

Biliary drainage in case of surgically altered anatomy: How to select the first line approach?

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Biliary access in altered anatomy can now be achieved by several routes or techniques. The decision to use a specific route is mainly driven by the type of altered anatomy, local expertise, safety concerns, and respective success rates of each technique. These methods include e-ERCP (enteroscopy-assisted endoscopic retrograde cholangiopancreatography), EUS-BD (endoscopic ultrasound biliary drainage), ERCP through a gastrostomy tract, and laparoscopy-assisted ERCP in patients with RYGB anatomy. One might dream of a technique that would be broadly available, easy to practice, with an almost 100% success rate and minor adverse events (AEs). On the contrary, routes that offer higher technical and clinical success have higher complications rate, and vice-versa.

This is further demonstrated in the multicenter, international, cohort study at 10 tertiary centers published in this issue by Mouen Kashab et al, who retrospectively compared EUS-BD and e-ERCP, in 98 patients with surgical upper gastrointestinal anatomy and absence of duodenal access [1.] Technical success was achieved in 48 patients (98%) in the EUS-BD group as compared to 32 patients (65.3%) in the e-ERCP group (OR 12.48, $P=0.001$). Clinical success was attained in 88% of patients in the EUS-BD group as compared to 59.1% in the e-ERCP group (OR 2.83, $P=0.03$). Procedural time was significantly shorter in the EUS-BD group (55 min vs 95 min, $P<0.0001$). AEs occurred more commonly in the EUS-BD group (20% vs. 4%, $P=0.01$). However, the majority (90%) of AEs were mild/moderate. Length of stay was significantly longer in the EUS-BD group (6.6 d vs. 2.4 d, $P<0.0001$).

The authors acknowledged that the outcomes of any direct comparison between the 2 techniques were subject to significant biases. It was a retrospective study with inherent limitations due to the study design, patients from each group were selected from different centers according to ex-

pertise and center-effect was not accounted for, and finally, the baseline characteristics of patients were not similar between the 2 groups. They fairly concluded that EUS-BD can be performed with a high degree of clinical efficacy and moderate safety in patients with surgically altered upper gastrointestinal anatomy and should be offered to patients after a failed initial e-ERCP.

e-ERCP indeed offers some advantages over EUS-BD [2]. It is an established procedure that is widely available and practiced. Management of choledocholithiasis using e-ERCP remains the technique of choice as the EUS-guided approach remains challenging for this indication. Repeat treatment is better achieved with e-ERCP, especially in benign diseases, and dedicated ERCP devices compatible for use through enteroscopes are available from multiple manufacturers. Furthermore, the procedure is very safe with rare severe AEs and is associated with a moderate rate of clinical success.

Improvement in success rates can also be foreseen with development of new scopes and devices to assist the progression even in long surgical limbs. Tom Moreels et al recently reported on use of a new prototype enteroscope with a larger working channel allowing easier access to all accessory catheters, even when the enteroscope was in the retroflex position [5]. In that report, 12 ERCP procedures were successfully performed on 8 patients with short-limb Roux-en-Y and biliary anastomosis (biliary surgery with bilioenteric anastomosis, Roux-en-Y liver transplantation and Roux-en-Y Whipple resection) or intact papilla (Roux-en-Y gastrectomy) and in 2 patients with long-limb Roux-en-Y and intact papilla (Roux-en-Y gastric bypass). In all 10 patients, the biliary system was reached and ERCP was successful. A novel reusable endoscope (Olympus Corp, Tokyo, Japan) with an integrated motor was recently developed for rotating a disposable short spiral overtube mounted on the insertion

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tube portion. The first cases are now just published and show that the novel motorized enteroscope could be smoothly inserted approximately 250 cm distal to the ligament of Treitz within 20 minutes with excellent visualization of the intubated small bowel. Careful removal of the endoscope with counter clockwise rotation of the spiral revealed no iatrogenic mucosal trauma. No AEs were registered [6].

The debate between “partisans” of EUS-BD and e-ERCP remains open until we get more data on effectiveness of the new developments in deep enteroscopy, and on short-term and long-term safety of EUS-BD in less experienced centers. At the current time, safety should remain the primary concern when selecting a first-line approach. Therefore, e-ERCP should be offered primarily to patients and EUS-BD used as a second line in case of failure. However, in patients with malignant biliary obstruction and expected long surgical limbs, the success rate with e-ERCP is still unsatisfactory and EUS-BD can be offered as a first-line modality. But biliary access in patients with altered anatomy is an endoscopic procedure in active evolution, with the goal of achieving faster, easier, more efficient and safer results, and improvements are on the way.

Competing interests: None

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