Best of pancreaticobiliary endoscopy: 2015-2016

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The last 24 months have seen tremendous development in the realm of pancreaticobiliary endoscopy, with both ERCP and EUS making significant technical advances. New procedures are coming into widespread use, and old procedures continue to be refined. This article serves to update the reader on some of the most relevant topics and articles published in the realm of pancreaticobiliary endoscopy since 2015.

LUMEN-APPOSING METAL STENTS

No other topic has received as much attention in the world of pancreaticobiliary endoscopy in the past 2 years as has the use of lumen-apposing metal stents (LAMSs), mostly to drain pancreatic fluid collections (PFCs) (Fig. 1) but also to provide direct biliary and gallbladder drainage and other novel off-label uses (Fig. 2). After a period of limited access, these devices are now widely available. Multiple LAMSs are on the market worldwide, and their use is expanding rapidly.

In 2015, Walter et al[1] reported their results of a prospective study of 61 patients undergoing EUS-guided LAMS placement, most of whom had walled-off necrosis (WON). These authors reported clinical success in 93% of patients with pseudocysts and 81% of patients with WON. Nine patients failed treatment, including 4 who ultimately required surgery.[1] LAMSs were introduced into the U.S. market in 2014, and U.S. studies soon appeared in the literature. In 2015, Shah et al[2] published a prospective study of outcomes in 33 patients with PFCs undergoing placement of LAMSs. These authors were able to place LAMSs in 30 of 33 patients, with the remainder receiving double-pigtail stents. In patients receiving LAMSs, the PFCs resolved 93% of the time, and it should be noted that approximately one third of these patients underwent necrosectomy through the LAMS. Adverse events included pain, stent migration, or dislodgement, and access site infection but were rare.[2] This study was followed in rapid succession by other, larger studies of LAMSs to drain PFCs.

In 2016, Siddiqui et al[3] published a multicenter retrospective study of LAMSs for PFCs in 82 patients, of whom 80 ultimately underwent LAMS placement. This study overwhelmingly focused on patients with WON. Clinical success was seen in 100% of patients with pseudocysts and 88% of patients with WON, most of whom required debridement. Adverse events occurred in 10 patients, including bleeding and stent maldeployment.[3]

Also in 2016, Sharaiha et al[4] published a retrospective multicenter study of 124 patients with WON undergoing LAMS placement. Overall clinical success was 86%, similar to that seen in the Siddiqui et al study. These studies, and other smaller ones like them, have served to put LAMSs at the forefront of EUS-guided drainage of PFCs. Studies comparing LAMSs with older technologies such as double-pigtail stents are underway because LAMSs are considerably more expensive.

LAMSs are just now starting to be used to perform endoscopic gallbladder drainage, usually in poor operative candidates. Limited data suggest this is at least comparable in efficacy and safety to percutaneous cholecystostomy tube placement and may provide better quality of life.[5-8]

INDOMETHACIN FOR POST-ERCP PANCREATITIS PREVENTION

In 2012, Elmunzer et al[9] published their landmark study demonstrating a significant benefit to the use of 100 mg of rectal indomethacin as a pharmacologic approach to reduce post-ERCP pancreatitis (PEP) in a cohort of patients who were primarily treated for sphincter of Oddi dysfunction. This study appeared to corroborate already existing, but essentially ignored, studies supporting the idea that nonsteroidal anti-inflammatory drugs (NSAIDs) could reduce the incidence and severity of PEP in patients undergoing ERCP.[10-13] In the intervening years, several studies have examined the use of rectal NSAIDs in an unselected group of patients undergoing ERCP. A 2015 study[14] evaluating the value of rectal NSAIDS (indomethacin) in patients with suspected type III sphincter of Oddi dysfunction undergoing ERCP did not show a benefit in reducing the incidence or severity of PEP when

Abbreviations: FNB, fine-needle biopsy; LAMS, lumen-apposing metal stent; NSAID, nonsteroidal anti-inflammatory drug; PEP, post-ERCP pancreatitis; PFC, pancreatic fluid collection; WON, walled-off necrosis.

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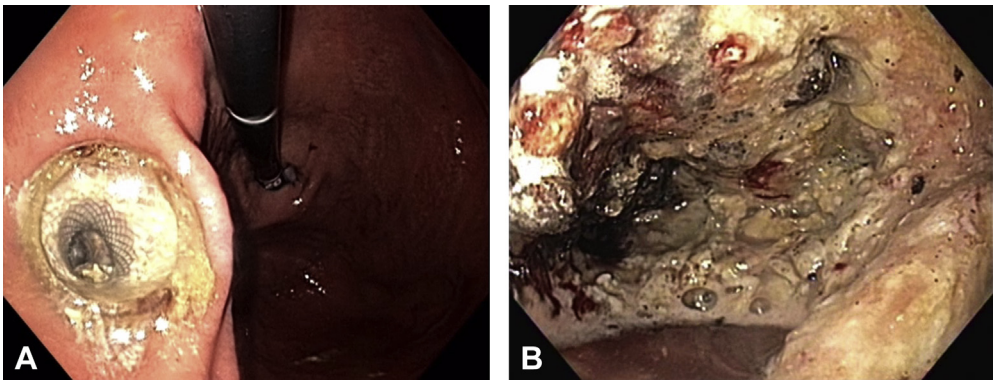

