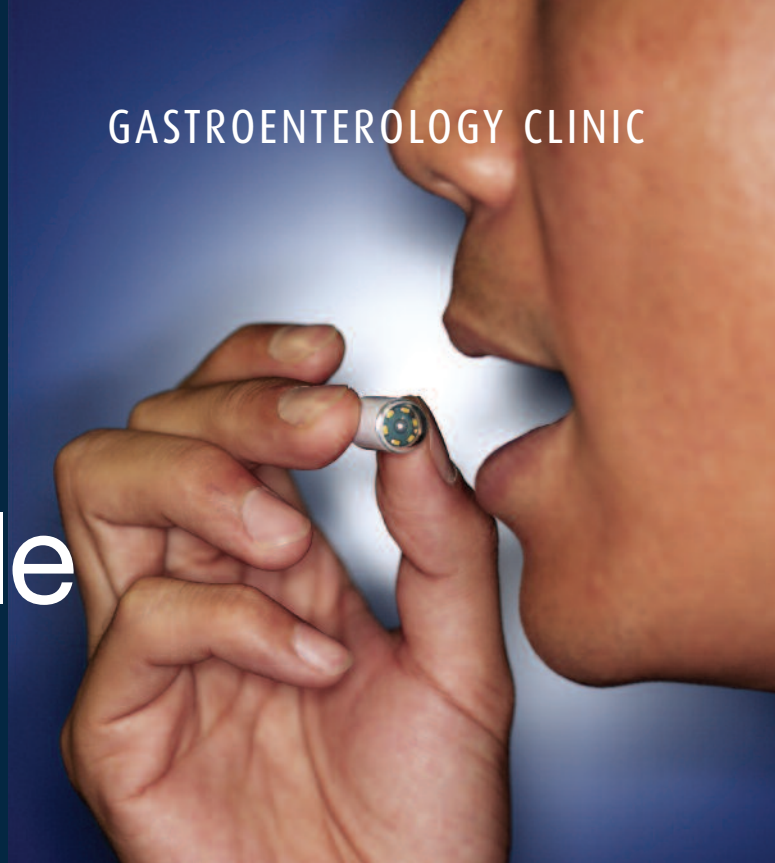


# Small bowel video capsule endoscopy

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**Video capsule endoscopy (VCE) is an important and useful tool in assessing the small intestine. Its main indication is in patients with recurrent and/or persistent bleeding in the small bowel for which no source has been found on gastroscopy and colonoscopy. VCE is the most sensitive and specific noninvasive test available for detecting mucosal changes in the small bowel.**

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## REMEMBER

Video capsule endoscopy (VCE) is a valuable tool in assessing the small intestine. The small bowel capsule has no role in visualising the colon. Oesophageal and colon capsules are available, but data do not support a central role for these technologies currently.

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The main indication for performing VCE is obscure gastrointestinal bleeding (OGIB), which is recurrent and/or persistent gastrointestinal bleeding for which no source has been found on gastroscopy and colonoscopy. A Medicare rebate is available for patients aged 10 years or older with OGIB that is either active or severe enough to cause anaemia. Iron deficiency without anaemia is not a rebated indication for VCE, and neither is iron-deficiency anaemia in patients with a plausible alternative explanation, such as menstruating females or patients with malabsorptive diseases such as coeliac disease. The Medicare Benefits Schedule prescribes that VCE has to be performed within six months of gastroscopy and colonoscopy, although no data exist to support this requirement. The only other rebated indication is for patients with Peutz-Jeghers Syndrome, which is characterised by multiple small bowel hamartomas.

The main risk of capsule endoscopy is capsule retention. This risk approximates to 1% in patients with OGIB, but can rise to 15% in patients with known small bowel Crohn's disease. Chronic use of NSAIDs is a relatively common cause of small bowel strictures (Figure 1). Although caution should be exercised when considering capsule endoscopy in patients with symptoms of subacute small bowel obstruction (SSBO), these symptoms are a valid and increasingly common indication for VCE if it is performed in close liaison with the surgeons to investigate and localise a lesion responsible for SSBO. Other contraindications to capsule endoscopy include swallowing disorders and oesophageal strictures. In these cases, it may be possible to place the capsule endoscopically into the duodenum. Capsule endoscopy has not been approved in pregnancy but is safe in patients with cardiac pacemakers.

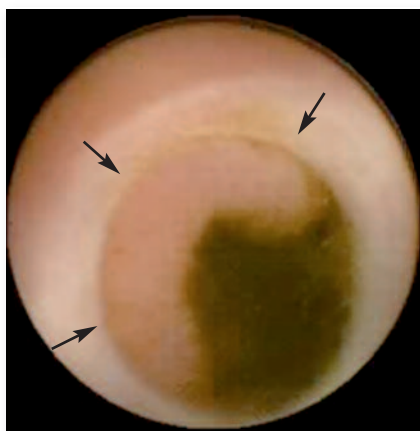


Figure 1. Typical appearance of a diaphragm-like, NSAID-induced small bowel stricture.



Figure 2. Angioectasia in the small bowel.



Figure 3. Video capsule endoscope.

## ASSESSMENT AND CLINICAL MANAGEMENT

VCE is the most sensitive and specific noninvasive test available for detecting mucosal changes (e.g. angioectasias, inflammation and ulcers) in the small bowel. The detection rates are comparable to examination of the entire small bowel with double-balloon enteroscopy, which is a more invasive and technically challenging procedure.<sup>1</sup> Capsule endoscopy is now established as the next investigative step following upper and lower gastrointestinal endoscopy for patients with OGIB. VCE can be expected to locate the likely cause of gastrointestinal bleeding in approximately 60% of these cases.<sup>2</sup> Of this group, angioectasias (Figure 2) are found in about 50%, with ulcers and neoplastic lesions constituting 27% and 9%, respectively, of the positive findings.<sup>2</sup>

A positive VCE finding can guide further management, such as adjusting medical therapies (e.g. iron supplementation alone or changing antiplatelet agents) or proceeding to an intervention (e.g. enteroscopy or surgery). A negative capsule finding has a high negative predictive value; the rate of rebleeding in patients with OGIB reporting a negative VCE is less than 6%.<sup>3</sup> Patients with recurrent bleeding after a negative capsule can be considered for a repeat of tests such

as endoscopy, colonoscopy and VCE, or for referral for enteroscopy. However, this decision will depend on the clinical scenario and might be best made by a gastroenterologist.

The role of capsule endoscopy in diagnosing inflammatory conditions of the small bowel is still in evolution. In comparative studies, VCE has been shown to be more sensitive for diagnosing early mucosal inflammatory disease than other investigations.<sup>4</sup> The procedure may be useful in patients with suggestive symptoms and laboratory results (such as in patients with anaemia or persistently raised inflammatory markers), but it is not indicated in patients with symptoms alone with no objective evidence of disease. The obvious disadvantages of VCE are that it is nontherapeutic and that histology cannot be obtained.

### Managing the patient

VCE can be performed in the hospital or practice setting. The patient should fast before the procedure, but special preparation is not usually needed; however, some specialists prefer to prescribe bowel cleansing. A prokinetic agent may be useful to reduce the risk of prolonged gastric retention of the capsule, especially in patients with diabetes and in the elderly. The capsule (Figure 3) is swallowed in the morning and the recorder is worn for about nine hours before the

patient returns to the unit where the recorder is then taken off. By this time, most capsules will have reached the colon (about 90%). An abdominal x-ray is required to confirm capsule transit in patients with an incomplete study. Once the capsule has reached the colon there is no risk of capsule retention. The capsule will be passed with the bowel motions – retrieval by the patient is not required.

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