

PILLCAM™ CAPSULE ENDOSCOPY

Peter Schiffman

URI

ELE382-Biomedical Seminar II

09-25-2006

Gastrointestinal Endoscopy is a minimally invasive diagnostic medical procedure used to evaluate the interior surfaces of the GI tract by inserting a small scope in the body. Usually the patient is unconscious for the procedure which requires powerful drugs. There is an upper and lower GI endoscopy procedure available. For the upper GI procedure a scope is inserted through the mouth and fed through the esophagus. For the lower GI endoscopy the patient is asked to lie on their left side and the scope is inserted rectally. Traditionally, scoping with a probe has been the only way to view the entire GI tract. Thanks to Given Imaging and their research, a newer non-invasive method is available for patients needing a gastrointestinal endoscopic procedure.

The PillCam™ Capsule Endoscope is a naturally ingested device for use in the gastrointestinal tract. Natural peristalsis moves the PillCam™ Capsule smoothly and painlessly throughout the gastrointestinal tract, transmitting color video images as it passes. The camera takes two pictures every second for eight hours, transmitting images to a data recorder about the size of a portable CD player that patients wear around the waist. The procedure is ambulatory, allowing patients to continue daily activities throughout the endoscopic examination.

Capsule endoscopy assists in diagnosing gastrointestinal conditions such as obscure gastrointestinal bleeding, malabsorption, chronic abdominal pain, and chronic diarrhea.

Once swallowed the camera moves naturally through the digestive tract while patients carry out their normal activities. Approximately eight hours after ingesting the camera, patients return the recording device to their doctor or nurse so the images can be downloaded to a computer and evaluated. The Capsule endoscope is disposable and

will be excreted naturally in your bowel movement. In the rare case that it will not be excreted naturally, it will need to be removed endoscopically or surgically.

The procedure is as follows: The day before the procedure; Normal breakfast and lunchtime meal then clear fluids until 10.00pm, nothing by mouth from 10.00pm until the start of the test. The day of the test; arrive in the unit between 8.00am and 8.30am, admission and placement of sensor array and data recorder, capsule swallowed with small amount of water, 2 hours after ingestion of capsule clear fluids can be started, A light snack may then be eaten approximately 4 hours after swallowing the capsule, 8 hours after the swallowing the capsule a normal diet may be resumed.

The system received clearance from the FDA in August 2001 as an adjunctive tool for visualizing abnormalities of the small intestine. On October 26, 2004, Given Imaging was granted approval for its new system for imaging the esophagus which has a camera on either side of the capsule and takes 14 images per second. The cost for the CE includes the \$450 single-use imaging capsule, plus clinical staff time for patient education, image processing, and image review. Reimbursement for the procedure is being established by insurance carriers. The Centers for Medicare and Medicaid Services has assigned a temporary code for CE. The Medicare national average physician payment is \$722. This payment includes the professional interpretation and the cost of the supplies related to the procedure. The total procedure cost to the patient before insurance reimbursements is averagely \$1400.

Sources: www.givenimaging.com,
http://www.emedicinehealth.com/gastrointestinal_endoscopy/,
www.wolfsonendoscopy.org.uk,
www.umdj.edu/idsweb/tech_reviews/Laura_Matarese/