Should the Capsule Endoscopy Be the First for Every Obscure GI Bleeding?

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Introduction

Obscure GI bleeding (OGIB) is gastrointestinal bleeding of unclear origin after negative upper endoscopy and colonoscopy. More than 80% of OGIB originates from the small bowel.1 It is classified as ‘overt’ with evident manifestations of bleeding such as hematochezia or melena, and as ‘occult’ with positive fecal occult blood testing or iron deficiency anemia caused by presumed GI blood loss.2 Capsule endoscopy (CE) or double balloon enteroscopy (DBE) could be used as the first procedure in the diagnostic work-up and management of OGIB patients. Which is better?

Capsule endoscopy

CE was the first method of small bowel endoscopy to be introduced3. CE has some limitations such as the absence of tissues biopsies, and difficulty with accurate localization of findings, and the risk of capsule retention, while it is non-invasive, safe, and possible to achieve complete small bowel examination.2

Some literatures exist regarding the clinical factors which have been identified to increase the diagnostic yield of CE. The presence of ongoing, overt active bleeding, more severe anemia, a greater decline in hemoglobin level, combined with increased blood transfusion requirements, a short interval from the bleeding episode, preferably within 2 weeks contribute to increased diagnostic yield of CE.4-10 These predictive factors imply to the need for a timely decision with a short interval from the bleeding episode, focusing on patients with more severe presentations.2

Double balloon enteroscopy

Compared with CE, DBE is more invasive, requires sedation, and can be laborious. It also takes time to learn DBE and has complications such as a small bowel perforation, ileus, and pancreatitis.11-13 However, the major advantage of DBE is to provide therapeutic interventions such as endoscopic homeostasis of bleeding, to obtain tissue biopsies for histological analysis and marking the location of relevant pathology with tattoo to direct subsequent surgery.14
As with CE, some factors to increase the diagnostic yield of DBE have been reported. Patients with the more frequent bleeding episodes (at least 2 or more), a longer duration of bleeding (>6 months), performance of DBE within 1 month of a bleeding episode are most likely to have a positive DBE results.\textsuperscript{15,16}

**CE and DBE for OGIB: which is better?**

1. **Studies comparing CE and DBE in OGIB**

   Comparative studies and meta-analysis comparing CE and DBE specifically in OGIB have been relatively small. There are no prospective, randomized, controlled trials comparing CE and DBE in OGIB. Arakawa et al. reported that the overall diagnostic yield between DBE (64%) and CE (54%) was not significantly different.\textsuperscript{17} A meta-analysis reveals that similar diagnostic yield for CE and DBE, 61.7% and 55.5%. In addition, the diagnostic yield of DBE after positive CE was 75%, while the diagnostic yield of the first DBE without CE was 27.5%.\textsuperscript{18}

2. **Current guidelines about OGIB**

   Despite similar diagnostic yields, diagnostic guidelines suggested by evidence-based data have reflected these fundamental differences between CE and DBE in OGIB.\textsuperscript{13,19,20} It is still preferable to begin the work-up of small bowel bleeding with CE rather than DBE in most circumstances of practice.\textsuperscript{2} This implies that the role of both procedures in OGIB has been generally accepted as “CE-guided DB, targeted DBE” in OGIB, which might induce researchers not to carry out OGIB RCT.\textsuperscript{1}

   However, it is unlikely that a single approach can or should be adopted, since the local availability of technology and expertise, combined with the clinical scenario, dictate a flexible strategy for managing these patients.\textsuperscript{2} Indeed, DBE for active overt OGIB should need because the likelihood of therapeutic intervention may be high.\textsuperscript{21} The feasibility of performing emergent DBE within 24 hours of presentation for active overt OGIB has been demonstrated.\textsuperscript{22}

3. **Negative CE in patients with OGIB**

   Another issue is the strategy of patients with negative CE. In case of negative and complete CE two different approaches are possible. (1) Watchful waiting; (2) planning of further examination such as second CE or DBE.\textsuperscript{23} In fact, the re-bleeding rate in patients with occult OGIB and negative CE is significantly lower than that observed in patients with positive CE (4-10% vs. 26-48%).\textsuperscript{24-26} However, several case reports reported small bowel lesions missed at CE and detected by alternative methods.\textsuperscript{27-29}

   At the present time, there are no clear-cut indications about the technique to be used and its appropriate timing. As far as repeating CE is concerned, a significantly increased diagnostic yield in patients with a drop of Hemoglobin of at least 4 g/dL or in those changing clinical presentation from occult to overt bleeding.\textsuperscript{30} Another option is to proceed indirectly with DBE instead of repeating a second CE. When DBE approach may pick up a bleeding source in 30% of OGIB patients after negative CE.\textsuperscript{18} Thus, patients with ongoing or recurrent overt bleeding, or occult bleeder who experience significantly declines in hemoglobin levels should certainly proceed with either repeat CE or with DBE after an initially negative CE.\textsuperscript{2}
Conclusions

Which is better to identify the cause of OGIB, CE or DBE? Because CE and DBE demonstrate equivalent diagnostic yields for the detection of OGIB, we consider the characteristics of both examinations, clinical factors such as the patient’s status and long-term outcomes, the local availability of technology and expertise. Therefore, CE and DBE still remain complementary methods that are essential to the management of OBIG and lead to improved outcomes.

References

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