

# Double balloon scope for endoscopic retrograde cholangiopancreatography

M. Bruno

Department of Gastroenterology and Hepatology, Erasmus Medical Centre, Rotterdam, the Netherlands

In this issue of the *Netherlands Journal of Medicine*, Koornstra reports on the experience with a rather unconventional use of the double balloon enteroscope.<sup>1</sup> Instead of using it for what it was originally designed, i.e. luminal inspection of the small intestine in search of mucosal abnormalities such as angiodysplasia, Crohns' ulcers or polyps, they looked beyond this. Koornstra et al. utilised the double balloon enteroscope, with a diagnostic and therapeutic intent, solely as a vehicle to reach a distant target beyond the small intestine, namely the papilla of Vater and the biliary tract, in patients with surgically altered anatomy, in whom a regular side-viewing endoscopic retrograde cholangiopancreatography (ERCP) scope was impossible to use or failed.

In the normal anatomical situation, that is when no surgical diversion of the upper gastrointestinal tract is present, the distance from the incisors to the papilla of Vater in humans is approximately 55 to 60 cm (so-called short scope position). After Billroth II (BII) gastrectomy, even after surgical resection of the distal stomach and diversion of the small intestine with the creation of an afferent and efferent loop, the distance is still such that, at least in theory, the papilla can be reached by a conventional scope (either forward or side viewing) in the majority of patients. In practice, there are patients in whom the surgeon created an afferent loop that is too long for a conventional scope to reach the papilla. Moreover, in some cases there is a sharp angulation between the stomach remnant and the entry to the afferent loop, preventing safe cannulation of the afferent loop with a side-viewing scope. Importantly, some series of ERCP in patients with a BII gastrectomy report over 10% of perforations, a percentage which is exceedingly high compared with ERCP in patients with a normal anatomy.<sup>2,3</sup> All this can be attributed to the use of a side-viewing endoscope in an anatomically unfavourable situation and to a relative lack of experience of the majority of endoscopists in this particular situation. Indeed, patients after BII gastrectomy are becoming a rarity in this day and age of medical treatment of ulcer disease and the discovery of *Helicobacter pylori*. Instead, a

new category of patients are emerging who have undergone complicated and extensive upper abdominal surgery. Importantly, after these complex procedures such as hepaticojejunostomy, Whipple's or pylorus-preserving pancreaticoduodenectomy, reaching the papilla of Vater by peroral endoscopy with conventional endoscopes is virtually impossible. In these patients ERCP by means of double balloon enteroscopy is a valuable option, as is elegantly demonstrated in this issue of the *Netherlands Journal of Medicine* by Koornstra.<sup>1</sup>

Once the ampulla is reached with the double balloon enteroscope, the 'ERCPist' has to deal with some factors that are significantly different from the situation when performing a 'standard' ERCP. For one, instead of a side view, the double balloon enteroscope provides a forward endoscopic view. More importantly, the lack of an elevator may seriously hamper the therapeutic capabilities one has. Nevertheless, several series have now shown that papillotomy, stone extraction and stent placement can all be performed safely and effectively through a double balloon enteroscope in a substantial number of patients without the use of an elevator.<sup>4-7</sup> Undoubtedly, as is the case in all complex therapeutic interventions, operator experience will contribute to a higher success rate of double balloon ERCP. At present, an important drawback is the lack of accessories that have been specifically designed for use through a double balloon forward-viewing scope. It would do the endoscopic instrument and devices companies credit if, despite the fact that these are not mainstream indications and represent a niche market, they were to offer continued support in designing and manufacturing such dedicated instruments and accessories to improve the efficacy and safety of these 'orphan' ERCP procedures for the benefit of our patients.

## REFERENCES

1. Koornstra JJ. Double balloon enteroscopy for endoscopic retrograde cholangiopancreatography after Roux-en Y construction: case series and review of the literature. *Neth J Med* 2008;66:275-9.

2. Faylona JM, Quadir A, Chan AC, et al. Small-bowel perforations related to endoscopic retrograde cholangiopancreatography (ERCP) in patients with Billroth II gastrectomy. *Endoscopy* 2000;32:589-90.
3. Çiçek B, Parlak E, Dişibeyaz S, et al. Endoscopic retrograde cholangiopancreatography in patients with Billroth II gastroenterostomy. *J Gastroenterol Hepatol* 2007;22:1210-3.
4. Moreels TG, Roth B, van der Vliet EJ, et al. The use of the double-balloon enteroscope for endoscopic retrograde cholangiopancreatography and biliary stent placement after Roux-en-Y hepaticojejunostomy. *Endoscopy* 2007;39:196-7.
5. Chu YC, Su SJ, Yang CC, et al. ERCP plus papillotomy by use of double-balloon enteroscopy after Billroth II gastrectomy. *Gastrointest Endosc* 2007;66:1234-6.
6. Aabakken L, Bretthauer M, Line PD. Double balloon enteroscopy for endoscopic retrograde cholangiography in patients with a Roux-en Y anastomosis. *Endoscopy* 2007;39:1068-71.
7. Maaser C, Lenze F, Bokemeyer M, et al. Double balloon enteroscopy; a useful tool for diagnostic and therapeutic procedures in the pancreaticobiliary system. *Am J Gastroenterol* 2008;103:894-900.