

Editorial – Video-capsule endoscopy: a test with no contraindications?

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There have been very few revolutionary developments in medicine during the last few years. Among them, one of the most significant novelty has been the possibility to perform a direct visualization of the small intestine through video-capsule endoscopy (VCE).

The utilization of this diagnostic device has produced as a whole more than 4500 manuscripts.

Initially, VCE has been used to localize the source of bleeding in patients with the so called "obscure bleeding" (i.e., a bleeding at the intestinal level, but with negative upper and lower endoscopy), which constitutes 5% of all the bleedings in the gastrointestinal apparatus. It is just with this indication that VCE has reached a significant diagnostic power, allowing the recognition and localization of vascular flat lesions (angiodysplasias, teleangectasias, submucosal angiomas).

During the first few years in which the technique was established, the literature produced a few manuscripts evaluating feasibility and diagnostic yield in comparison with both traditional and more recent radiological imaging modalities and with available endoscopic techniques (i.e., enteropush)¹. To this end, a fundamental role has been played by an Italian work demonstrating that the earlier the use of the VCE, the better the diagnostic power of the technique².

This hypothesis has been confirmed by subsequent studies and, during the last few years, also by the experience with device-assisted enteroscopy that shows the same diagnostic power when performed close to the bleeding episode³.

During the following years, most of the work has focused on the positive and negative predictive value of the VCE and on the outcome of patients with positive or negative capsule^{4,5}.

In parallel, VCE has found its use for the study of the small bowel in patients with Crohn's disease either known or suspected. Patients investigated with VCE are those with a strong clinical or laboratory suspect of the disease, but with unidentified lesions using both traditional endoscopic and radiological techniques, or in patients with known Crohn's disease, with symptoms (anemia, abdominal pain, etc.) that cannot be explained by the morphological findings. The indications to perform VCE in patients with known Crohn's disease should be cautiously evaluated because these patients are at the highest risk for capsule retention, a condition that is considered the only serious complication of the procedure⁶. An important role for the future development of the technique is related to the surveillance of these patients of the mucosal healing processes, which play an important role during and after the administration of the therapy with biologics^{7,8}.

The use of the patency capsule, an useful and use-friendly device, avoids the retention of the VCE in patients with inflammatory stricture and permits the selection of those to refer for surgical evaluation⁹.

Other indications in which the VCE has been used during these years comprise the evaluation and follow-up of polyposis syndromes, especially the familial adenomatous polyposis and the Peutz-Jeghers syndrome. The use of the VCE in the follow-up of these patients has raised some limitations, such as the difficulty to visualize lesions in the second part of the duodenum and to exactly count multiple lesions very close to each other (such as the polyps of Peutz-Jeghers). Probably in these patients who have a high probability of undergoing surgical procedure, it is more convenient to directly proceed with device-assisted enteroscopy.

Potential adverse events (AEs) of VCE have been widely discussed in literature: for instance, the possibility of interfering with electrical medical devices such as pace-makers and defibrillators. In reality, the literature has not shown any AEs for these patients. Indeed, it has been found that the transmission of

VCE is blocked with the use of the remote control for the pump for insulin infusion¹⁰.

Other possible AEs including the retention of the capsule in patients who underwent surgery for reconstruction of the intestinal integrity have not been really demonstrated, and it is most probable that VCE acts as the food that moves along the intestine, without any problem unless a stricture is present.

Finally, the most dangerous AEs, VCE retention upstream of a stricture, is also a false problem. If the capsule is retained above a cancer, it will be removed during surgery; if it is retained by a stricture due to Crohn's disease and the major component is inflammatory, steroid therapy decreasing the edematous component will theoretically permit its transit; if it is a fibrotic stricture it will be dilated by endoscopy, or ultimately, if it does not respond, the patient will be a candidate for elective surgery.

The only real question mark is linked to the use of VCE during the first three months of pregnancy. To this regard, in fact no data are available and will never become available because no Ethical Committee would approve this type of study.

After 20 years since its introduction, with all the above knowledge in mind, it is plausible to conclude that utilization of VCE is safe if current indications are respected and it has significantly contributed to the knowledge of pathologies of the small bowel and to their therapy, through the production of a florid and large amount of scientific literature.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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