 \times 10^9/L$ and platelet count of $165 \times 10^9/L$. The clotting screen was normal. Upper GI endoscopy and colonoscopy revealed no abnormality. The patient underwent Tc-99m pertechnetate scintigraphy to look for Meckel's Diverticulum in view of painless lower GI bleed.

Keywords: ^{99m}Tc-pertechnetate scintigraphy, ectopic gastric mucosa, Meckel's diverticulum, melena, single-photon emission computed tomography

Persistent omphalomesenteric duct (Meckel's diverticulum) is the most common congenital anomaly of the gastrointestinal system.^[1] It is a true diverticulum and around half of the cases contain ectopic gastric mucosa.^[2] Patients with ectopic gastric mucosa who bleed sporadically, may have false-negative ^{99m}Tc-pertechnetate scintigraphy when performed during an active bleeding episode.^[3,4] Necrosis of Meckel's

diverticulum leads to the absence of or insufficient gastric mucosa to adequately concentrate the radioisotope. Furthermore, dilution of radioactivity in the small bowel due to hemorrhage, decreases the sensitivity of the study, thus hindering the diagnosis.^[5] The first study was performed when the patient was having episodes of melena [Figure 1a and b]. The repeat study was performed 8 weeks after the last episode of melena. We observe the small

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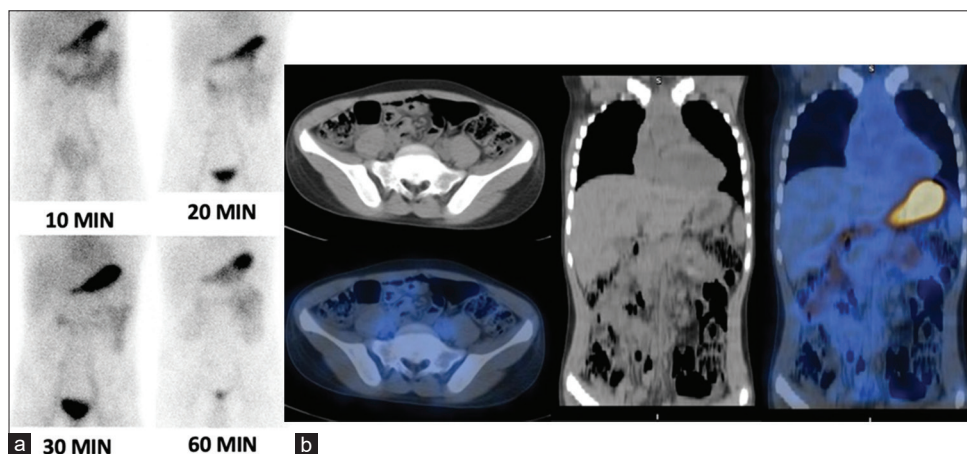


Figure 1: (a and b) After administering 270 MBq (7.3mCi) Tc-99m sodium pertechnetate intravenously, sequential images of the anterior abdomen were acquired for 60 min. The left upper quadrant activity accumulation was that of gastric mucosa in the stomach (thick arrow). However, no other focus on abnormal radiotracer accumulation was noted during the study. A corroborative SPECT/CT also confirmed the findings. Hence, the study showed no evidence of an ectopic functioning gastric mucosa. The patient was discharged on proton-pump inhibitors. After almost 1.5 months of this event, the patient again had a similar bleeding episode. Since a definitive diagnosis could not be reached previously, the patient was reinvestigated thoroughly again this time. A repeat of Meckel's scan was also performed. SPECT/CT: Single-photon emission computed tomography/computed tomography

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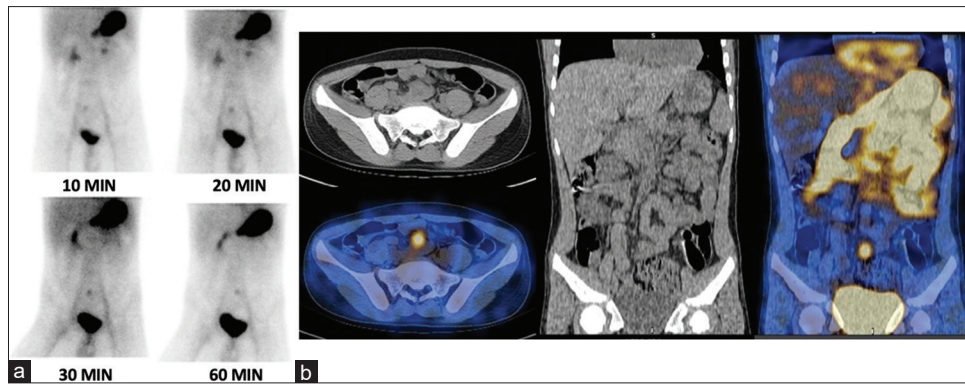


Figure 2: (a and b) A Tc-99m pertechnetate scan was performed again with similar acquisition protocol, and this time along with the stomach, a small focal area of increased radiotracer accumulation was noted in the hypogastric region in the midline (thin arrow), which corresponded to the region of distal ileum in the correlative transaxial and coronal SPECT-CT (notched arrow). This discrepancy in the findings of the radionuclide study is worth pondering. SPECT/CT: Single-photon emission computed tomography/computed tomography

focal uptake in the midline region between the stomach and the bladder in planar images. The corroborative single-photon emission computed tomography (CT)-CT localizes the focus of radiotracer accumulation to the distal ileum in the hypogastrium [Figure 2a and b]. The images throw light on the importance of patient preparation in a case of suspected ectopic gastric mucosa. The usual time a bleeding ulcer takes to heal is around 6–8 weeks on medical treatment.^[6] Thus, the authors also propose this timepoint (6–8 weeks after the last episode of melena) in cases of suspected Meckel's with recurrent lower gastrointestinal bleed. We understand that our hypothesis is based on this particular case only, but further studies with a larger number of patients are warranted to define a justified time after active bleeding to improve the study sensitivity.

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Conflicts of interest

There are no conflicts of interest.

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