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San Jose Gastroenterology

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San Jose Gastroenterology Newsletter is a professional letter focusing on the topics that physicians encounter in daily practice. This letter is printed periodically by San Jose Gastroenterology. The sources of this letter were adapted from Gastroenterology Journals for informational purposes and for communication with our colleagues. We will provide references for our sources if requested.

To sign up for email of GI Focus or to provide comments, support or requests, please email us at GIfocus@sjgi.com



It is our great pleasure to introduce Dr. Eduardo da Silveira as a new associate of San Jose Gastroenterology starting on March 2nd, 2009. A Brazilian native, Dr. da Silveira is fluent in Portuguese, Spanish and French. Dr. da Silveira is Board Certified in Gastroenterology and Internal Medicine. His areas of expertise include diseases of the gallbladder, biliary and pancreatic systems, Barrett's esophagus, and advanced diagnostic and therapeutic GI procedures (ERCP, EUS and Endoscopic Mucosal Resection)

Endoscopic Ultrasound (EUS)

EUS is a technology that combines endoscopy with ultrasound (US). The ultrasound transducer is positioned at the tip of the endoscope. This allows gastrointestinal (GI) intraluminal US imaging. Because the US transducer is within the GI lumen, high quality images of the GI luminal wall and structures adjacent to the GI tract can be obtained. EUS is also used to guide a needle into these structures and obtain fine needle aspiration (FNA) in real time¹.

These structures include:

- The luminal wall of the esophagus, stomach, duodenum, rectum
- Posterior mediastinal lymph nodes and masses
- Lung masses adjacent to the esophagus
- Middle and left portions of the liver
- Left adrenal gland
- Celiac axis and superior mesenteric artery (SMA) area lymph nodes and masses
- Vascular structures (Celiac, SMA, SMV, splenic vessels, portal vein, hepatic vein, renal vessels)
- The entire pancreas, pancreatic duct
- Spleen, Gallbladder, Bile ducts
- Most abdominal /retroperitoneal abnormal lymph nodes and masses
- Anal sphincter muscles

The uses of EUS include:

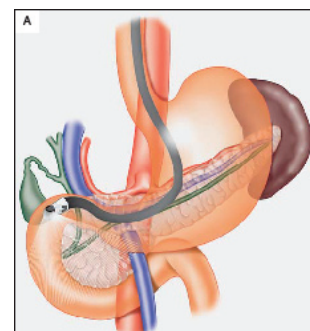
- Evaluation of GI submucosal masses
- Evaluation and FNA of suspicious lymph nodes in the posterior mediastinum, abdomen, retroperitoneal and perirectal areas
- Evaluation and FNA of suspicious masses or cystic neoplasms in the pancreas, esophagus, stomach, duodenum, left adrenal gland, left lobe of the liver, lung masses abutting the esophagus
- Evaluation of possible stones or sludge in the bile ducts and gallbladder (with fewer complications than ERCP)²
- Cancer staging (T staging, N staging, vascular invasion)³
 - Lung Cancer (N staging)
 - Esophageal cancer

- Gastric Cancer
- Pancreatic Cancer
- Rectal Cancer
- MALT (mucosa associated lymphoid tissue) lymphoma of the stomach

- Evaluation of acute, chronic or recurrent pancreatitis of unclear etiology
- Evaluation of anal sphincter muscles in patients with fecal incontinence
- Evaluation of perirectal abscesses and perianal fistulae
- Evaluation of Barrett's esophagus with high grade dysplasia to exclude occult cancer
- EUS guided placement of radiographic markers (fiducials) on malignant tumors for image guided radiation therapy
- EUS guided celiac ganglion neurolysis to reduce pancreatic cancer pain

1. Endoscopic ultrasound-guided ureterosigmoidostomy in malignant ureteral obstruction: description of a new method. Artifon EL, da Silveira EB, Lopes RI, et al. *Endoscopy*. 2008 Sep;40(9):769-72.
2. EUS-first versus ERC-first for patients with intermediate probability of bile duct stones: is one strategy superior to the other? da Silveira EB, Barkun AN. *Endoscopy*. 2007 Apr;39(4):357-8.
3. Prospective evaluation of EUS vs CT scan for staging of ampullary cancer. Artifon EL, Couto D, Sakai P, da Silveira EB. *Gastrointest Endosc*. 2009. In press.

Dr. Ruel T. Garcia and Dr. Eduardo da Silveira perform EUS as an outpatient procedure with conscious sedation.



© Elsevier Inc 2006. Hawes & Fockens: Endosonography

Video Capsule Endoscopy, the Window into the Small Bowel

Obscure gastrointestinal bleeding (OGIB) is a common problem encountered by gastroenterologists. OGIB is defined as bleeding not identified by gastroscopy or colonoscopy, which fail in 3-5% of cases¹. It is sub-classified as obscure overt if there is melena or hematochezia; or, as obscure occult, if there is only anemia [usually iron deficiency] and/or positive fecal occult blood. Previously only evaluable indirectly, the mucosa of mid-gastrointestinal tract – the area from the jejunum to ileum – is able to be examined via wireless video capsule endoscopy (VCE) [see figure], as well as double-balloon enteroscopy when needed.

The most common indication for VCE is obscure gastrointestinal bleeding. The most recent American Gastroenterological Association position statement states that VCE should be the next test, after gastroscopy and colonoscopy, in such cases². Compared to push enteroscopy, VCE has consistently proven to have superior diagnostic yield³. One recent meta-analysis reported yields of 63%

for VCE and only 25% for push enteroscopy⁴. VCE may be helpful for patients with small bowel Crohn's disease, complications of celiac sprue, and those with familial polyposis syndromes.

Overall, the complication of capsule retention may be seen in 0.75% of patients. When this occurs, it usually defines the source of pathology, and indeed assists in surgical therapy by identifying the exact site of disease.

VCE is a highly sensitive diagnostic test, especially in patients with obscure gastrointestinal bleeding, that streamlines the diagnostic work-up and rests as an important first-line tool in the evaluation of the small bowel.

1. De Leusse A. Capsule endoscopy or push enteroscopy for first-line exploration of obscure gastrointestinal bleeding. *Gastro* 2007;132:855-862.
2. Raju G et al. AGA Institute medical position statement on obscure gastrointestinal bleeding. *Gastro* 2007;133:1694-1696.
3. Sidhu R et al. Guidelines of small bowel enteroscopy and capsule endoscopy in adults. *Gut* 2008;57:125-136.
4. Triest SL et al. A meta-analysis of the yield of capsule endoscopy compared to other diagnostic modalities in patient with obscure gastrointestinal bleeding. *Am J Gastro* 2005;100:2407-18.

Capsule endoscopy

A capsule fitted with a disposable mini video camera can examine parts of the small intestine that standard scopes can't reach for diagnosing unexplained bleeding or other abnormalities. The video data is transmitted and stored in a recorder worn on a belt, and is later downloaded to a computer that the doctor can study.

THE PROCEDURE

- 1 Fasting necessary prior to swallowing capsule
- 2 Capsule glides smoothly through digestive tract
- 3 Wireless recorder worn on a belt around waist receives signals transmitted by capsule through sensors placed on patient's body
- 4 Capsule naturally excreted

THE CAPSULE

What it can show

- Stomach
- Colon
- Small intestine disorders
- Rectum
- Small intestine

Advantages:

- Painless
- No sedation
- Provides 3-D, color images of small intestines without surgery
- Allows doctors to make early, accurate diagnosis of problems so they can recommend most appropriate treatment

Size:

- Side: 27 mm (1.2 inches)
- Front: 11 mm (0.4 inches)