ORIGINAL ARTICLE

Pancreatitis and cholangitis caused by metallic wire in the duodenal submucosa and muscularis near the papilla: removal by endoscopic submucosal dissection using the pocket-creation method

Kozue Ando, MD,[1] Atsushi Kanno, MD, PhD,[1] Yuji Ino, MD,[1] Hisashi Fukuda, MD,[1] Eriko Ikeda, MD,[1] Kensuke Yokoyama, MD,[1] Alan Kawarai Lefor, MD, MPH, PhD, DrEng,[2] Hironori Yamamoto, MD, PhD[1]

An 82-year-old man with an unremarkable medical history presented with abdominal pain and nausea. Blood tests and a CT scan were consistent with acute pancreatitis and cholangitis (Fig. 1) (Video 1, available online at www.videogie.org). The CT scan showed a high-density linear structure near the duodenal papilla (Fig. 2). Cholangitis and pancreatitis were thought to be caused by a metallic foreign object in the GI tract, and emergent ERCP was performed to remove it. Although the abdominal radiograph showed the object near the papilla with swelling (Figs. 3 and 4), it was difficult to identify by cholangiography. The metallic foreign object was considered to be the cause of pancreatitis and cholangitis because of papillitis based on findings of swelling at the papilla.[1] An endoscopic nasobiliary drainage (ENBD) tube was inserted in the bile duct after endoscopic sphincterotomy to facilitate resolution of cholangitis and pancreatitis. We selected ENBD to avoid ascending cholangitis by inserting an endoscopic biliary stent in this patient and monitoring the properties of the bile. After the clinical status improved, EUS (radial type, EG-580UR; Fujifilm, Tokyo, Japan) was performed to identify the object. A foreign object with an acoustic shadow was identified near the hypoechoic papilla (Fig. 5). Since EUS (convex type, EG-580UT; Fujifilm) showed the foreign object in the submucosa to muscularis layers on the anterior wall and distal to the papilla, the location was marked with indigo carmine by EUS–fine needle injection.[2] Subsequently, a mucosal incision was made near the papilla to expose the wire, and submucosal dissection was performed in the manner of the pocket-creation method (Fig. 6A).[3] Although it was difficult to dissect the submucosa because of dense fibrosis, a portion of the foreign object was identified, allowing its removal with forceps (Fig. 6B). The incision was closed with a clip, and an ENBD tube and pancreatic duct stent were placed to prevent cholangitis and pancreatitis. The procedure required about 2 hours. The object removed was a 2.8-cm-long wire-like metallic object (Fig. 7), but the reason it was in-

Abbreviation: ENBD, endoscopic nasobiliary drainage.

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Division of Gastroenterology, Department of Medicine, Jichi Medical University, Shimotsuke, Tochigi, Japan (1), Division of Surgery, Jichi Medical University, Shimotsuke, Tochigi, Japan (2).

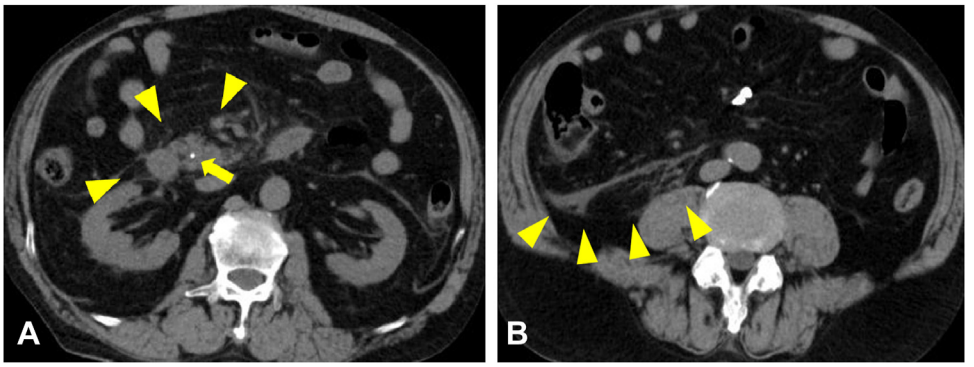

Figure 1. A, CT scan of the abdomen showed a high-density structure (*arrow*) and inflammation in the peripancreatic area, mainly in the pancreatic head (*arrowhead*). **B,** Inflammation caused by pancreatitis is beyond the kidney (*arrowhead*).

