Obscure gastrointestinal bleeding and “obscure” capsule. May we switch on any lights?

When engineer Gabriel Iddan reported in 2000 on his initial experience with a new capsule-looking endoscopic device a new era in in the study of digestive disease dawned (1). Light could be seen at the end of the tunnel and the small intestine, mainly unknown until then, became a significant origin for conditions previously deemed rare or even nonexistent in that part of the gastrointestinal tract.

Much has been published on the benefits of capsule endoscopy (CE) since then. From the very start, the primary indication of this technique was the study of gastrointestinal bleeding of obscure origin or obscure gastrointestinal bleeding (OGIB), whether occult or overt, and then additional indications gradually emerged. It is currently the first test of choice for patients with suspected Crohn’s disease and negative ileoscopy (2). Although to a lesser extent, the technique has also proven helpful for polyp surveillance, suspected small-bowel tumors, and the study of patients with suspected celiac disease. Its ability to detect mucosal details and villous changes in the small bowel has proven very useful for patients with suspected celiac disease, positive serology, and negative duodenal biopsies (3).

CE expertise in our country has gained international recognition with leading teams in this field of gastroenterology. A proof of this is the paper published in this issue of REED by Fernández-Urrien et al. (4). These authors review the status of CE-related complications based on the experience gathered by 12 national sites. Although retrospective, this collection provides a rather good map for complications and their true incidence, showing once again that CE is a safe, minimally invasive technique. This national compilation confirms that capsule retention is the primary complication of CE, with a very low rate since the Patency capsule® reached widespread use, which is solve by conservative management in 65% of cases.

CE soon became an effective tool in the pediatric age, where the invasiveness of conventional endoscopy always represented a real handicap. In this issue of our journal an interesting consensus paper is reported under the leadership of F. Argüelles where a group of national CE experts shed light on its use in this population (5). In contrast with the adult population, CE is most commonly indicated for the diagnosis of Crohn’s disease or the assessment of Crohn’s disease extension in this group. The consensus also shows the role of CE for celiac disease and other less common conditions involving the small bowel’s absorptive surface. While histological confirmation remains mandatory, CE behaves as a highly useful instrument when such a condition is suspected and endoscopy with biopsy taking is unfeasible or the patient rejects it.

Despite all the advances and the evolution of CE, its primary indication still is OGIB (6), which represents approximately 5% of GI bleedings. In this indication CE has demonstrated a high diagnostic capacity (55-92%) (7-10). However, we know bleeding cannot be equally attributed to the various lesions found by CE (11), and lesions unlikely to bleed or even no lesions are often our sole finding, which happens in up to 30% of studies (12). These are patients with bleeding evidence (overt or as anemia) where tests, including CE, provide no information regarding its origin. This remains a “black hole” in the study of OGIB. In this issue of the Spanish Journal of Gastroenterology (Revista Española de Enfermedades Digestivas), Ribeiro et al. (13) shed some light on this topic. In a series of 173 consecutive patients tested for OGIB they discuss the 2-year follow-up of cases where CE found no condition as a source of bleeding. Since re-bleeding odds are variable in these patients, different factors associated with a higher re-bleeding risk have been posited, but the evidence thus far reported remains controversial (14). These authors highlight that high transfusion requirements before CE and overt OGIB are factors clearly associated with re-bleeding in patients with OGIB and a negative CE study. This seems appropriate as it indirectly reflects the presence of an undeniable, persistent bleeding source. The questions to consider is – Why did CE fail to identify lesions in these patients? Which option should be selected?

There is no denying that CE is presently an instrument propelled by intestinal peristalsis that lacks movement control, which results in blind areas that on occasion may account for negative results. Also, not always does CE reach the cecum (11% in the series by Ribeiro et al.) even though current batteries provide greater autonomy as compared to early models, which allows longer recordings. Furthermore, while image quality has been considerably improved in later models, HD quality remains far removed from that of current endoscopes. All these factors may sometimes render CE blind to specific lesions. Should we then perform a repeat CE in patients with a negative initial study? How do we know that a repeat procedure will provide more information? Some papers on retrospective series show a high diagnostic yield (32%) for repeat CE (15). However, given that the risk for re-bleeding following a negative CE seems to be low, around 15% (12,16), in the group with a lower risk for re-bleeding conservative, wait-and-see management is recommended without further diagnostic testing.
Nonetheless, we still do not know what is really happening in these patients. Some cases may well be related to the ever increasing use of anticoagulants, anti-platelets, and NSAIDs. Maybe these and other associated factors are increasing OGIB and also preventing us from finding a bleeding source. In the series by Ribeiro et al., use of anti-clotting agents and NSAIDs may be identified in 35% of subjects, and their discontinuation –when possible– stopped bleeding for some. For the time being, all we may know is that patients with OGIB and a negative CE procedure have low re-bleeding rates. We should also learn to identify groups at lower risk, and ultimately we must reassure our patients, avoiding the unnecessary repetition of procedures and clinical follow-ups that will not yield additional information.

In the last few years new research is being undertaken to improve current CE systems. On the one hand, efforts are emerging that attempt to turn capsules into controlled devices (17-19) capable of biopsy taking and therapeutic delivery, fitted with improved software for automatic, rapid lesion identification (20); an accurate, reliable locating system to precisely locate encountered lesions, and enhanced image quality. On the other hand, technological developments in the field of enteroscopy will allow advancing into the small bowel in an effective, fully operational manner in the upcoming future (21).

Surely, all this will shed light on the obscurity of GI bleeding presumably originating in the small bowel, and will ultimately improve the diagnostic and therapeutic ability of gastroenterologists in this setting.

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REFERENCES