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SINGLE BALLOON ENTEROSCOPY (SBE)— EXTENDING YOUR VIEW INTO THE SMALL BOWEL

The high-resolution CCD chip of the Olympus single balloon endoscope delivers high quality images; the optimized distal-end and bending section permit smooth insertion into the acute turns of the small intestine.

Earlier this year Eric Goldberg, M.D., Associate Professor of Medicine and Director of Endoscopic Training and Research at the University of Maryland, treated a 55 year old male who was receiving blood transfusions every couple of weeks because of obscure gastrointestinal bleeding. A capsule endoscopy showed some blood and tissue in the ileum which appeared to be abnormal. Dr. Goldberg performed a retrograde enteroscopy using SBE System and discovered a 3 centimeter bleeding pedunculated polyp. Dr. Goldberg removed the polyp with a snare; on pathology, it was determined to be a fibroinflammatory polyp. “[The patient] went home two hours after the procedure and did not require surgery,” noted Dr. Goldberg.

With technological advancements, we are learning that there are many small bowel lesions requiring treatment. “However, there became a strong need to manage the pathology discovered by non-invasive techniques such as capsule or computed tomographic (CT) enterography,” said Dr. Goldberg. SBE is changing how physicians view the gastrointestinal tract and letting them explore new depths of the bowel. Balloon enteroscopes such as the Olympus single balloon endoscope, are offering physicians a way to identify and treat bleeding polyps, lesions, tumors, strictures and other lesions deep in the small bowel.

SBE Effective Per Clinical Trials

Numerous clinical trials of SBE have found it to be an effective option for accessing the entire small bowel via the oral or anal approach. The SIF-Q180 endoscope used during SBE is a



*The next evolution in enteroscopy:
Single Balloon Endoscope System from Olympus*

long, slender scope with a 200 centimeter working length, 9.2 millimeter outer diameter, and 2.8 millimeter working channel. SBE works with a latex-free overtube that has a balloon built into its distal end.

“The most difficult aspect of performing enteroscopy with a pediatric colonoscope or an endoscope without an overtube is achieving an adequate depth of insertion,” shared Andrew S. Brock M.D., Assistant Professor of Medicine, Division of Gastroenterology & Hepatology at the Medical University of South Carolina. Performing about 100 enteroscopies per year, Dr. Brock said that “[the] SBE eases these challenges by allowing for greater depth of insertion and thus reaching target lesions.”

“Traditional enteroscopy with a push endoscope can only visualize approximately 50 to 100 centimeters of jejunum. This represents less than 20% of the length of the small intestine,” explained Dr. Goldberg. In contrast, SBE “allows visualization of 70 to 100% of the small intestine much less invasively than other techniques such as

intra-operative enteroscopy. It has a low complication rate and very low mortality rate on the order of other endoscopic procedures such as colonoscopy.”

SBE Designed for Small Bowel Procedures

SBE is specifically designed for small bowel procedures. It has been found to be easy to use (35-60 minutes SBE compared to 95-100 minutes DBE), as well as effective for both antegrade and retrograde procedures.

“Without SBE I would not be able to reach nearly as many lesions in the small bowel,” noted Dr. Brock. “...many patients who bleed from angioectasia, for example, have lesions out of reach of upper endoscopy or push enteroscopy. This is similarly the case for patients with polyposis syndromes such as Peutz-Jegher, small bowel tumors and other lesions. Certain indications, such as the placement of a PEG tube into the excluded stomach of a patient who has had a gastric bypass, or an ERCP in such a patient, would be impossible in the vast majority of patients without deep enteroscopy.”

A challenging case further reinforced the value of SBE for Dr. Brock. “I once saw a patient who had a retained capsule endoscope due to a radiation stricture in her proximal ileum that was causing obstructive symptoms. She was a poor surgical candidate due to the lack of good targets to anastomose bowel to given her dense radiation changes. By using SBE, I was able to reach this very deep area and safely remove the capsule to avoid what would have been a major operation.”

SBE Offers Reduced Complexity
Leveraging the Olympus EVIS EXERA III universal platform, SBE consists of the SIF-Q180 series endoscope, Olympus Balloon Control Unit, and a single-use overtube. Studies demonstrate that it can be used effectively by a single operator.

“Pre-exam set up is easy, especially compared to double balloon enteroscopy. All that is required for SBE is lubricating the overtube with water,” commented Dr. Goldberg. “Essentially, minimal set up time.”

“There was a learning curve of about five cases for antegrade enteroscopy and ten cases for retrograde enteroscopy. For physicians who are familiar with push enteroscopy, it was not difficult to learn. I had to mentally visualize what the balloon on the overtube was doing during the various parts of the procedure. Once this is understood, performing the procedure is simple,” said Dr. Goldberg.

CYCLE STEPS IN THE SMALL BOWEL

STIR – An acronym to remember the cycle of steps in the small bowel

- S** Advance the Scope through the small bowel while holding the overtube steady (with the balloon inflated)
- T** Deflate the balloon and advance the Tube while holding the scope steady
- I** Inflate the balloon after suctioning out excess air
- R** Retract (or Reduce) the scope and overtube together in order to pleat the small bowel

SBE Provides Far-Reaching Practice Benefits

With the continued debate about health care finances, SBE offers a much-needed, cost effective clinical alternative for the GI field. In a recent issue of the World Journal of Gastrointestinal Endoscopy (2012 Feb 16;4(2):28-32), Manno, et al. conclude that “reports on the use of single-balloon enteroscopy have suggested a high diagnostic yield and similar therapeutic potential to that of the double-balloon endoscope.” This group of investigators also noted that “SBE is a viable technique for in the management of small bowel disease. Technically, it is easy to perform, may be efficient, and in the literature data available, seems to provide high diagnostic and therapeutic yield.”

Business-wise, the SBE capability lets hospitals expand the scope of clinical procedures offered to patients. This specialized technique also offers the ability for clinical facilities to build a reputation as a specialized referral center for the regional GI population.

The Olympus Single-Balloon Enteroscopy (SBE) System is compatible with existing Olympus equipment. Capable of examining the entire small bowel, studies demonstrate that SBE offers a high diagnostic yield coupled with a lower complication rate. In addition, clinical experience has found that this intuitive and easy-to-learn technique translates to quick setup time, short procedure durations, and increased diagnostic and treatment capabilities. ◆