Minicholangioscopy During Routine Endoscopic Retrograde Cholangiography

The use of miniature cholangioscopes to achieve direct visualization of pathologic changes observed radiologically by endoscopic retrograde cholangiography (ERC) may improve the diagnostic and therapeutic steps in selected patients. Little experience has been reported on minicholangioscopy so far, however (1–4). We therefore evaluated a prototype minicholangioscope suitable for routine endoscopic retrograde cholangiography procedures.

In eight patients with stenoses of the bile ducts, or with suspected residual stones or fragments in the biliary tree, a new minicholangioscope was used at the time of diagnostic or therapeutic ERC. The cholangioscope (Visicath, Saratoga Medical, LAmed, Deisenhofen, Germany) has an outer diameter of 2.3 mm, a working channel of 1.1 mm, and a length of 2 m. The prototype minicholangioscope which we used was not deflectable. It was passed through the working channel of a conventional diagnostic duodenoscope. In patients who did not undergo sphincterotomy (n = 4), a guide wire was placed in the bile duct, and the miniscope was then introduced into the bile ducts along the guide wire. In patients undergoing sphincterotomy (n = 4), the miniscope was positioned in the bile duct under duodenoscopic vision, as in conventional cannulation.

Images adequate for detailed inspection of the bile ducts were obtained in all eight patients. Tumors and benign stenoses (Figure **1**) were easily identified in all but one patient, who had a papillary tumor, and in this case a deflectable instrument would have been desirable. In this pilot study, the diagnosis was known prior to the miniscope examination in all but one patient, who had suspected stones that had not been differentiated from gas in the bile ducts at fluoroscopy. In this patient, the miniscope clearly revealed stones in the biliary tree (Figure **2**).

It is concluded that sterilizable mini-endoscopes small enough to be used during routine diagnostic or therapeutic endoscopic retrograde cholangiography may become a useful adjunct to conventional retrograde cholangiography.

Figure 1: Minicholangioscopic view of a benign stenosis of the common bile duct after cholecystectomy.

Figure 2: Miniendoscopic view of residual fragments of a bile duct stone disintegrated by means of extracorporeal shock wave lithotripsy one day earlier. Fluoroscopically, it had been difficult to distinguish these fragments from gas bubbles. Note the unharmed wall of the bile duct.

References

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M. Sackmann, M. Weinzierl, J. Holl
Department of Medicine II, Klinikum Grosshadern, University of Munich, Munich, Germany

Corresponding Author
M. Sackmann M.D.
Endoscopy Unit, Dept. of Medicine II
Klinikum Grosshadern
University of Munich
81366 Munich
Germany