Needle knife recanalization of a complete post-transplant bile duct stricture

Benign biliary strictures are established complications after liver transplantation, commonly occurring at the duct-to-duct anastomosis [1]. Severe anastomotic strictures may not be amendable to the gold standard endoscopic therapy. A 65-year-old man with a history of alcoholic cirrhosis who had undergone liver transplantation 1 year previously was referred for endoscopic retrograde cholangiography (ERCP) after outpatient laboratory evaluation revealed signs of cholestasis and magnetic resonance cholangiopancreatography (MRCP) revealed a complete anastomotic stricture (▶ Fig. 1). ERCP was performed and confirmed these findings; in addition, difficulty was encountered while attempting to traverse the stricture with a 0.025-inch guidewire (▶ Fig. 2a). Cholangioscopy was performed, but manipulation with cholangioscopic biopsy forceps was unsuccessful. The guidewire was downsized to a 0.018-inch wire and the stricture was traversed; however, attempts to dilate the anatomic stricture with various dilating catheters were unsuccessful. A needle knife was then loaded over the guidewire, electrocautery was applied, and the stricture was recanalized successfully (▶ Video 1). After this maneuver, there was no evidence of contrast extravasation, which would have suggested bile duct injury (▶ Fig. 2b). A follow-up ERCP 4 weeks later revealed improvement in the anastomotic stricture and a 0.035-inch guidewire was easily passed beyond the stricture (▶ Fig. 2sc). This allowed for routine biliary balloon dilation to 6 mm and placement of a 12-cm 11.5-Fr stent.

Bile duct recanalization has previously been achieved using a combined percutaneous and endoscopic approach [2]. Gupta et al. used a specific needle knife for puncture that allowed a wire to pass through the needle and stricture [3]. Recently, a standard needle knife has been used to cut and puncture these strictures [4]. In our case, cholangioscopic guidance was first used to pass a wire, which allowed for a controlled cut using the loaded needle knife. This technique may be used as a minimally invasive alternative to surgical repair in short anastomotic strictures.

Competing interests

The authors declare that they have no conflict of interest.
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