Midileal Dieulafoy Lesion

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Abstract

Small bowel Dieulafoy lesion is a rare vascular abnormality (1% of all gastrointestinal Dieulafoy lesions) and is mostly located in the jejunum. Its clinical presentation is recurrent obscure-overt gastrointestinal bleeding severe enough to require hospitalization and blood transfusions. Till the beginning of the new millennium, small bowel Dieulafoy lesion was detected only by laparotomy; tremendous advances in the endoscopic field, with the advent of capsule endoscopy and device-assisted enteroscopy, now allow the identification of this lesion early in the diagnostic workup of obscure gastrointestinal bleeding. In this article, a short capsule endoscopy video of a well-documented midileal Dieulafoy lesion is reported. This article is part of an expert video encyclopedia.

Keywords

Capsule endoscopy; Dieulafoy lesion; Enteroscopy; Small bowel; Video.

Video Related to this Article

Video available to view or download at doi:10.1016/S2212-0971(13)70110-9

Materials

- PillCam SB2 (given imaging®, Yokneam, Israel).
- RAPID 5 software (given imaging®, Yokneam, Israel).

Background and Endoscopic Procedure

A 62-year-old man was referred from another hospital for intermittent obscure-overt gastrointestinal bleeding. Melena started 2 months earlier, and previous esophagogastroduodenoscopies, colonoscopy, and angiography were all unrevealing. Bleeding never resulted in shock or syncope; however, three units of packed red blood cells were required weekly to keep the hemoglobin level up to 110 g l⁻¹. Eight years before admission, the patient underwent an urgent right hemicolectomy for peritonitis due to right-sided diverticulitis. On the day of admission, he presented with melena; although he was hemodynamically stable, his hemoglobin level was 68 g l⁻¹. After blood transfusions, he underwent capsule endoscopy, disclosing fresh blood in the upper quartile of the small bowel; however, a subsequent push enteroscopy, allowed for 60 cm beyond the ligament of Treitz, was normal. On the third day of hospitalization, a second capsule revealed a tiny, round, red mucosal break located in the mid-small bowel (52% of the time elapsed from the pylorus). In consideration of (1) active bleeding, (2) distance of the lesion from mouth and anus, (3) uncertainty as to the best route of insertion of device-assisted enteroscopy, (4) the risk of poor enteroscope progression due to potential adhesions from previous surgery, and (5) the low surgical risk, it was decided to perform an intraoperative enteroscopy, which was done across a small enterotomy next to a visible clot. The only identified abnormality was a 3-mm area of denudated, bleeding mucosa, 5 cm above the enterotomy. A 15-cm ileal resection with side-to-side anastomosis was performed. The postoperative period was uneventful and the patient was discharged after 10 days. Dieulafoy lesion was histologically confirmed. At a follow-up visit, the patient was well, with hemoglobin levels within the normal range.

Comment

In up to 5% of overt gastrointestinal hemorrhages, the source of bleeding cannot be found by urgent upper and lower endoscopy and small bowel series. Capsule endoscopy has been recommended as a first-line diagnostic investigation in hemodynamically stable patients. In this patient, the first capsule endoscopy was misleading, yielding luminal blood in the upper small bowel quartile but no findings at the subsequent push enteroscopy; hence, the first lesson from this case is that, in the small bowel lumen, blood may move upstream from the bleeding point, and only if blood is seen on capsule endoscopy, the culprit lesion may be located at a distance. A second-look capsule eventually established the etiologic diagnosis, in agreement with the findings of Viazis, who showed the utility of this strategy after a first negative or inconclusive examination of patients with ongoing obscure-overt bleeding and a significant drop in hemoglobin levels. Dieulafoy lesion is an anomalous artery lying just under the epithelial layer of the gastrointestinal tract. Histologically, it is an enlarged, tortuous artery, without signs of atherosclerosis or vasculitis. Classically, the artery is 1–3 mm in diameter, far larger than those in the neighboring submucosa. Endoscopic diagnostic criteria for Dieulafoy lesion are: (1) active arterial spurting or micropulsatile streaming from a minute mucosal
defect or through normal surrounding mucosa, (2) visualization of a protruding vessel with or without active bleeding, and (3) fresh adherent clot with a narrow point of attachment to a minute mucosal defect or to normal appearing mucosa. However, direct translation of these criteria to the capsule endoscopy setting may be infeasible, due to the capsule’s inability to manipulate and observe the lesion in real time. To the author’s knowledge, no formal morphological criteria have been depicted for Dieulafoy lesion on capsule endoscopy; in this patient, Dieulafoy lesion appeared as a tiny, round, bullseye-shaped mucosal break with bleeding stigmata.

Very few ileal Dieulafoy lesions have been reported so far, and this is the first case diagnosed by capsule endoscopy with subsequent histological confirmation. It is conceivable that further cases will be reported in the next few years, along with the wider diffusion of device-assisted enteroscopy and capsule endoscopy.

Key Learning Points/Tips and Tricks

- When luminal blood is the only capsule finding, the source of bleeding can be very distant from the location where blood is encountered.
- In patients with obscure-overt gastrointestinal bleeding and continuous drop in hemoglobin level, a second-look capsule may be appropriate.
- During the video interpretation, the frame rate must not exceed 16–18 frames per second. Tiny but highly diagnostic images may be missed at higher frame rates.

Scripted Voiceover

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<td>00:00</td>
<td>In this video you can see the second capsule endoscopy performed on this patient with ongoing obscure overt gastrointestinal bleeding. A first capsule endoscopy, two days earlier, only showed fresh blood at the end of first quartile of the entire length of the small bowel recording, but a subsequent push enteroscopy, failed to identify any lesion.</td>
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References