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Invited Commentary

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The management of extrahepatic bile duct stones has changed considerably over the last three decades. Open surgery has gradually been replaced by endoscopic, laparoscopic or combined procedures. In this issue of *Digestive Surgery*, ElGeidie et al. present data of a randomized controlled trial comparing two different one-step approaches, i.e. laparoscopic common bile duct exploration (LCBDE) versus intraoperative endoscopic sphincterotomy (IOES).

The authors are to be congratulated for performing this RCT including more than 100 patients in each treatment arm and several aspects need to be highlighted.

The success rate as measured by bile duct clearance for both interventional tactics was comparable and well above 90% without mortality. Therefore, it can be concluded that in general both can be recommended. The study also showed that the two approaches are associated with different hassles. LCBDE was associated with more bile leaks while postinterventional pancreatitis and local bleeding were more often seen in the IOES group. Importantly, these procedure-related morbidities were mostly mild and controlled by conservative means.

Related to stone retrieval there were only 4 failures in the LCBDE group and in 3 of these 4 patients this problem was solved by ERCP. Similarly, of 3 unsuccessful IOES procedures 2 were treated by laparoscopic stone removal, indicating that the 2 approaches complete rather than compete with each other. Irrespective of the technique the treatment is started with, the other approach can be used as second-line intervention with open surgery being necessary only in a few cases with heavily impacted stones or if there is insufficient clarity of the bile duct anatomy.

The authors used intraoperative cholangiography as the baseline study to assess the extent of bile duct lithiasis in all patients confirming that this procedure is a safe and reliable diagnostic tool for managing patients with (suspected) bile duct stones. This needs to be kept in mind especially by young surgeons who often perform cholecystectomy without cholangiography during their training.

Speaking about teaching, the study indicates that especially laparoscopic bile duct manipulation is technically demanding: most of the failures in the LCBDE group occurred at the beginning of the study.

Not only training but also availability of experienced clinicians are issues that need to be considered if we are seeking to find the best treatment for a common clinical problem such as extrahepatic bile duct stones. Of note is the fact that unlike the surgeons in this study, in some countries many surgeons performing cholecystectomies do no longer perform endoscopies at all. Procedures requiring expertise of two different teams are then limited to some centers being large enough to permanently support such teams.

If different procedures for one clinical problem exist with comparable efficacy and safety nonmedical parameters such as costs and availability have to be taken into account for decision making. Statistically, there was no difference in terms of time for the intervention and hospital stay. However, depending on the health care system we are working in it may become important whether a procedure is associated with a mean hospital stay of 2.2 or 3.1 days. Correspondingly, recent literature proved that LCBDE had a significantly shorter hospital stay and lower hospital costs as the authors mention in their discussion.

Taken together, this randomized controlled trial adds valuable data to the controversy about the management of extrahepatic bile duct stones. Based on local expertise and individual experience of the treating physician, we may decide to use either tactic.

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