Video capsule endoscopy safe, effective alternative for diagnosing GI bleeding during COVID-19

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The COVID-19 pandemic has changed many things about how health care is delivered. Indeed, it has produced many innovations that show

significant promise.

Gastroenterology researchers at UMass Medical School have found that using video capsule endoscopy as a first procedure for the detection of the source of acute gastrointestinal bleeding could be a safe and effective alternative to the traditional method. It also reduces the risk of exposure of staff to aerosols generated by endoscopes, conserves personal protective equipment, reduces the number of staff typically involved and reduces the number of invasive procedures. The project has been expanded in a collaboration with investigators at Louisiana State University.

David R. Cave, MD, Ph.D., professor of medicine and director of clinical gastroenterology research, and his colleagues were invited to present, virtually, a paper at the Presidential Plenary session of the American College of Gastroenterology meeting in October 2020, comparing video capsule endoscopy used during the months immediately following the COVID-19 lockdown (March through May 2020) with the standard of care used in January 2020.

The research builds on a previous clinical trial at UMMS and one in Hong Kong that have shown higher detection rates of active bleeding with video capsule endoscopy when used as the first procedure, compared with standard of care. Standard of care typically starts with upper endoscopy, and if unrevealing, proceeds to colonoscopy, followed by other investigations, if needed.

Dr. Cave explained that doctors have known for decades that bleeding that produces melena, which is blood converted by acid or protein from bright red to black material, can occur anywhere from the nose down through the gastrointestinal tract to the right colon. However, the presumption has been that bleeding is most often coming from the upper gastrointestinal tract and can be reached by endoscopy.

"The video capsule is a better technology for finding out where the bleeding is coming from as it is able to not only image the esophagus, stomach and duodenum but the rest of the small intestine and right colon with one test," said Cave. "It is truly minimally invasive and requires no anesthesia."

Fifty patients were evaluated first with video capsule endoscopy during the COVID period and 57 were evaluated first using upper endoscopy, colonoscopy or video capsule endoscopy in the pre-COVID period. Both groups had similar baseline characteristics.

Researchers reported the location of bleeding could be identified on the first test in 76 percent of the COVID cohort patients, as compared with 63 percent of the historical controls, a statistically significant difference. Only 44 percent of the initial video capsule endoscopy patients underwent additional invasive diagnostic or therapeutic maneuvers, versus 96 percent of pre-COVID patients, and the majority were spared more invasive testing, according to the report. Only 26 percent of the video capsule endoscopy patients, compared with 82 percent of the historical controls, underwent upper endoscopy for evaluation of gastrointestinal bleeding.

There was no significant difference in transfusion requirements, degree of hemoglobin drop, in-hospital mortality, re-admission or rebleeding rates between the two groups.

"For the first time we have used video capsule endoscopy as the initial test for bleeding of all sorts," Cave said. "By using the capsule first, we were able to reduce the number of procedures by more than half. It's a really big paradigm shift."

Despite the improved diagnostic results and reduced risk of COVID-19 transmission using video capsule endoscopy as the first test for

gastrointestinal bleeding, Cave said that the standard of care among clinicians has not yet followed suit. He noted it takes a long time to change a system that has been in place for 50 years.

"We have to keep working at this approach and continue to demonstrate in different ways how much better this approach is," he said. There is a real opportunity to reduce unnecessary procedures, get more accurate information as to where the actual bleeding site is and treat appropriately, reduce length of stay, cut costs and improve patient care.

The concept is now being expanded with enrollment of patients in a randomized clinical trial, supported by the device manufacturer Olympus Corp.

Provided by University of Massachusetts Medical School

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