Successful endoscopic removal of fractured guidewire fragments from a peripheral bile duct using a biliary stent delivery system and biopsy forceps

A 61-year-old man with sclerosing cholangitis was referred to our hospital. Blood tests on admission suggested he had acute cholangitis. An abdominal radiograph revealed, in addition to two plastic biliary stents, a foreign body in the upper abdominal area, which appeared to be a fractured guidewire fragment in a peripheral bile duct that had remained after endoscopic retrograde cholangiopancreatography (ERCP) performed at the previous hospital (Fig. 1).

A further ERCP was performed in our facility for acute cholangitis and removal of the fragments. Cholangiography revealed a biliary stricture from the hilar to peripheral bile ducts, in which guidewire fragments were identified (Fig. 2).

After the duct had been dilated with a 7-Fr dilator (Soehendra dilation catheter; Cook Japan, Japan), the introducer tube and pusher tube of a biliary stent delivery system (Gadelius Medical, Japan) (Fig. 3) were inserted. Once the tip of the pusher tube reached the fragments, the introducer tube was withdrawn and the guidewire fragments were removed through the pusher tube with biopsy forceps (Radial Jaw 4 Pediatric Biopsy Forceps; Boston Scientific Japan, Japan) (Fig. 4 and Fig. 5; Video 1). Finally, endoscopic nasobiliary drainage tubes were placed in the bilateral hepatic ducts. The patient’s acute cholangitis improved following this procedure.

Although there are several reports of fractured guidewires being present in the bile ducts, removal of guidewire fragments from a peripheral bile duct has not previously been reported [1–4]. To remove the fragments, we modified the previously reported method for a “mapping biopsy” of the bile duct using a Soehendra dilation catheter and biopsy forceps.
This technique can deliver various devices to the target site easily and accurately. In addition, it may decrease the risk of acute pancreatitis by reducing the burden on the duodenal papilla that is caused by the frequent insertion and removal of devices.

In conclusion, we report 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

Competing interests
None

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