

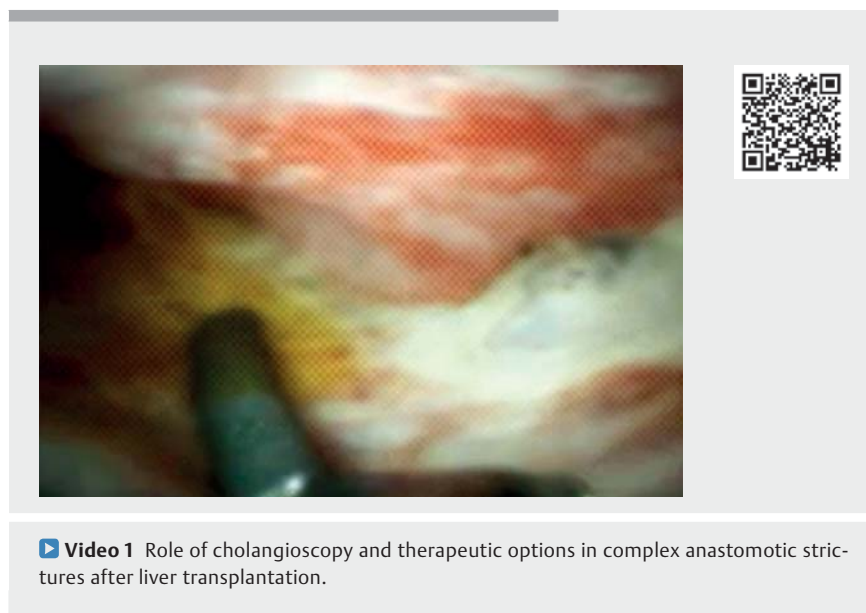
## Role of cholangioscopy and therapeutic options in complex anastomotic strictures after liver transplantation



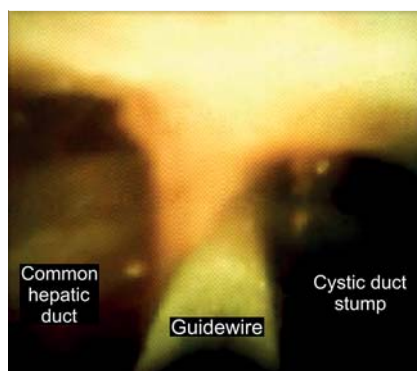
► **Fig. 1** Complex anastomotic stricture.

Biliary strictures are among the most frequent complications following liver transplantation [1,2]. Endoscopic treatment remains challenging; however, cholangioscopy may be an underutilized technique to improve outcomes for complex cases.

We report a case of a 35-year-old gentleman who underwent orthotopic liver transplantation for fulminant hepatitis B. He subsequently developed a hepatic artery thrombosis 9 months after the transplantation and was treated at that time with an endovascular stent. An increase in liver biochemical tests was detected 3 months later. Magnetic resonance cholangiopancreatography (MRCP) identified a biliary anastomotic stricture. Endoscopic retrograde cholangiopancreatog-



► **Video 1** Role of cholangioscopy and therapeutic options in complex anastomotic strictures after liver transplantation.



► **Fig. 2** Cholangioscopy reveals preferential guidewire passage into the cystic duct stump.



► **Fig. 3** Cholangioscopy-assisted guidewire passage through the tight stricture.

raphy (ERCP) (► **Video 1**) revealed a complex anastomotic stricture (► **Fig. 1**) that could not be traversed owing to narrow diameter, axis angulation, and preferential guidewire passage into the cystic duct stump (► **Fig. 2**). Using the cholangioscope, it was possible to place the 0.025-in guidewire through the tight stricture (► **Fig. 3**) and dilate with an 8-mm balloon. Cholangioscopy revealed a pale mucosa in the stenotic

area with fibrosis, debris, and suture material. A 10 Fr×10 cm plastic stent was placed.

On routine follow-up ERCP, the stricture was again dilated, and three 8.5Fr×10 cm plastic stents were placed. Due to the tortuous, complex stricture with significant axis deviation, a 10 mm×6 cm fully covered self-expandable metal stent (SEMS) was placed at the subsequent ERCP.






At 4 months after SEMS placement, an additional ERCP was performed for follow-up. During the procedure, the SEMS was not identified with stent migration. Given the fluoroscopic findings, patient's clinical status, and normalization of laboratory tests, the decision was made to not replace the stent. The patient remained asymptomatic with no need for further procedures at 2-year follow-up. Cholangioscopy may serve as an effective tool for the endoscopic treatment of complex biliary strictures after liver transplantation [3]. In this case, the patient was able to avoid percutaneous biliary drainage and improve his quality of life. For patients with complex strictures associated with axis deviation, SEMS may be a better option compared to plastic stents [4, 5].

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### Competing interests

Eduardo Guimarães Hourneaux de Moura is a consultant for Boston Scientific and Olympus.

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