

Is there a role for emergency small bowel capsule endoscopy in the investigation and management of severe obscure-overt gastrointestinal bleeding?

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Title: Yield and impact of emergency capsule enteroscopy in severe obscure-overt gastrointestinal bleeding

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Summary

The journal *Endoscopy* has recently published the findings of a retrospective study by Lecleire *et al* on the yield and impact of emergency small bowel capsule endoscopy (SBCE) in severe obscure-overt gastrointestinal bleeding (OOGIB) (defined as on-going hemorrhage with hemodynamic compromise and/or continued red cell transfusion requirements, after negative upper and lower gastrointestinal endoscopy) [1]. During a 7-year period (2003-2010), a cohort of 55 patients with severe OOGIB underwent SBCE within 48 h of negative bi-directional endoscopy. The authors from France found that emergency SBCE was able to identify the approximate location of bleeding in 49/55 patients (89%). The lesion-specific diagnostic yield was 67%, with culprit lesions identified in 37/55 patients. Subsequent therapeutic interventions as guided by SBCE findings were carried out in 42/55 patients (76%); these interventions included endotherapy in 30/55 (54%) and surgery in 12/55 (22%). Of the 53 patients who survived the index episode of severe OOGIB, only 6 patients (11%) experienced a further episode of OOGIB at a median follow-up period of 36 months (range 9-85 months). All of these 6 patients had multiple

small bowel (SB) angioectasias which had originally been treated by argon plasma coagulation (APC) at enteroscopy. Lecleire *et al* concluded that emergency SBCE appears to have a promising role to play in the acute management of patients with severe OOGIB and encourage prospective evaluation of this indication.

Opinion

The high diagnostic yield and minimally invasive nature of SBCE have rapidly established it as the investigation of choice (after bi-directional endoscopy) in patients with suspected mid-gut bleeding [2-6]. However, OOGIB can still pose a formidable challenge to clinicians and the urgency for effective diagnosis and appropriate management of the underlying etiology is greatest when patients present with severe hemorrhage. While there is evidence to show that the diagnostic yield of SBCE is increased if the investigation is performed during active bleeding or close to an event of OOGIB [7-10], the role of emergency SBCE in severe OOGIB is less clearly defined and current guidelines propose angiography as a potentially favored alternative in this scenario [2,5].

In their retrospective study, Lecleire *et al* demonstrated the feasibility of emergency SBCE in severe OOGIB and showed that its high diagnostic yield (67-89%) led to successful outcomes in the majority of patients [1]. These findings add to the small body of evidence that SBCE may have a place in the acute investigation and management of severe OOGIB [11,12] and confirm that timing of the procedure is paramount [8-10]. The case for emergency SBCE is also supported by the more recently published findings of Leung *et al* who performed a prospective randomized comparison of emergency SBCE vs. mesenteric angiography in patients with acute OOGIB [13]. In this Chinese study of 60 patients, the investigators found that emergency SBCE had a significantly higher diagnostic yield than angiography for this indication (53.3% vs. 20.0%

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Conflict of Interest: None

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respectively, $P=0.016$). At a mean follow up of 48.5 months, the cumulative risk of rebleeding was also lower for the SBCE group as compared to the angiography group (16.7% vs. 33.3%, respectively), albeit the study was not adequately powered to detect a significant difference for this secondary outcome measure ($P=0.10$).

These promising findings suggest that emergency SBCE does have a place in the investigation and management of selected patients with acute/severe OOGIB by providing clinicians with rapid, minimally invasive guidance to the next step of definitive care. The concomitant use of a real-time viewer may also enhance the rapidity of this acute diagnostic process [14].

However, the ultimate algorithm for these challenging cases in day-to-day clinical practice should be flexible and tailor-made to the patient's needs and locally available resources. All other alternative modalities such as dedicated cross-sectional imaging (e.g. CT enterography \pm CT angiography), urgent device assisted enteroscopy and also if need be, more invasive intervention, should be considered complimentary, since each of these may have a vital role to play in the investigation and management of individual cases of severe OOGIB.

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