

Endoscopic ultrasound-guided pancreatic and biliary interventions

Kawakubo K, Kawakami H, Kuwatani M, Kubota Y, Kawahata S, Kubo K, *et al.* Endoscopic ultrasound-guided choledochoduodenostomy vs. transpapillary stenting for distal biliary obstruction.

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In this paper from a Japanese group, the authors have reported the outcomes of endoscopic ultrasound-guided choledochoduodenostomy (EUS-CDS) as a method of initial biliary drainage in patients with malignant distal biliary obstruction. The authors compare two temporally separated groups in whom different initial methods of biliary drainage were used: While the initial (June 2009 to May 2012) 56 patients received endoscopic transpapillary stent - (ETS) biliary drainage, the latter 56 patients (May 2012 to March 2014) received EUS-CDS. The primary outcome was the clinical success rate, i.e., successful deployment of stent with reduction of total bilirubin levels lower than half of preprocedural levels or below 3.0 mg/dL within 4 weeks. Other outcomes parameters measured were total procedure time, time to oral intake, procedural complications, rates of re-intervention, and overall survival. The authors excluded 17 patients who underwent ETS with plastic stenting. The two groups had comparable baseline characteristics except for a higher frequency of pancreatic cancer in the group undergoing EUS-guided drainage. Interestingly, in spite of 20–30% patients having evidence of duodenal invasion, clinical success rates were more than 90% in either of the groups. While the time to oral intake (median 1 day in each), need for re-intervention (5% in EUS group and 7% in ETS group), and overall survival (mean 296 and 158 days, respectively) were comparable in the two groups, the EUS-CDS group seemed to score by way of lesser procedure time (19.7 vs. 30.2 min, respectively) and absence of any episode of postendoscopic retrograde cholangiopancreatography (ERCP) pancreatitis in this group. The serum bilirubin levels at 1 week and 1 month were comparable between the two groups. Further, the 1-year re-intervention rates were comparable at 16.6% and 13.6% in the EUS-CDS and ETS groups, respectively. While 16% of patients in the ETS group suffered from post-ERCP pancreatitis, none in the EUS-CDS group experienced this complication. Two patients in the EUS-CDS group developed

liver abscess while one developed biliary peritonitis. These complications did not occur in the ETS group. The overall rates of adverse events were comparable.^[1]

Commentary

Distal malignant biliary obstruction is usually a result of biliary obstruction from lesions at or close to the ampulla and may include cases of pancreatic head cancer, ampullary neoplasms, distal cholangiocarcinoma, or occasionally, lymph nodal obstruction.^[2] The relief of obstruction is desirable in certain clinical situations such as presence of cholangitis and palliation of symptoms such as pruritus and occasionally as part of preoperative/prechemotherapy reduction in bilirubin levels.^[3] ERCP is the current method of choice for drainage in these situations as it provides an internal drainage.^[3] However, ERCP may fail in patients where access to papilla is not possible or biliary cannulation is unsuccessful. In such situations where ERCP fails, percutaneous drainage is often resorted to. EUS-guided drainage has also emerged as an important armamentarium to handle situations wherein ERCP has failed. EUS-guided rendezvous can be used in situation where papilla is accessible, but cannulation cannot be achieved while EUS-guided transluminal drainage can be used in inaccessible papilla and even when papilla is accessible.^[4] This report, in contrast, describes the utility of EUS-CDS as an initial intervention rather than a salvage procedure. EUS-guided drainage is likely to be technically more successful and also avoids risk of post-ERCP pancreatitis. The present work has suggested that indeed EUS-guided drainage is feasible as an initial method of drainage. Even though the study is not a randomized trial and includes only a small number of patients in either group, it does suggest that there is no risk of post-ERCP pancreatitis in patients undergoing EUS-guided drainage. The routine applicability of the findings to the usual clinical settings may not be feasible as of today because of the lack of personnel trained in EUS-guided intervention and possible escalation of costs with use of EUS fine needle aspiration needle and metal stent for this procedure.^[5] However, reduction of procedure-related adverse outcomes included post-ERCP pancreatitis is of interest to the endoscopists. EUS-guided drainage as a primary modality for biliary drainage may be ready for prime-time if further evidence becomes available which clarifies that the risk of bile leak does not weigh down the benefits achieved by reduction of post-ERCP pancreatitis. Furthermore, in spite of using a partially covered stent design, two cases of stent migration were reported in the EUS group.^[1,5] The study although important suffers from few limitations including the fact that it was a retrospective report with small sample. A randomized trial comparing the two interventions would be required to further clarify the possible role of EUS-CDS as the initial procedure of choice for drainage in

distal biliary obstruction. Till that time, EUS-guided drainage should be used at expert centers in cases where ERCP fails or is not possible.

Yang D, Amin S, Gonzalez S, Mullady D, Hasak S, Gaddam S, *et al.* Transpapillary drainage has no added benefit on treatment outcomes in patients undergoing EUS-guided transmural drainage of pancreatic pseudocysts: A large multicenter study.

