A novel method to obtain biopsy samples from proximal biliary strictures

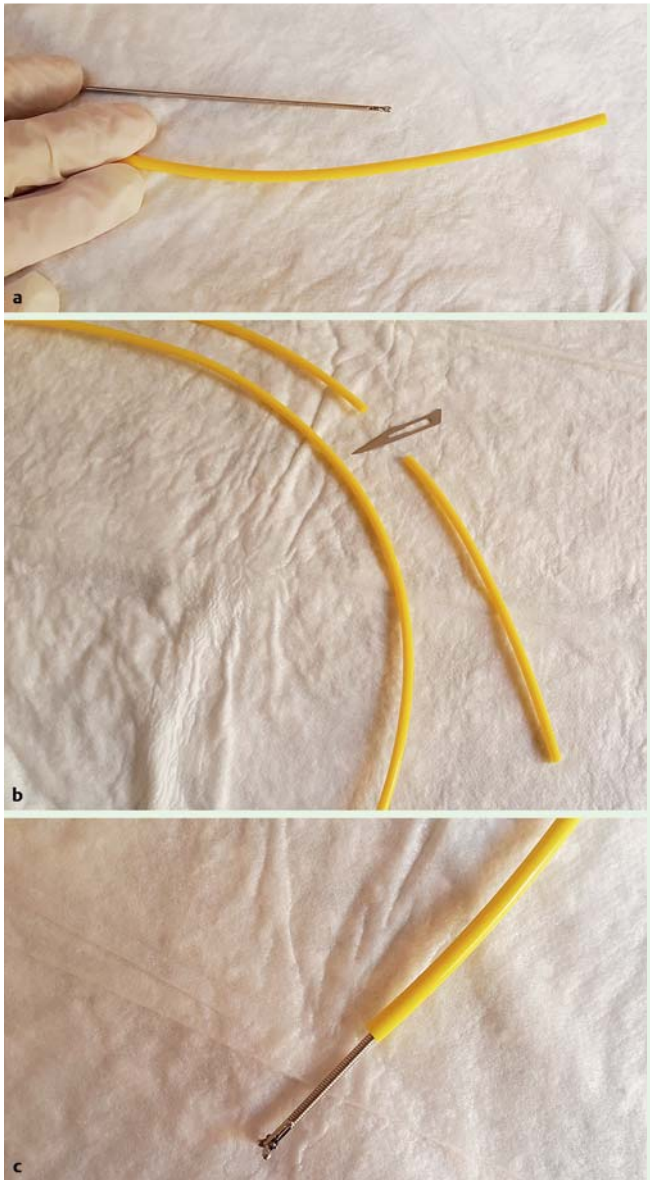

Fig. 1 **a** The stent pusher is 165 cm long whereas the biopsy forceps is 160 cm long. **b** The pusher was cut 8 cm from the distal end with a simple scalpel. **c** The final view of the biopsy forceps going out of the pusher.

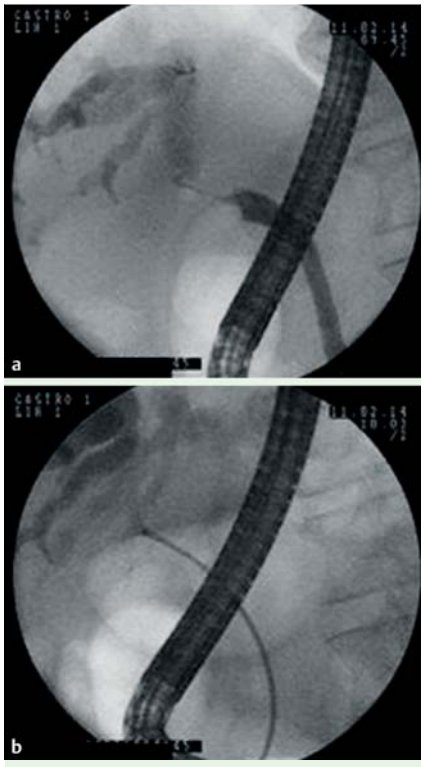

Fig. 2 **a** Fluoroscopic view of the proximal biliary stricture. **b** It was possible to obtain biopsy samples from the proximal stricture using a biopsy forceps advanced through the pusher.

Brush cytology and forceps biopsy are the most commonly used techniques to allow a diagnosis to be reached in patients found with suspected proximal biliary malignancies during endoscopic retrograde cholangiography. However, the sensitivity of brush cytology for diagnosis of malignant biliary strictures ranges only from 30 % to 60 % [1], while in the case of the biopsy forceps it may in some cases be impossible to advance the forceps to the level of the stricture. Recently, we had experience of three cases of proximal biliary stricture in which cholangiocarcinoma was strongly suspected. In all three it proved possible to obtain sufficient biopsy samples for a diagnosis using a novel method.

After cannulation of the main bile duct and identification of the proximal stricture under fluoroscopic guidance, endoscopic sphincterotomy was performed over a guidewire (0.035 inch; Boston Scientific, Natick, MA, USA). The stricture was dilated using a 6- or 8-mm diameter balloon, followed by brushing of the stricture to obtain cytology specimens. Then, a stent pusher (Jet-Set stent introducer system for endoprostheses, diameter 2.1 mm, length 165 cm; MTW Endoskopie, Wesel, Germany) was cut 8 cm from the distal end (▶ **Fig. 1**) and pushed forward over the guidewire until it reached the stricture. The guidewire was withdrawn and a biopsy forceps (diameter 1.8 mm, length 160 cm; Endo-Technik, Solingen, Germany) advanced through the pusher. Biopsy samples were obtained from the stricture level with the forceps (▶ **Fig. 2**), and a plastic stent was subsequently placed. Histopathological examinations of the biopsy specimens in all three cases reported adenocarcinoma, whereas only one of the three brush cytology samples was reported as malignant.

A similar method using a double-balloon enteroscopy forceps has been previously reported [2]. However, the double-balloon enteroscopy forceps is more expensive and impractical than the standard biopsy forceps, and may not be available

in many endoscopy centers. We believe that the method presented here using a biopsy forceps through a pusher can be performed advantageously to obtain adequate tissue samples from proximal biliary strictures for accurate diagnosis.

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Competing interests: None

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