A novel way to avoid reoperation for biliary strictures after liver transplantation: cholangioscopy-assisted guidewire placement

Biliary tract complications after liver transplantation remain a major therapeutic issue significantly affecting graft and patient survival [1]. Strictures of the bile duct account for about 40% of biliary complications after liver transplantation [2]. Today, endoscopic retrograde cholangiography (ERC) has widely replaced surgery and percutaneous techniques as the treatment of choice for such patients [3]. However, highly fibrotic strictures of the anastomotic region frequently preclude passage of the guidewire. In these cases, percutaneous transhepatic cholangiography (PTC), endoscopic ultrasound-guided biliary drainage, or indication for resection of the stenosis-bearing extrahepatic biliary segment with subsequent biliodigestive anastomosis are applied, all of which are associated with increased morbidity.

We present here three patients with late fibrotic strictures of the anastomotic region after deceased donor liver transplantation (Table 1). ERC revealed high grade stenosis that was impossible to pass despite various ERC maneuvers, including use of hydrophilic guidewires, occlusion balloons, and rotatable sphincterotomy (Fig. 1). Using single-operator cholangioscopy (SpyGlass DS direct visualization system; Boston Scientific), the pin-sized orifice could be identified in all cases (Fig. 2). Only direct visual guidance allowed placement of a 0.025-inch hydrophilic guidewire through the stricture in two patients (Fig. 3). In one patient, pre-dilation of the stricture by means of biopsy forceps allowed subsequent guidewire placement (Fig. 2b). Gradual mechanical dilation and stent placement were achieved in all three cases, avoiding alternative more invasive and riskier procedures. Consequently, direct cholangioscopy resulted in a therapeutic success in all three cases after failure of standard ERC.

From our experience we conclude that single-operator cholangioscopy (SpyGlass) seems to be a useful therapeutic option in patients with highly fibrotic strictures post-liver transplantation. No procedure-related complication occurred. No further interventions, in particular PTC or surgery, with associated morbidity were needed.

Table 1 Cholangioscopy-assisted guidewire placement in three patients with biliary stricture after liver transplantation: patient characteristics.

<table>
<thead>
<tr>
<th>Patient no.</th>
<th>Age, sex</th>
<th>Reason for liver transplantation</th>
<th>Liver transplantation to biliary stricture interval, months</th>
<th>Internal stenting performed at liver transplantation?</th>
<th>Success with single-operator cholangioscopy?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68, M</td>
<td>Cirrhosis, alcoholic</td>
<td>60</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>63, F</td>
<td>Cirrhosis, alcoholic</td>
<td>8</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>33, F</td>
<td>Cirrhosis, autoimmune hepatitis</td>
<td>9</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Endoscopy_UCTN_Code_TTT_1AR_2AG
Competing interests

None

The authors

Florian Rainer\textsuperscript{1,2}, Andreas Blesl\textsuperscript{1,2}, Walter Spindelboeck\textsuperscript{1,2}, Peter Schemmer\textsuperscript{2,3}, Peter Fickert\textsuperscript{1,2}, Florian Schreiber\textsuperscript{1,2}

1 Division of Gastroenterology and Hepatology, Department of Internal Medicine, Medical University of Graz, Austria
2 Transplant Center Graz, Medical University of Graz, Austria
3 Division of Transplant Surgery, Department of Surgery, Medical University of Graz, Austria

Video 1 Cholangioscopy-assisted guidewire placement in a patient with biliary stricture after liver transplantation.
Corresponding author

Florian Rainer, MD
Division of Gastroenterology and Hepatology, Department of Internal Medicine, Medical University of Graz, Austria, Auenbruggerplatz 15, 8036 Graz, Austria
Fax: +43-316-38512648
florian.rainer@medunigraz.at

References


Bibliography
DOI https://doi.org/10.1055/a-0896-2360
Published online: 4.6.2019
Endoscopy 2019; 51: E314–E316
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

ENDOSCOPY E-VIDEOS
https://eref.thieme.de/e-videos

Endoscopy E-Videos is a free access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online.

This section has its own submission website at
https://mc.manuscriptcentral.com/e-videos