

ADVANCES IN ENDOSCOPY

Current Developments in Diagnostic and Therapeutic Endoscopy

Section Editor: John Baillie, MB ChB, FRCP

Endoscopic Ultrasound: Common Challenging Scenarios



Jorge V. Obando, MD
Assistant Professor of Medicine
Division of Gastroenterology
Duke University School of Medicine
Durham, North Carolina

G&H If a patient has a large pancreatic pseudocyst that is causing early satiety by compressing the gastric outlet, how should the patient be managed?

JO Standard management of a symptomatic pseudocyst consists of endoscopic drainage, even if the patient is potentially a good candidate for surgical intervention. The patient should be referred to a tertiary care center that has expertise in this procedure. The specialist performing endoscopic drainage should meet the patient in an outpatient clinic setting days before the procedure to discuss in detail the nature, risks, and benefits of the procedure as well as to create a rapport. The specialist should avoid meeting the patient for the first time immediately before the procedure.

Because endoscopic drainage is a complex procedure, there is potential for complications as well as the need to repeat the procedure, sometimes more than once, especially if necrosectomy is required. Endoscopic drainage should be performed under general anesthesia for airway protection because the stomach may fill up with fluid quickly after puncture and as the procedure progresses. A large cyst often produces a bulge in the lumen. When this occurs, the pseudocyst can usually be punctured safely without the need for endoscopic ultrasound (EUS), provided that there are no gastric varices.

G&H What skills are needed to perform endoscopic drainage of this cyst?

JO There is a debate over whether cyst gastrostomy or cystoduodenostomy should be performed by an EUS expert or an endoscopic retrograde cholangiopancrea-

tography (ERCP) expert, but ideally both skill sets are needed. The ideal cyst-gastrostomy operator should have the EUS skills to determine whether the cyst can be drained endoscopically (Figure 1), especially if there is no bulge. (Endoscopic drainage can be performed if the cyst is less than 1 cm away from the lumen, there are no major vessels along the path of the intended track, and there is minimal or no debris. If debris is seen, as in Figures 2 and 3, multiple sessions of necrosectomy will likely be needed.) The ideal cyst-gastrostomy operator also should be able to place and possibly manipulate wires and stents, which is typically an ERCP skill.

G&H If a large rectal cancer is discovered during a colonoscopy, should the patient be referred to EUS for staging or first undergo cross-sectional imaging?

JO Intuitively, cross-sectional imaging should be considered as the next step in evaluation after a diagnosis is made to determine whether there is metastatic disease, as this would change management and potentially avert the need for EUS staging. The 2013 National Comprehensive Cancer Network guidelines on rectal cancer recommend the use of both EUS and abdominal/pelvic computed tomography (CT) but do not specify timing. Given the widespread availability of CT, patients typically undergo this procedure first and then an EUS within a few days.

Another issue in rectal cancer is how to manage a malignant rectal polyp, which is typically removed at the time of colonoscopy. In this case, tattooing should be performed at the time of the colonoscopy or within 2 weeks. An EUS is typically performed (with tattooing,

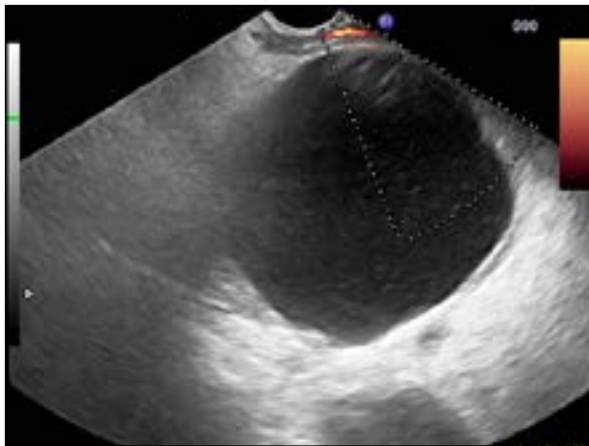


Figure 1. An ideal pseudocyst for cyst gastrostomy. There is a minimal solid component.

if not already done) to assess for lymph node invasion or the presence of soft tissue in the postpolypectomy area. Specimen review with an experienced pathologist and colorectal surgery consultation should be pursued to determine whether the polyp should undergo endoscopic resection or further surgical intervention.