Figure 1. A, Retroflexed view of a LAMS placed along the posterior wall of the stomach to treat a patient with infected pancreatic necrosis. **B,** Endoscopic view of a large cavity containing pancreatic necrosis during endoscopic debridement through a LAMS with an EGD scope. The cavity was completely debrided endoscopically over 3 sessions. *LAMS*, lumen-apposing metal stent.

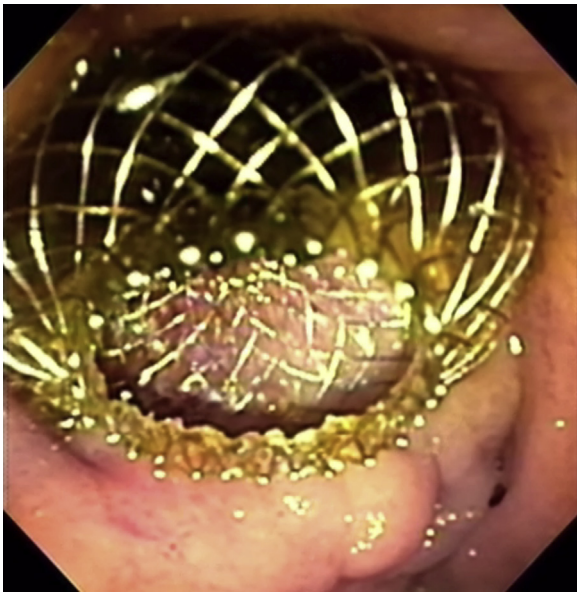

Figure 2. Endoscopic image of a LAMS placed through the duodenal bulb into the common bile duct in a transduodenal manner for biliary drainage in a patient with an inaccessible papilla. *LAMS*, lumen-apposing metal stent.

compared with pancreatic duct stenting alone, seemingly arguing against at least some of the findings of Elmunzer et al's study.

In 2016, Levenick et al[15] published a prospective, double-blind, placebo-controlled study of 449 patients who underwent ERCP. Levenick et al randomized patients to receive 100 mg of rectal indomethacin or a placebo suppository. Levenick et al observed no differences in the rates of PEP or the severity of PEP in those who developed it when they compared the results in patients who received indomethacin with those who did not. Of note, this study was stopped by the Data Safety Monitoring Committee given the lack of evidence for efficacy of rectal indomethacin in the prevention of PEP.

Also in 2016, and in stark contrast to the findings of Levenick et al, Thiruvengadam et al[16] reported their retrospective results in approximately 4000 consecutive patients with a variety of indications who underwent ERCP from January 1, 2009 to December 1, 2015. These authors found that PEP occurred in 1.99% of patients who received indomethacin and 4.73% of patients who did not receive the drug. It is difficult to reconcile the results of the Levenick et al and Thiruvengadam et al studies at this time. Overall, the exact role and benefits of rectal NSAIDs with regard to their use in ERCP are unclear, although these agents are widely used nonetheless.[17]

EUS-GUIDED CORE BIOPSY SAMPLING

Although EUS-guided FNA has been the standard of care for sampling solid and cystic lesions for over 2 decades, this past year has seen widespread interest in EUS-guided tissue core acquisition, sometimes referred to as fine-needle biopsy (FNB) sampling (Fig. 3). Older needles designed to acquire core samples never received widespread usage, but a new generation of needles specifically designed to garner larger tissue samples that can undergo histologic analysis, as opposed to just cytologic analysis, are becoming widely available. Core tissue samples may be more amenable to special staining, preserve tissue architecture, and can be used to evaluate primary malignant lesions, metastases, as well as solid organs (most notably the liver) for evaluation of disease states[18] (Fig. 4).

A 2016 study comparing a new EUS-FNB needle (ShArk-Core; Covidien, Dublin, Ireland) to a standard cytology needle (EchoTip; Wilson Cook, Winston Salem, NC) included 30 patients. The FNA needle required fewer needle passes to obtain diagnostic adequacy than the standard needle ($P < .001$). The FNB needle required 1.5 passes to reach adequacy, whereas the standard needle required 3 passes. For cases with cell blocks, the FNB needle produced diagnostic material in 85% of cases, whereas the standard needle produced diagnostic material in 38% of the cases. The FNB needle produced actual