Treatment of a proximally migrated plastic stent in a case of refractory distal biliary stricture

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Proximal migration of a biliary plastic stent is an uncommon but important adverse event. The migrated stents can not only compromise bile drainage but also result in serious adverse events, such as fistulas.1 Although endoscopic retrieval could be an effective method of addressing migrated stents, surgery may be required if endoscopic retrieval is unsuccessful, especially in benign diseases.2-4

A 34-year-old man had experienced severe acute pancreatitis after excessive drinking 1 year earlier. Although his general condition greatly improved after active treatments, he underwent multiple sessions of ERCP for secondary pancreatic fistula and distal biliary stricture. Fortunately, pancreatic fistula was successfully resolved after 3 sessions of stent implantation (Fig. 1). However, the biliary stricture still could not be relieved significantly (Fig. 2). Two months earlier, a 7-cm × 8.5F plastic stent was implanted into the common bile duct (CBD) after the stricture was dilated with a 10F dilating bougie (Figs. 3 and 4). However, the

Figure 1. Pancreatic fistula was treated with pancreatic duct stents.

Figure 2. Fluoroscopy showed the refractory biliary stricture.

Figure 3. Fluoroscopy showed the new implanted biliary stent.
patient had recurrent fever and epigastric discomfort after the operation, and proximal stent migration was confirmed by gastroscopy and fluoroscopy (Fig. 5).

Endoscopic retrieval of the migrated stent was performed carefully. First, the duodenoscope was advanced to the descending part of the duodenum under fluoroscopy because of duodenum stricture secondary to severe acute pancreatitis (Video 1, available online at www.VideoGIE.org). The distal end of the biliary stent could not be seen under endoscopy.

After successful selective cannulation, the guidewire passed into the upper part of the CBD. The basket was then advanced into the CBD over the guidewire. Next, endoscopic retrograde cholangiography showed proximal biliary dilation, distal biliary stricture of the CBD, and the migrated stent.

After several attempts, the proximal end of the stent was successfully caught by the basket, but it was difficult to retrieve because the distal end of the stent was embedded in the biliary wall of the stricture and the distal end could not be seen after a biliary sphincterotomy with a large incision. A violent operation might lead to perforation. To ensure operation safety, a new strategy was used, as shown in the schematic diagram (Fig. 6). First, the stent was moved upward by an extraction balloon and away from the biliary wall. Next, the basket caught the proximal end of the stent and gradually moved down to the distal end. The stent then was removed successfully (Fig. 7). Finally, a fully covered self-expanding metal stent with a long retrieval suture was implanted into the CBD to ameliorate the biliary stricture (Fig. 8). The retrieval suture could be helpful in stent removal even if proximal stent migration occurred. The patient recovered well and remained asymptomatic long after the surgery.

This case shows not only a better treatment strategy for the proximally migrated stent but also a better treatment method for the refractory biliary stricture. It should be of some educational value for trainees when facing cases of stent migration.

Figure 4. Gastroscopy showed the new implanted biliary stent.

Figure 5. Fluoroscopy showed migration of the biliary stent.
Figure 6. Schematic diagram of the treatment strategy.

Figure 7. The removed biliary stent.
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Figure 8. The fully covered self-expanding metal stent with a long retrieval suture.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviation: CBD, common bile duct.

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