

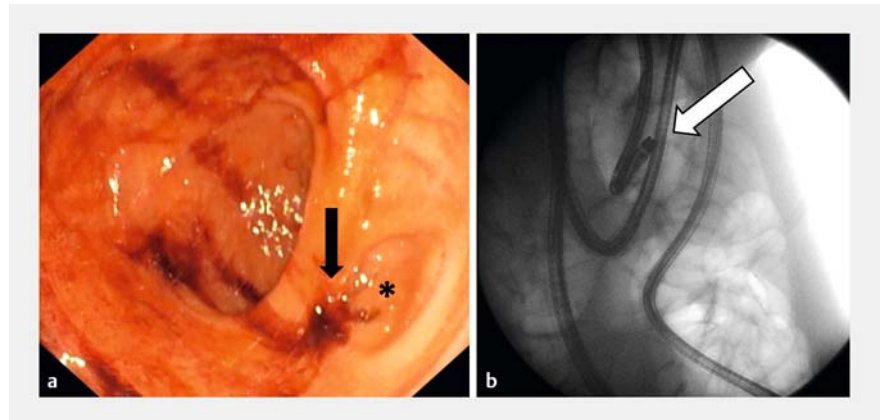
## On the trail of a ticking bomb: an unusual case of gastrointestinal bleeding in a young adult



A 21-year-old man presented to our hospital with profuse hematochezia. He reported having been admitted at another hospital 2 years earlier due to a hemoglobin (Hb)-relevant lower gastrointestinal bleed. At that time, the diagnostic workup (including a capsule endoscopy and a red blood cell scintigraphy) failed to reveal the cause of bleeding.

At current admission, gastroscopy showed no pathological findings and the initial Hb level was stable at 13.2 g/dL. The following night, the patient again developed hematochezia with concomitant tachycardia (130 bpm) while Hb levels rapidly dropped to 7.3 g/dL. An emergency colonoscopy, computed tomography (CT) angiography, and an oral single-balloon enteroscopy (SBE) failed to detect the origin of the hemorrhage. A second SBE was performed by anal approach and showed a diverticulum adjacent to a mucosal lesion located 100 cm proximal to the ileocecal valve with an eroded vessel (▶ **Fig. 1**). The application of a metal clip prevented further bleeding (▶ **Video 1**). Technetium-99 m scintigraphy (Meckel's scan) supported the diagnosis of a Meckel's diverticulum (▶ **Fig. 2**). The diagnosis was later confirmed in the surgical specimen (▶ **Fig. 3 a**). Histopathological examination found gastric mucosa inside the diverticulum and two ulcers at the marginal region (▶ **Fig. 3 b**).

Meckel's diverticulum occurs in 0.3%–2.9% of the population [1]. Bleeding is most often seen in children aged 2 years or younger and typically occurs because the acidic secretions produced by ectopic gastric mucosa within the diverticulum erode the adjacent intestinal mucosa [1]. Meckel's scan has high specificity but limited sensitivity for Meckel's diverticulum [2]. In addition, as exemplified by this case, Meckel's diverticulum may not be identified by CT angiography owing to intermittent bleeding and can be overlooked by capsule endoscopy.



▶ **Fig. 1** Enteroscopy image (left) showing a second lumen (\*) approximately 100 cm proximal to the ileocecal valve, at the position indicated by the arrow in the X-ray image (right). A visible vessel, representing the origin of bleeding, was located at the ostium of the diverticulum.



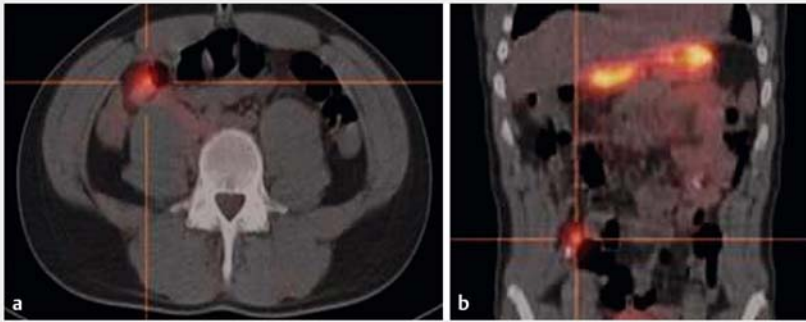
▶ **Video 1** Balloon enteroscopy identified a Meckel's diverticulum as the bleeding source in a case of acute gastrointestinal bleeding. Further bleeding was prevented by clip application.

In the current case, SBE not only allowed Meckel's diverticulum to be diagnosed but was also used to prevent bleeding recurrence by the application of metal clips, which also served to guide the subsequent surgical excision of the Meckel's diverticulum.

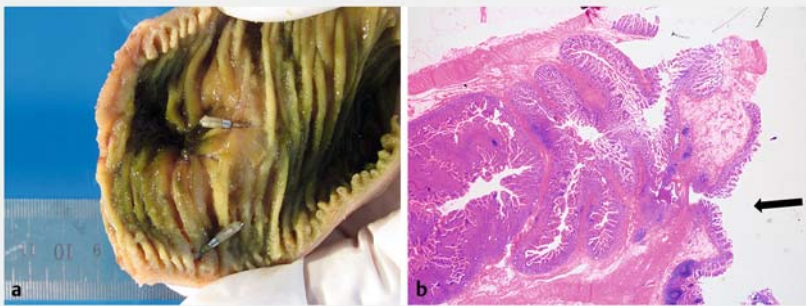
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### Competing interests

The authors declare that they have no conflict of interest.



► **Fig. 2** Meckel's scan confirmed an accumulation of  $^{99m}\text{Tc}$ -pertechnetate in the right lower abdomen projecting on the diverticulum.



► **Fig. 3** After laparoscopic removal. **a** Longitudinal section of the resected ileum segment, with clips evident. **b** Histopathological examination of the Meckel's diverticulum found gastric mucosa inside the diverticulum and an ulcer (arrow) at the marginal region.

### The authors

Sarah Klauss<sup>1\*</sup>, Mark op den Winkel<sup>1\*</sup>, Jörg Schirra<sup>1</sup>, Markus Rentsch<sup>2</sup>, Julia Mayerle<sup>1</sup>, Jens H. L. Neumann<sup>3</sup>, Enrico N. De Toni<sup>1</sup>

- 1 Department of Medicine II, University Hospital, LMU Munich, Munich, Germany
- 2 Department of Surgery, Klinikum Ingolstadt, Ingolstadt, Germany
- 3 Department of Pathology, University Hospital, LMU Munich, Munich, Germany

### Corresponding author

Enrico N. De Toni, MD

Department of Medicine II, University Hospital Munich, LMU Munich, Marchioninistr. 15, München, Bavaria 81377, Germany  
enrico.detoni@med.uni-muenchen.de

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\* These authors contributed equally to the manuscript.