Capsule reading is resources consuming. How can we make the best of it?

Obscure gastrointestinal bleeding (OGIB) is defined as a recurrent or persistent bleeding where gastroscopy and colonoscopy studies fail to identify an origin, and represents approximately 5% of all digestive bleeding (1). When symptoms include iron deficiency anemia or a positive fecal occult blood test OGIB is qualified as occult, whereas the term overt OGIB is used for presentations with melena or hematocelia (2).

The small bowel is most commonly (80%) the origin of OGIB (2) – for example, Meckel’s diverticulum, Crohn’s disease or tumors (1). However, a non-negligible percentage of patients may remain underdiagnosed during the initial endoscopy, potential causes may include overlooked gastric or colonic lesions (e.g., esophagitis, Cameron ulcers, portal hypertension-related gastropathy, and angiodyplasia) (3). Because of this, some authors suggest performing a second look gastroscopy (4) and colonoscopy before attempting any further etiologic studies (3). However, studies such as the one reported by Vlachogiannakos have shown that such repeats are not cost-effective (5), at least on a routine basis, and only recommend their performance when suspicion of a previously overlooked lesion is high, when the initial endoscopy was not carried out by an expert endoscopist or with the appropriate equipment, and when poor mucosal preparation impaired mucosal visualization (6).

Once a gastric and/or colonic origin has been ruled out, since 2001 we have capsule endoscopy and balloon enteroscopy available for the study of the small bowel. Both techniques have proven useful for OGIB, and obtained similar results, with a diagnostic accuracy of 59.4% (7) or 61.7% (8) vs. 55.5%, respectively, which is clearly superior to push enteroscopy (26%) (9) and other modalities such as barium follow-through (10) and enteroclysis (11), with even poorer results. Another technique still used by some centers is intraoperative enteroscopy, a highly invasive technique entailing high morbidity and even mortality (12).

Recently, ESGE has suggested a new diagnostic algorithm for OGIB where capsule enteroscopy is first-choice, and assisted enteroscopy (balloon, double balloon, other assisted methods) is considered first-line only when capsule endoscopy is contraindicated or unavailable (13), based on the procedure’s safety profile, low invasiveness, and ability to visualize the whole bowel (14).

However, we must bear in mind that capsule endoscopy uses up lots of resources, both economic and human. Particularly for overt OGIB, early capsule endoscopy and reading facilitates decision making at the expense of modifying schedules and routine task assignments at endoscopy units, which represents additional human costs.

In order to optimize the cost-benefit ratio the highest efficiency possible should be sought by prioritizing access to testing for patients with potentially greater benefits. To this end, the ability to predict which procedures will find lesions suggestive of an origin for OGIB would be desirable, hence the importance of studies with this aim as the one by Ribeiro et al. (15), published in the present issue of The Spanish Journal of Gastroenterology (Revista Española de Enfermedades Digestivas).

Prior papers on this topic are heterogeneous and obtain disparaging conclusions. The most widely studied variable is type of bleeding, and while most conclude that capsules achieve a better diagnostic yield in patients with overt OGIB as compared to occult OGIB (16-18), such association could not always be ascertained (19,20). It has also been shown that the shorter the time between bleeding and procedure, the higher the diagnostic yield (16,21,22), such that patients deriving the most benefit would be those with overt OGIB, particularly when active at the time of examination (in such cases diagnostic yield is above 90%), and that causal lesions are more difficult to find likely found as time goes on, particularly after a two-week threshold following active bleeding (23).

In addition to the above, other predictive factors have been described, including age, use of oral anticoagulation, liver comorbidity (18), male gender, hospitalization, number of previous endoscopic procedures, transfusion needs, and connective tissue disorders (23,24). However, other studies (20,25) find no differences in many of these variables, hence we are still lacking clear evidence on factors associated with positive findings.

In this issue Ribeiro et al. attempt to elucidate this question. Their work is notable for their use of a previously described classification to define positive findings (26), such that lesions hardly ever give rise to diagnostic doubt and results are therefore more readily reproducible. The authors found that overt OGIB active at the time of examination, transfusion requirements, and prior therapy with nonsteroidal anti-inflammatory drugs are independent predictive factors for positive findings with capsule endoscopy. The joint inclusion in one study of variables reported more frequently than in other studies increases the validity of their results.

It is important to assess that these results be in their proper context. First, it seems appropriate to differentiate between non-modifiable predictors (age, sex, comorbidity, etc.) and circumstantial predictors (transfusion needs, number of prior endoscopies). The role of the capsule in the diagnostic process of OGIB is somewhat dynamic, and will likely change in upcoming years with new
evidence. Therefore, patient circumstances at the time of the procedure will also vary. For example, as the authors point out in their discussion, the mean number of endoscopies performed prior to capsule endoscopy will likely be lower as the procedure may now be more readily accessible. Results will be more easily generalized to the extent predictor variables are based on stable, non-modifiable factors.

Secondly, this type of study is key for taking a further step in the search for higher efficiency, and identifying factors that may predict changes in the management of patients with OGIB. Neu et al. (10) demonstrated that while type and number of findings during capsule endoscopy are determinant of subsequent management, clinical factors such as lower hemoglobin levels or transfusion needs may similarly predict rebleeding risk or the likelihood of changes in patient management.

In 2009, Dr. Enrique Pérez-Cuadrado ended his editorial (27) on capsule performance in this journal by stating: “We should make the most of this significant resource, namely capsule endoscopy, and improve our routes in the diagnostic challenge posed by GI bleeding. Shall we know how to do it?” In our view, we are on the right track, as studies such as this one by Ribeiro et al. help us prioritize procedures by improving diagnostic routes.

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REFERENCES


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