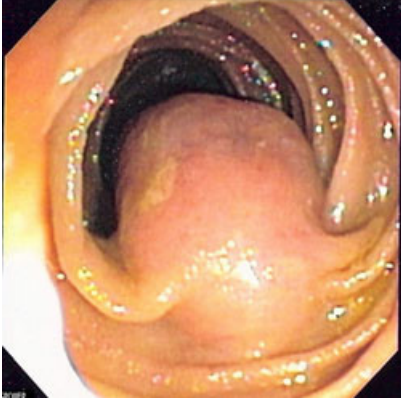


# New imaging technology improves diagnosis of small bowel disease

Mayo Clinic study examines capsule endoscopy and other promising modalities.



Endoscopy image of small bowel gastrointestinal stromal tumour, consent for public domain made by patient. (Image: Sanir, via Wikimedia Commons)

Patients with disorders of the small bowel, such as gastrointestinal bleeding, tumours, Crohn's disease and Celiac disease, are now benefiting from significant technological advancements that help physicians better diagnose and treat such conditions. Such are the findings by Mayo Clinic in Arizona that examined the latest diagnostic modalities, such as capsule endoscopy, single and double-balloon enteroscopy and spiral-assisted enteroscopy. These devices have made it much easier to visualise and inspect the small bowel.

"In many cases, such technology has eliminated the need for invasive surgical procedures," said Jonathan Leighton, M.D., Chair of the Division of Gastroenterology at Mayo Clinic in Arizona, and author of an article that was published in the *American Journal of Gastroenterology*. "The physical limitations of the previous technology to aid gastroenterologists in examining the small bowel for evidence of bleeding, tumours, inflammatory bowel disease and celiac disease have all but disappeared with the advent of these new diagnostic techniques," he added.

Enteroscopy, visualisation of the small bowel using a fibre-optic or wireless scope, has advanced to the point where a more thorough and complete evaluation of the small bowel is now possible, "replacing the need for intraoperative evaluation," explained Dr. Leighton.

## Visual examination

Balloon-assisted enteroscopy is a visual exam of the small bowel using a scope. The balloon allows the instrument to pass further into the small bowel than previously possible.

Capsule endoscopy is a procedure that utilises a tiny wireless camera to take pictures of the digestive system. The camera is encased in a vitamin-sized capsule that is swallowed by the patient, and hundreds of photos within the digestive tract are transmitted to a recorder for evaluation. The procedure heightens the physician's ability to identify bleeding lesions and then help direct further therapeutic intervention.

## Limitations of older diagnostic tests have largely been overcome

The detection of lesions in the small bowel that cause obscure gastrointestinal bleeding is potentially enhanced by both balloon-assisted enteroscopy and capsule endoscopy, according to study findings. Capsule endoscopy also appears useful

in the diagnosis and treatment of patients with small bowel Crohn's disease.

Obscure gastrointestinal bleeding, or recurring unexplained bleeding from the small bowel, can lead to anaemia. Now, because of advances in balloon-assisted enteroscopy and capsule endoscopy, the limitations of older diagnostic tests have largely been overcome. Crohn's disease is an inflammatory bowel disease that is often found in the small intestine, but can develop anywhere in the digestive tract.

Tumours and polyps in the small bowel, traditionally difficult to diagnose because of limitations in observing them via traditional diagnostic methods, also appear to be detected earlier by capsule endoscopy, and this modality may prove to be the diagnostic procedure of choice in many situations, according to the study findings. Capsule endoscopy may also be effective in evaluation of some patients with celiac disease.

## **Growing evidence**

"There is growing evidence that the technological advances inherent in capsule endoscopy and balloon-assisted enteroscopy are leading to a major paradigm shift in the evaluation and management of these diseases," says Dr. Leighton.

Significant research is being done to improve capsule technology, including the development of remote control capsules. The field of small bowel enteroscopy continues to evolve, he notes, adding, "While larger studies are needed to determine the impact on clinical outcomes, the future holds promise for patients."

Source: Mayo clinic

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