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This paper reports on a large multicenter retrospective study of 375 patients who were treated with EUS-guided transmural drainage (TMD) at 15 academic centers in the United States. Of the 375 patients, 174 had pseudocysts drained transmurally and these patients were divided into two groups: Those undergoing TMD alone or combined with transpapillary drainage (CD). Of these 174 patients, TMD alone was done in 95 (55%) cases and CD was done in 79 (45%) patients. The two groups were compared for baseline, procedural, and outcome related parameters. The two groups were similar for baseline characteristics including age, gender, and etiology and underlying chronic pancreatitis. The median size of the pseudocysts was similar in TMD and CD groups (9.0 cm; interquartile range [IQR], 7.3–12.3 cm and 9.5 cm; IQR, 7.1–12.2 cm, respectively). Pancreatic duct disruption was reported more frequently in patients who underwent CD (6.3 vs. 17.7%). The technical success in TMD was 96.8% while it was much lower in CD group (44%). This difference was due to difficulty in transpapillary drainage as of 79 patients successful pancreatography was possible in 69 and intended pancreatic intervention in 36 (46%) patients. The adverse event rates were similar in the two groups. The symptomatic and radiological resolution rates were statistically similar in both the groups. Complete symptomatic improvement in short term was recorded in 42 patients (72.4%) who underwent TMD alone and 47 patients (67.1%) in CD group while radiological resolution was recorded 48/72 (66.7%) and 41/68 (60.3%) patients, respectively. Rates of long-term symptom improvement and radiological resolution were also similar. Even when the comparison was restricted to patients who underwent successful transpapillary drainage, no benefit of CD was appreciable.^[6]

Commentary

Treatment of pancreatic fluid collections is required when they are symptomatic usually due to abdominal pain, gastric outlet obstruction, or biliary obstruction or become infected.^[4] The present trend is toward a less invasive approach, and EUS has emerged as a procedure of choice for transluminal drainage.^[4] While multiple sessions are needed in patients with walled off necrosis, usually a single procedure is enough in

patients with pseudocysts.^[7] Previously, a couple of reports comparing CD with TMD have offered divergent results.^[8,9] In one retrospective report of 110 patients, the combined approach had success of 97.5% versus 80% of TMD alone suggesting that drainage at “two heads” works better than one head alone.^[8,10] Another report, similar to the present one, found no differences between either of the methods or CD.^[10] In contrast to previous reports, the authors have reported use of revised Atlanta definitions to label a pancreatic collection as a pseudocyst as they have utilized the EUS at the time of drainage to determine the presence or absence of solid debris. This is an important addition to the study as this distinction was not as clear in the previous reports. It is now realized that the computed tomography may not perform as well as other modalities (magnetic resonance imaging and EUS) for detecting solid debris in the pancreatic collection.^[11] Further, the amount of solid debris reduce with time and a lesion initially reported as a walled off necrosis may be a pseudocyst by the time the lesion is planned for drainage.^[12] It is unclear as to which patients were selected and why for a CD vis-à-vis TMD. In spite of a larger size and availability of a longer follow-up, the study has also important limitations such as retrospective, nonrandomized design and therefore cannot exclude selection bias of more difficult patients to the CD group. This study adds on to the evidence that addition of transpapillary drainage has no additional benefit over endoscopic TMD alone in patients with pancreatic pseudocysts.

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References

1. Kawakubo K, Kawakami H, Kuwatani M, Kubota Y, Kawahata S, Kubo K, *et al.* Endoscopic ultrasound-guided choledochoduodenostomy vs. transpapillary stenting for distal biliary obstruction. *Endoscopy* 2016;48:164-9.
2. Sharma MP, Ahuja V. Aetiological spectrum of obstructive jaundice and diagnostic ability of ultrasonography: A clinician's perspective. *Trop Gastroenterol* 1999;20:167-9.
3. Saxena P, Kumbhari V, Zein ME, Khashab MA. Preoperative biliary drainage. *Dig Endosc* 2015;27:265-77.
4. Sharma V, Rana SS, Bhasin DK. Endoscopic ultrasound guided interventional procedures. *World J Gastrointest Endosc* 2015;7:628-42.
5. Moon JH, Choi HJ, Lee YN. Will endoscopic ultrasound-guided bile duct drainage replace ERCP? *Endoscopy* 2016;48:107-9.
6. Yang D, Amin S, Gonzalez S, Mullady D, Hasak S, Gaddam S, *et al.* Transpapillary drainage has no added benefit on treatment outcomes in patients undergoing EUS-guided transmural drainage of pancreatic pseudocysts: A large multicenter study. *Gastrointest Endosc* 2015. pii: S0016-510703056-4.
7. Rana SS, Bhasin DK, Sharma RK, Kathiresan J, Gupta R. Do the

morphological features of walled off pancreatic necrosis on endoscopic ultrasound determine the outcome of endoscopic transmural drainage? *Endosc Ultrasound* 2014;3:118-22.

8. Trevino JM, Tamhane A, Varadarajulu S. Successful stenting in ductal disruption favorably impacts treatment outcomes in patients undergoing transmural drainage of peripancreatic fluid collections. *J Gastroenterol Hepatol* 2010;25:526-31.
9. Hookey LC, Debroux S, Delhaye M, Arvanitakis M, Le Moine O, Devière J. Endoscopic drainage of pancreatic-fluid collections in 116 patients: A comparison of etiologies, drainage techniques, and outcomes. *Gastrointest Endosc* 2006;63:635-43.
10. Bhasin DK, Rana SS. Combining transpapillary pancreatic duct stenting with endoscopic transmural drainage for pancreatic fluid collections: Two heads are better than one! *J Gastroenterol Hepatol* 2010;25:433-4.
11. Rana SS, Chaudhary V, Sharma R, Sharma V, Chhabra P, Bhasin DK. Comparison of abdominal ultrasound, endoscopic ultrasound and magnetic resonance imaging in detection of necrotic debris in walled-off pancreatic necrosis. *Gastroenterol Rep (Oxf)* 2015. pii: Gou088.
12. Rana SS, Bhasin DK, Reddy YR, Sharma V, Rao C, Sharma RK, *et al*. Morphological features of fluid collections on endoscopic ultrasound

in acute necrotizing pancreatitis: Do they change over time? *Ann Gastroenterol* 2014;27:258-261.

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