

PRESS RELEASE

Small bowel enteroscopy: new study confirms superiority of gold-standard procedure

Prospective, randomised study proves double-balloon enteroscopy to be superior to newer single-balloon technique

(Barcelona, 26 October 2010) Until recently, visualising the majority of the small bowel using non-surgical endoscopic techniques was an impossibility. The introduction of balloon enteroscopy – which in optimal cases enables the entire small bowel to be visualised – was therefore regarded as a decisive breakthrough in this field. Double-balloon enteroscopy is now used universally in routine clinical practice for diagnostic and therapeutic small bowel examinations. However, as Professor Christian Ell of the clinical centre Wiesbaden, teaching hospital of the University of Mainz in Germany explained at a press conference at the 18th United European Gastroenterology Week (UEGW) in Barcelona, a simplified single-balloon enteroscope was recently introduced, prompting the initiation of the first randomised study comparing the two techniques.¹

“We have all become very comfortable using the double-balloon technique to undertake small bowel endoscopies, and, in an experienced endoscopist’s hands, visualisation of the entire small bowel can be achieved in a large proportion of patients,” he explained. “However, single-balloon enteroscopy is a simpler procedure and has already proved its value for colonoscopies. We wanted to evaluate whether similar results can be achieved with the single balloon method in the more complex situation of the small bowel.”

Push-and-pull enteroscopy: how it works

Push-and-pull enteroscopy is another term used to describe balloon enteroscopy. With the double-balloon technique, a high resolution video endoscope with a working length of around 2 metres is attached to a flexible overtube made of polyurethane. Latex balloons are attached at both the tip of the enteroscope and also on the overtube, and these can be inflated or deflated using a pressure-controlled pump. The principle of the double-balloon technique is based on alternating pushing and pulling manoeuvres that allow the small bowel to be threaded onto the overtube step by step.

With single-balloon enteroscopy, the balloon is attached to the tip of the overtube and, when the balloon is inflated, the overtube is anchored within the intestine allowing the endoscope to be advanced further. By withdrawing the overtube, the small intestine can be shortened and straightened to make it easier to advance the inner endoscope. The balloon may then be deflated so that the overtube can be inserted further and the endoscope advanced again.

How the comparative study was conducted

The study presented by Professor Ell in Barcelona involved 100 patients (50 per group) who were undergoing enteroscopy for a range of conditions including suspected mid-gastrointestinal bleeding, Crohn's disease, small bowel masses, chronic diarrhoea and/or abdominal pain. Patients were randomly assigned by a computer to undergo either double-balloon or single-balloon enteroscopies, which were performed by experienced investigators, each of whom had conducted at least 50 previous double-balloon procedures.

“The aim of this study was to compare the two techniques in terms of the rate of complete enteroscopies achieved – in other words, the numbers of patients in whom we were able to visualise the entire small bowel,” he explained. “This could be achieved using the oral route, the rectal route, or both.”

Double-balloon proves superior to single-balloon technique

According to Professor Ell, balloon enteroscopies were carried out successfully on all 100 patients, and no severe enteroscopy-related complications occurred. Preparation of the scope was significantly faster using the single-balloon technique and the procedure time with the oral approach significantly shorter with the newer technique.

“However, most importantly, complete enteroscopy was achieved with the double-balloon technique in 66% of patients compared with just 22% of patients who underwent single-balloon enteroscopy,” said Professor Ell. “This means that three times more patients had their small bowel fully visualised with the older technique than with the newer one.”

The rate of therapeutic consequences based on diagnostic yield for relevant findings and negative complete enteroscopy was also significantly higher in the double-balloon group (at 72%) compared with the single-balloon group (at 48%).

“Although individual studies have reported similar success rates to our study with the double- and single-balloon techniques, this is the first comparative trial to have been undertaken and it proves beyond doubt the clinical superiority of the older technique.”

Professor Ell believes that, despite the fact that the single-balloon technique was quicker to prepare for and to complete, the clear advantages observed in this study with the double-balloon technique should lead to this procedure remaining the gold-standard non-surgical approach to deep small bowel endoscopy.

REFERENCE

1. May A, Färber M, Aschmoneit I, et al. Prospective multicenter trial comparing push-and-pull enteroscopy with the single- and double-balloon techniques in patients with small-bowel disorders. Am J Gastroenterol 2010;105(3):575-81.

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