COMMENTARY
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Tips for Successful Endoscopic Retrograde Cholangiopancreatography in Patients with Billroth II Gastrectomy

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See "Usefulness of Forward-Viewing Endoscope for Endoscopic Retrograde Cholangiopancreatography in Patients with Billroth II Gastrectomy" by Jong Won Byun, Jae Woo Kim, Se Yong Sung, et al., on page 397-403

The success rate for cannulating the desired duct in surgically altered anatomy status, such as Billroth II gastrectomy has been just above 50%; while the overall success rate for selective cannulation has been about 90% in normal anatomy.[1] In addition to this low success rate, endoscopic retrograde cholangiopancreatography (ERCP) procedure has been known as a challenging way even for experts in patients who had previously undergone Billroth II gastrectomy due to the possibility of small bowel perforation by endoscope.[2] Two problems are inherent during ERCP in patients with previous Billroth II gastrectomy. First, the afferent loop intubation can be difficult because of the sharp angulation of the anastomosis site or a long afferent loop. The second problem is that the cannulation has to be done in an opposite direction.

Many manipulations have been attempted to improve the success rate of ERCP procedure in Billroth II gastrectomy.[3] The special manipulations, such as tube insertion, using pediatric colonoscope, wire guided intubation, and large balloon dilation, have been suggested to help reach the papilla through long afferent loop. Using large channel duodenoscope which accepts variable accessories with an elevator was previously recommended in Billroth II ERCP. However, this duodenoscope is hard to assess afferent loop and pass the Treiz ligament. Above all things, the risk of small bowel perforation is relatively high while using duodenoscope. It was reported that single- or double-balloon enteroscope enable successful ERCP in patients with an altered anatomy. However, there were still limitations on using ERCP accessory due to long working length and small size of channel. Recently, there were some reports that the high rate of successful ERCP was achieved by using forward-viewing endoscope in patients with Billorth II gastrectomy.[4,5]

Byun et al.[6] reported Billorth II ERCP by using regular gastroscope in this issue of *Clinical Endoscopy*. The overall success rate of reaching the papilla was 42 out of 46 (91%) and selective cannulation of the bile duct was successful in all patients (42 out of 42 patients, 100%) after the approach of papilla. No serious complications were encountered, except for one case of small perforation due to endoscopic sphincterotomy site injury. The authors announced that the intubation of the afferent loop using forward-viewing gastroscope was easy in most cases without time consuming. If the gastroscope reached the papilla, bile duct cannulation was not difficult because the endoscope and the catheter were in line with the common bile duct. Also, they carefully advanced the guidewire through the inserted catheter for selective deep cannulation of the bile duct. If selective biliary cannulation failed, the biliary cannulation succeeded 100% through making an incision at the inverted roof of the papilla with a needle knife. They improved the success rate by performing large balloon dilation followed by sphinterotomy for removing common bile duct stone, if needed. The authors failed to reach the papilla due to acute angulation of the afferent loop in four patients. Park et al.[7] recommended using cap-assisted ERCP to improve the cannulation rate when it is difficult to assess to the afferent loop due to acute angulation.

Fitted transparent cap is very useful for overcoming the acute angulations and allows easy advance to the afferent loop. The proper direction in acute angulations was determined by

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looking through the transparent cap that kept a certain distance and visual field. Reduction of any loops created during the procedure was facilitated by hooking of the longer tip of the cap-fitted endoscope against a mucosal fold. The side wall of papilla was pushed with the cap and the papillary orifice was turned to the face of scope. For the reasons mentioned above, the cap-fitted endoscope is preferred in forward viewing gastroscope ERCP recently. However, when successful cannulation is failed even using all the above techniques, repeated excessive attempts can increase the risk of small bowel perforation. So clinicians should consider other alternative approaches, such as percutaneous approach, for laparoscopic common bile duct exploration at the appropriate moment. The percutaneous transhepatic choledochoscopy is known to be effective and safe rescue therapy in Billroth II gastrectomy patients with failed ERCP and high risk.[8]

In summary, ERCP in patients with surgically altered anatomy like Billroth II gastrectomy is considered as difficult as grade 2 to 3 in ERCP degrees of difficulty. The high success rate of the access to the afferent loop and selective bile duct cannulation can be achieved by forward viewing endoscope and/or cap-assisted ERCP. Bile duct stones can be removed safely by papillary large balloon dilation with or without sphincterotomy. At present, the Billoth II ERCP becomes to be performed frequently in company with the development of many techniques and useful accessories. Choosing the most appropriate techniques is the best way to improve the success rate of Billroth II ERCP and to avoid the serious complications. Surgical or percutaneous approach should be considered as soon as possible after a failed initial approach.

Conflicts of Interest

The authos has no financial conflicts of interest.

REFERENCES

1. Forbes A, Cotton PB. ERCP and sphincterotomy after Billroth II gastrectomy. Gut 1984;25:971-974.
2. Faylona JM, Qadir A, Chan AC, Lau JY, Chung SC. Small-bowel perforations related to endoscopic retrograde cholangiopancreatography (ERCP) in patients with Billroth II gastrectomy. Endoscopy 1999;31:546-549.
3. Lin LF, Siauw CP, Ho KS, Tung JC. ERCP in post-Billroth II gastrectomy patients: emphasis on technique. Am J Gastroenterol 1999;94:144-148.
4. Koo HC, Moon JH, Choi HJ, et al. The utility of a multibending endoscope for selective cannulation during ERCP in patients with a Billroth II gastrectomy (with video). Gastrointest Endosc 2009;69:931-934.
5. Choi CW, Choi JS, Kang DH, et al. Endoscopic papillary large balloon dilation in Billroth II gastrectomy patients with bile duct stones. J Gastroenterol Hepatol 2012;27:256-260.
6. Byun JW, Kim JW, Sung SY, et al. Usefulness of forward-viewing endoscope for endoscopic retrograde cholangiopancreatography in patients with Billroth II gastrectomy. Clin Endosc 2012;45:397-403.
7. Park CH, Lee WS, Joo YE, Kim HS, Choi SK, Rew JS. Cap-assisted ERCP in patients with a Billroth II gastrectomy. Gastrointest Endosc 2007;66:612-615.
8. Jeong EJ, Kang DH, Kim DU, et al. Percutaneous transhepatic choledochoscopic lithotomy as a rescue therapy for removal of bile duct stones in Billroth II gastrectomy patients who are difficult to perform ERCP. Eur J Gastroenterol Hepatol 2009;21:1358-1362.