G&H In the setting of oropharyngeal cancer, can an EUS expert perform fine-needle aspiration of a lymph node adjacent to the upper esophageal sphincter?

JO In this case, the EUS expert would usually first review the CT with a radiologist to confirm the location of the lesion. A lesion immediately adjacent to the upper esophageal sphincter probably will not be approachable via EUS. Given the design of the linear array echoendoscope, the opening of the biopsy channel (the site of puncture) is approximately 20 to 25 mm proximal to the tip of the ultrasound transducer (and the center of the lesion). In this case, the site of puncture would be well in the hypopharynx. Thus, I would not recommend puncturing this area, given the potential pain and possible infection issues that gastroenterologists are not equipped to manage.

G&H How effective is EUS-guided celiac plexus block for management of pain in patients with chronic pancreatitis related to ongoing alcohol abuse?

JO Celiac plexus block (CPB) can be an efficient way of controlling pain, but, unfortunately, it is a short-term solution. One study showed that at 24 weeks, only 10% of patients who underwent CPB experienced some benefit. Patients with pain from chronic pancreatitis

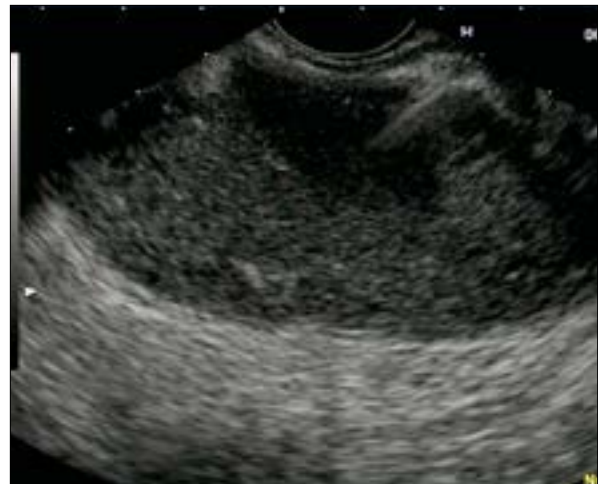


Figure 2. A pseudocyst with a large amount of solid debris, which will likely need necrosectomy.

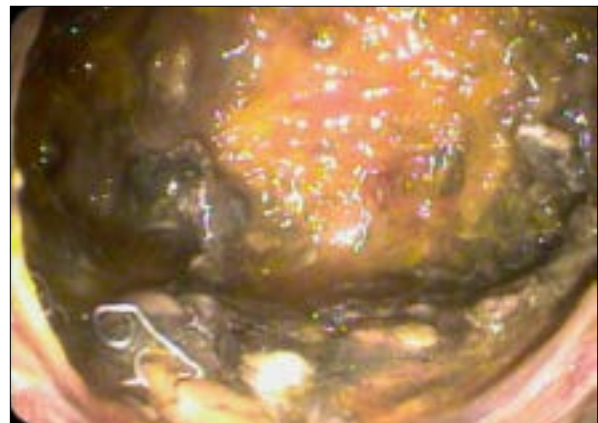


Figure 3. An endoscopic view of the pseudocyst in Figure 2.

typically have a complex psychosocial history that may include ongoing alcohol abuse and use of narcotics and other drugs. In some patients, it may be very difficult to distinguish pain from addiction. I use CPB in combination with other long-term strategies for chronic pain management, such as stopping ongoing alcohol use, alleviating any pancreatic duct obstructions via ERCP or surgery, and using other pain management strategies recommended by pain service consultants. The pain service can also perform CPB and often offers percutaneous CPB in office settings.

G&H When a patient is referred for EUS-guided needle sampling of a mass in the pancreatic head, is tumor seeding a concern?

