Study examines endoscopic ultrasound-guided drainage of pancreatic pseudocysts

October 21 2013

Researchers report that in patients with pseudocysts with viscous debris-laden fluid, endoscopic ultrasound-guided drainage by using a combination of a nasocystic drain and transmural stents improves clinical outcomes and lowers the stent occlusion rate compared with those who underwent drainage via stents alone. The study appears in the October issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

A pancreatic pseudocyst consists of a localized fluid collection that is within or adjacent to the pancreas and is sealed in a fibrous wall of reactive tissue. Pseudocysts develop in 10 percent to 20 percent of patients with acute pancreatitis (inflammation of the pancreas) and are present in 20 percent to 40 percent of patients with chronic pancreatitis. Indications for drainage of the pseudocyst include persistent intra-abdominal symptoms (ie, abdominal pain, early satiety, nausea and vomiting), cyst-related adverse events (biliary obstruction or infection), and/or a rapid increase in cyst size. The management of pseudocysts traditionally has been surgical. However, surgical management has been associated with a 35 percent adverse-event rate and mortality of 10 percent. Endoscopic ultrasound-guided transmural drainage is a minimally invasive method for the management of pseudocysts. Clinical trials have demonstrated that EUS-guided drainage is as effective as surgery, causes fewer adverse events, and is more cost-effective compared with surgery.

Most studies on the endoscopic treatment of pseudocysts have evaluated the use of one or more endoprostheses (hollow stents or tiny tubes that are inserted into the pseudocyst to allow drainage into the stomach or duodenal lumen) alone for transgastric or transduodenal drainage. EUS-guided drainage has now been recognized as the standard procedure for the management of symptomatic pancreatic pseudocysts. However, debris within the pseudocyst may impair the outcome of endoscopic drainage by leading to premature stent occlusion (blockage). A recent study demonstrated that pancreatic pseudocyst drainage with both endoprosthesis (stents) and nasocystic (from the nose into the cyst) drainage is safe and associated with a high success rate.

Endoscopic ultrasound (EUS) uses a flexible endoscope which has a small ultrasound device built into the end and can be used to see the lining of the esophagus, stomach, small bowel, or colon. The ultrasound component produces sound waves that create visual images of the digestive tract which extend beyond the inner surface lining and also allows visualization of adjacent organs. EUS can also be used to diagnose and treat diseases of the pancreas, bile duct and gallbladder when other tests are inconclusive, and EUS can be used to determine the stage of cancers.

"We hypothesize that the placement of an additional nasocystic drain alongside the transmural stents may be particularly useful to facilitate irrigation of the cyst cavity when the fluid to be drained has a significant amount of debris. There is currently no clinical trial to evaluate the aforementioned hypothesis. The primary aim of this study was to compare the short-term and long-term clinical outcomes of EUS-guided pseudocyst drainage with and without nasocystic drainage for the management of pancreatic pseudocysts with viscous solid debris-laden fluid. Our secondary outcomes were to evaluate procedure-related adverse events and reintervention in the study cohort," said study lead author Ali A. Siddiqui, MD, Thomas Jefferson University Hospital,

Philadelphia, Pennsylvania. "We found that EUS-guided drainage of pseudocysts with viscous solid debris-laden fluid via a nasocystic drain alongside transmural stents resulted in a lower stent occlusion rate and better clinical outcomes when compared with drainage via transmural stents alone."

Methods

The endoscopic database at Thomas Jefferson University Hospital was searched for all patients who had undergone EUS-guided drainage of a pancreatic pseudocyst with "viscous solid debris-laden fluid" between October 2000 and January 2012. All cysts were diagnosed by CT or magnetic resonance imaging. The indications for pseudocyst drainage were symptomatic, rapidly enlarging, and/or infected pseudocysts. The study examined consecutive patients with pancreatic pseudocysts managed by EUS-guided drainage and compared those who underwent drainage via nasocystic drains alongside stents versus those who underwent drainage via transmural stents only. The primary outcomes were short-term success and long-term success of the procedures. The secondary outcomes were procedure-related adverse events and re-intervention. The final analysis included 88 patients who all underwent endoscopy by three experienced staff gastroenterologists.

Results

The patients with viscous solid debris-laden fluid whose pseudocysts were drained by both stents and nasocystic tubes had a three times greater short-term success rate compared with those who had drainage by stents alone. On 12-month follow-up, complete resolution of pseudocysts with debris drained via stents alone was less (58 percent) compared with those with debris who underwent drainage via nasocystic drains alongside stents (79 percent). The rate of stent occlusion was

higher in cysts with debris drained by stents alone (33 percent) compared with those drained via nasocystic drains alongside stents (13 percent).

The researchers concluded that EUS-guided drainage of pancreatic pseudocysts with viscous solid debris-laden fluid via a nasocystic drain alongside transmural stents resulted in a lower stent occlusion rate and better clinical outcomes when compared with drainage via transmural stents alone. They hypothesized that the presence of solid debris within a pseudocyst may require early saline solution irrigation via a nasocystic tube to achieve adequate drainage and prevent stent occlusion. They recommended a prospective multi-center study to confirm these findings.

Provided by American Society for Gastrointestinal Endoscopy