Endoscopic removal of a migrated plastic stent from the peritoneal cavity after an EUS-guided gallbladder drainage procedure

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EUS-guided gallbladder drainage is useful as palliative therapy for acute cholecystitis but is associated with adverse events such as biliary peritonitis, abdominal bleeding, intestinal injury, and stent migration. Stent migration is a particularly severe adverse event because it frequently necessitates surgical removal of the stent.1 We report here a case in which a migrated stent in the peritoneal cavity was removed endoscopically under fluoroscopic guidance.

A 74-year-old man with hilar cholangiocarcinoma was admitted to our hospital for the treatment of obstructive jaundice and underwent placement of a 7F plastic stent (Flexima; Boston Scientific, Marlborough, Mass, USA) in the left hepatic duct. Four days after stent placement, he experienced acute cholecystitis (Fig. 1) and underwent EUS-gallbladder drainage. The patient’s gallbladder was punctured through the wall of the duodenal bulb with a 19-gauge EUS needle (EZshot 3; Olympus, Tokyo, Japan). Two 0.025-inch guidewires (VisiGlide 2; Olympus and Revo-Wave Ultrahard; Piolax, Yokohama, Japan) were placed in the gallbladder by use of a double-lumen catheter (Uneven; Piolax), and the fistula was dilated with a 6-mm dilation balloon (Ren; Kaneka, Tokyo, Japan). Finally, a 7F 9-cm double-pigtail stent and nasogallbladder catheter were placed through the fistula (Fig. 2). One day after the procedure, abdominal CT revealed that the duodenal end of the 7F 9-cm double-pigtail stent had migrated into the peritoneal cavity, leading to biliary peritonitis (Fig. 3). Abdominal and gallbladder drainage tubes were inserted percutaneously (Fig. 4), but the patient’s condition did not improve because of continuous bile leakage. Therefore, we decided to remove the migrated stent endoscopically (Video 1, available online at www.VideoGIE.org).

First, we exchanged the nasobiliary catheter for a 7F straight-type plastic stent through the fistula between

Figure 1. Ultrasonographic view of the gallbladder showing debris accumulation.

Figure 2. Drainage of the gallbladder using a double-pigtail stent and nasogallbladder catheter, and drainage of the bile duct using a double-flap stent.
the duodenal bulb and the gallbladder (Fig. 5). We placed a guidewire into the abdominal cavity through the fistula toward the migrated stent, and proceeded with alligator forceps to bite the guidewire. Finally, the migrated stent was grasped and pulled out through the fistula (Fig. 6). The fistula was not clipped because of its small size. The guidewire could prevent organ injury caused by the alligator forceps. No adverse events occurred, and the percutaneous drainage tubes were removed 1 week after the procedure.

Cases in which a migrated plastic stent can be removed from the peritoneal cavity have never been reported, although
a migrated metal stent has been endoscopically removed from the peritoneal cavity. In this case, we chose a relatively short stent because the distance between the gallbladder and duodenum is short. However, a longer stent might be better for preventing release-related migration. Moreover, a pull-back stent may be useful for retrying the deployment if the length of the stent is inappropriate or stent advancement is impossible across the fistula. Endoscopic removal using alligator forceps, as reported here, shows promise for stents that migrate into the abdominal cavity.

DISCLOSURE

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