JO This is a common question. There is a possibility that seeding of malignant cells may take place along the path of the needle. In such cases, I would explain to the

patient that the alternatives are either no biopsy (not a realistic option, especially if the patient will receive neoadjuvant chemoradiation) or a percutaneous biopsy. One study showed that biopsy via the percutaneous approach has a much higher incidence of peritoneal metastases compared with biopsy via EUS. I would also explain that if surgery (Whipple procedure) is needed, the track will likely be removed along with the tumor.

G&H If a patient undergoing ERCP has tight stenosis of the descending duodenum, how effective is EUS-guided bile duct puncture and stenting through the duodenal bulb?

JO Most masses in the head of the pancreas should be visible and likely amenable for biopsy with the tip of the echoendoscope located in the bulb. If this is not the case, sometimes fine-needle aspiration of a mass in the head of the pancreas can be performed from the stomach.

I typically do not perform dilation in an attempt to advance the linear array echoendoscope into the second portion of the duodenum because this instrument has a long, stiff tip and is difficult to maneuver. Passing the echoendoscope into the second portion of the duodenum is practically a blind maneuver and is difficult even in patients who have a normal anatomy. We are awaiting the release of a slimmer linear array EUS echoendoscope (Pentax EG3270UK), the diameter of which is 10.8 mm (vs 12.8 mm in the current echoendoscope).

Depending on the local expertise, I would recommend that permanent drainage routinely be obtained via percutaneous transhepatic cholangiography, which is a well-established approach. Studies have shown that complications can occur in up to 47% of cases of EUS-guided puncture of the common bile duct and attempted therapy. At this time, an EUS-guided cholangiography therapeutic approach should be pursued only in the research setting.

G&H What is the role of EUS for characterizing mediastinal masses?

JO EUS can visualize the posterior mediastinum well. It is best suited to evaluate (and obtain fine-needle aspiration from) the subcarinal, aortopulmonary window, lower parasophageal, and pulmonary ligament lymph node stations. In this setting, EUS is most commonly used for staging of nonsmall cell lung cancer (NSCLC) but is also used to diagnose other benign and malignant processes. Sarcoidosis, histoplasmosis, tuberculosis, leiomyomas, and duplication cysts are the most common benign entities. NSCLC, lymphomas, and metastases of breast, colon, renal cell, and gastric cancers in addition to cancers of other sites, including unknown primary, are the malignancies most commonly seen in the mediastinum. Combining EUS with endobronchial ultrasound allows for near-complete minimally invasive mediastinal staging in NSCLC, enabling mediastinoscopy to be avoided in the vast majority of patients.

Dr Obando has no conflicts of interest to disclose.

Suggested Reading

Micames C, Jowell PS, White R, et al. Lower frequency of peritoneal carcinomatosis in patients with pancreatic cancer diagnosed by EUS-guided FNA vs. percutaneous FNA. *Gastrointest Endosc*. 2003;58(5):690-695.

Gress F, Schmitt C, Sherman S, Ciaccia D, Ikenberry S, Lehman G. Endoscopic ultrasound-guided celiac plexus block for managing abdominal pain associated with chronic pancreatitis: a prospective single center experience. *Am J Gastroenterol*. 2001;96(2):409-416.

ASGE Standards of Practice Committee; Jue TL, Sharaf RN, Appalaneni V, et al. Role of EUS for the evaluation of mediastinal adenopathy. *Gastrointest Endosc*. 2011;74(2):239-245.

Wallace MB, Pascual JM, Raimondo M, et al. Minimally invasive endoscopic staging of suspected lung cancer. *JAMA*. 2008;299(5):540-546.

Swartz DK, Obando JV. Endoscopic management of peri-pancreatic collections. *Gastroenterol Res Pract*. 2012;2012:906381.

2013 NCCN guidelines for rectal cancer. National Comprehensive Cancer Network. http://www.nccn.org/professionals/physician_gls/pdf/rectal.pdf. Accessed November 8, 2013.