A guidewire-assisted biopsy technique to assist advancement through a biliary stricture to perform selective mapping biopsy

Fig. 1 Magnetic resonance cholangiography image in a 69-year-old woman with obstructive jaundice showing a hilar biliary stricture.

Fig. 2 Endoscopic image showing the jaw configuration biopsy forceps: **a** open and positioned just outside the papilla; **b** gripping the guidewire outside the papilla.

An endoscopic transpapillary mapping biopsy is useful for evaluating intraepithelial tumor spread in bile duct cancers [1,2]; however, it is occasionally technically difficult to advance the biopsy forceps through a biliary stricture. Here, we describe the case of a patient with a hilar biliary stricture who underwent a selective mapping biopsy. The biopsy technique described is suitable where the bile duct is inaccessible when introducing conventional biopsy forceps.

A 69-year-old woman presented with obstructive jaundice. Magnetic resonance cholangiography indicated a hilar biliary stricture (● **Fig. 1**). We attempted a transpapillary intraductal biopsy of the biliary stricture and a mapping biopsy using conventional biopsy forceps to confirm the definitive diagnosis and look for proximal intraepithelial tumor spread; however, the forceps could not be passed through the stricture. Therefore, we attempted a guidewire-assisted intraductal biopsy.

First, a 0.025-inch guidewire (VisiGlide 2™; Olympus Medical Systems, Tokyo, Japan) was placed at the left intrahepatic bile duct. The guidewire was gripped by the biopsy forceps (Radial Jaw™ 4P; Boston Scientific Japan, Tokyo, Japan) outside the papilla (● **Fig. 2**). Thereafter, the biopsy forceps, which were still securely gripping the guidewire, were slid into the bile duct and advanced through the hilar biliary stricture under fluoroscopic guidance

Fig. 3 Fluoroscopic image showing the biopsy forceps gripping the guidewire, while being advanced through the biliary stricture.

(● **Fig. 3**, ● **Video 1**). Finally, a successful biopsy was performed from the B4 confluence without any complications occurring. Intraductal biopsy specimens of biliary strictures can be obtained under fluoroscopic guidance using conventional biopsy forceps, biliary introducers [3], or rope-

Video 1

Guidewire-assisted technique using jaw configuration biopsy forceps to access the proximal bile duct through a hilar biliary stricture in order to evaluate intraepithelial tumor spread.

way-type biopsy forceps [4]. Biopsy forceps are, however, occasionally difficult to advance through a biliary stricture. The use of miniforceps with a cut biliary dilator was recently reported [2]. Li et al. [5] introduced a guidewire-assisted technique to access the bile duct. To our knowledge, this is the first report of a guidewire-assisted biopsy beyond a biliary stricture. This biopsy technique not only helps with accessing the bile duct but also aids advancement of the forceps through the biliary stricture.

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References

- 1 Kawakami H, Kuwatani M, Etoh K et al. Endoscopic retrograde cholangiography versus peroral cholangioscopy to evaluate intra-epithelial tumor spread in biliary cancer. *Endoscopy* 2009; 41: 959–964
- 2 Hijioka S, Hara K, Mizuno N et al. A novel technique for endoscopic transpapillary “mapping biopsy specimens” of superficial intraductal spread of bile duct carcinoma (with videos). *Gastrointest Endosc* 2014; 79: 1020–1025
- 3 Howell DA, Parsons WG, Jones MA et al. Complete tissue sampling of biliary strictures at

ERCP using a new device. *Gastrointest Endosc* 1996; 43: 498–502

4 Tamada K, Higashizawa T, Tomiyama T et al. Rope-way bile duct forceps with a slide slit for a guidewire. *Gastrointest Endosc* 2001; 53: 89–92

5 Li QY, Chen KJ, Zheng SS. Guide wire-assisted technique to access the bile duct with biopsy forceps for repositioning and removal of metal stents. *Endoscopy* 2013; 45: E273–E274

Bibliography

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