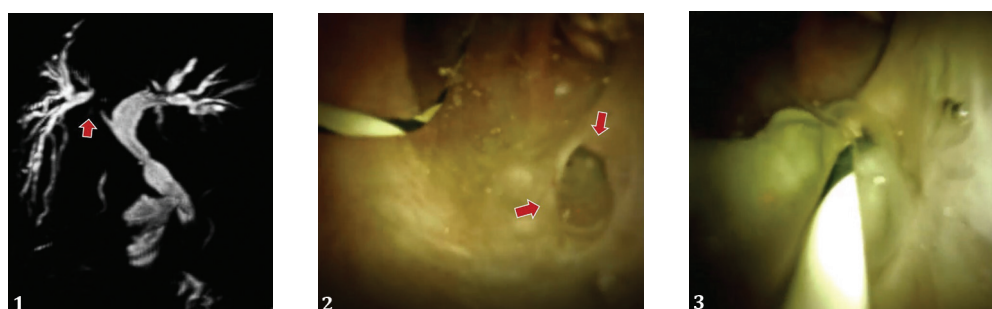


Cholangioscopy in Recurrent Cholangitis after Liver Transplantation: Selective Guidewire Cannulation of Non-anastomotic Biliary Stricture

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A 47-year old woman with liver transplantation for HBV/HDV-related cirrhosis was admitted for high fever and abdominal pain. Blood tests showed increased inflammatory and cholestasis indices. Her medical history included frequent emergency room visits for cholangitis with numerous endoscopic retrograde colangiopancreatographies (ERCPs) being performed over the years, but only achieved temporary resolution of the patient's symptoms. The previous month's magnetic resonance colangiopancreatography (MRCP) showed stenosis of the right hepatic duct (Fig. 1, arrow). Analyzing the old ERCPs performed it has been noticed that the right hepatic duct had never been successfully cannulated. The retrograde cholangiography showed a dilatation of the common bile duct and left biliary tracts with subcentimetric stones. The right biliary tracts were only slightly opacified and we were not able to cannulate them with a standard guidewire, J-tip guidewire, or swing-tip cannulotome. The common bile duct was cleaned with a Dormia basket and a Fogarty extraction balloon (Supplementary file, Fig. 1A). Due to the difficulty in cannulating the right biliary tracts, a cholangioscopy was performed with the Spyglass system (Boston Scientific, Massachusetts, USA). Cholangioscopy showed a regular choledochal anastomosis, with no stenosis or stones in the common bile duct. Above the anastomosis, a small orifice with a scar-like mucosa compatible with the outlet of the right hepatic duct was visualized (Fig. 2, arrow). The right hepatic duct was selectively cannulated with a guidewire provoking abundant pus discharge (Fig. 3). Dilation under fluoroscopic guidance with Savary dilator was performed (Supplementary file, Fig. 1B) and the following cholangiography confirmed the stenosis of the right hepatic duct with dilation of the right biliary tracts (Supplementary file, Fig. 1C). A plastic prosthesis was then placed inside the right hepatic duct with the outflow of purulent material (Supplementary file, Fig. 1D). In the following days, the patient showed complete resolution of inflammatory and cholestatic indices. No procedure-related complication occurred.

In follow-ups performed in the subsequent months, no recurrence of cholangitis occurred again.

In the last few years cholangioscopy has shown various applications for biliary and pancreatic disorders [1] and its use has recently been described for guidewire cannulation of anastomotic biliary stricture after liver transplantation [2-5]. Our case describes the efficacy and safety of using cholangioscopy also in the treatment of non-anastomotic biliary stricture after liver transplantation.

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Conflicts of interest: None to declare.

REFERENCES

1. Yodice M, Choma J, Tadros M. The Expansion of Cholangioscopy: Established and Investigational Uses of SpyGlass in Biliary and Pancreatic Disorders. *Diagnostics* (Basel) 2020;10:132. doi:[10.3390/diagnostics10030132](https://doi.org/10.3390/diagnostics10030132)
2. Woo YS, Lee JK, Noh DH, Park JK, Lee KH, Lee KT. SpyGlass cholangioscopy-assisted guidewire placement for post-LDLT biliary strictures: a case series. *Surg Endosc* 2016;30:3897-3903. doi:[10.1007/s00464-015-4695-7](https://doi.org/10.1007/s00464-015-4695-7)
3. Martins FP, Ferrari AP. Cholangioscopy-assisted guidewire placement in post-liver transplant anastomotic biliary stricture: efficient and potentially also cost-effective. *Endoscopy* 2017;49:E283-E284. doi:[10.1055/s-0043-117940](https://doi.org/10.1055/s-0043-117940)
4. Bokemeyer A, Gross D, Bruckner M, et al. Digital single-operator cholangioscopy: a useful tool for selective guidewire placements across complex biliary strictures. *Surg Endosc* 2019;33:731-737. doi:[10.1007/s00464-018-6334-6](https://doi.org/10.1007/s00464-018-6334-6)
5. Rainer F, Blesl A, Spindelboeck W, Schemmer P, Fickert P, Schreiber F. A novel way to avoid reoperation for biliary strictures after liver transplantation: cholangioscopy-assisted guidewire placement. *Endoscopy* 2019;51:E314-E316. doi:[10.1055/a-0896-2360](https://doi.org/10.1055/a-0896-2360)