

VIDEO CAPSULE ENDOSCOPY: A NOVEL TECHNIQUE OF EXAMINING THE SMALL BOWEL

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The human digestive tract is over 26 feet long. It starts at the mouth and leads successively to the esophagus (food pipe), stomach, small bowel and large bowel (colon), ending at the anus. The small bowel (SB) is the longest part of the digestive system and measures about 22 feet. The SB is where the food is digested and absorbed into the body. It can be affected by a number of diseases which include ulcers, Crohn's disease, sprue, polyps, abnormal blood vessels and strictures. The symptoms these conditions might cause include abdominal pain, weight loss, anemia, gastro-intestinal bleeding and bowel obstruction, among others.

The most accurate method of assessing the digestive tract is by the technique of endoscopy wherein endoscopes are utilized to directly visualize the affected areas. Upper endoscopy (esophago-gastro-duodenoscopy or EGD) is used to examine the esophagus, stomach and the first several inches of the SB (duodenum). Lower endoscopy (colonoscopy) examines the colon and last few inches of the SB. Therefore, the vast majority of the small bowel is not reachable for direct visualization by the usual methods of endoscopy. X-ray methods (radiography) have been the primary technique of SB examination but are generally not very accurate. Hence, a new technique called a Video Capsule Endoscopy (VCE) was devised to enable the physician to look into the entire length of the SB.

The essential part of the VCE equipment is the capsule itself. The capsule has a light source, camera and a transmitting device built into it. The bowel contractions carry the capsule through the small bowel, as the capsule takes pictures at a speed of 2 frames per second and transmits them to an external device (data recorder) worn on the waist. The images are later transferred into computer software and are studied by the physician. Each capsule is for one-time use and is eliminated by the patient naturally.

Once the physician decides that the patient is a proper candidate for VCE, the patient fasts overnight and comes to the office the morning of the test. The localizing sensors are placed on the abdomen and the belt with the data recorder and battery pack is placed around the waist. The capsule is then swallowed with a glass of water. The patient can leave the office after this and resume his or her usual activity. The patient is allowed to have food 4 hours after the capsule is ingested. Patients can use cell phones, computers, radio and stereo equipment. The patient returns to the test site 8 hours later for removal of the external devices.

In conclusion, VCE is a safe, convenient and relatively non-invasive out-patient procedure with high diagnostic yield. It is currently available in Citrus County. Patients with suspected small bowel disease should strongly consider having the procedure performed if their physicians recommend the test.

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