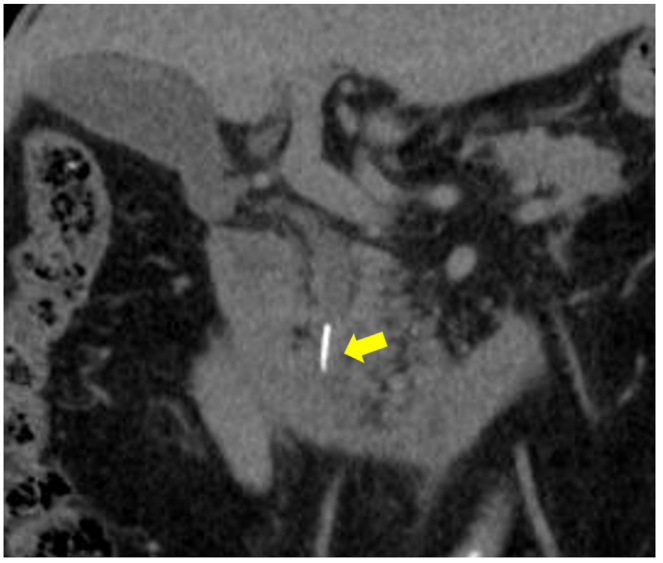

Figure 2. The CT scan coronal image showed metallic linear structures (*arrow*).

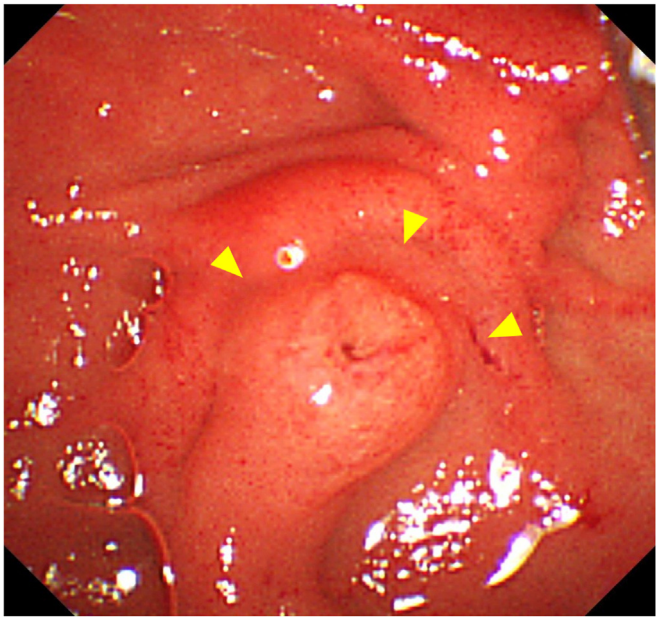

Figure 3. The endoscopic image showed an enlarged papilla (*arrowhead*).

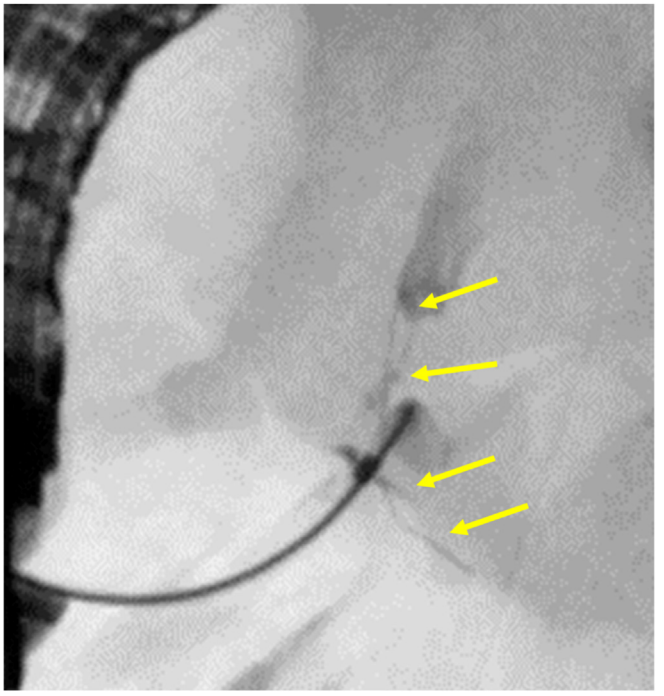

Figure 4. Radiographs showed a foreign body (*arrow*), but cholangiography did not reveal it in the bile duct.

gested was unknown. We speculate that this wire-like metallic object was mixed in food, accidentally ingested, and became impaled near the duodenal papillae. The postoperative course was uneventful without adverse events.

DISCLOSURE

The authors did not disclose any financial relationships.

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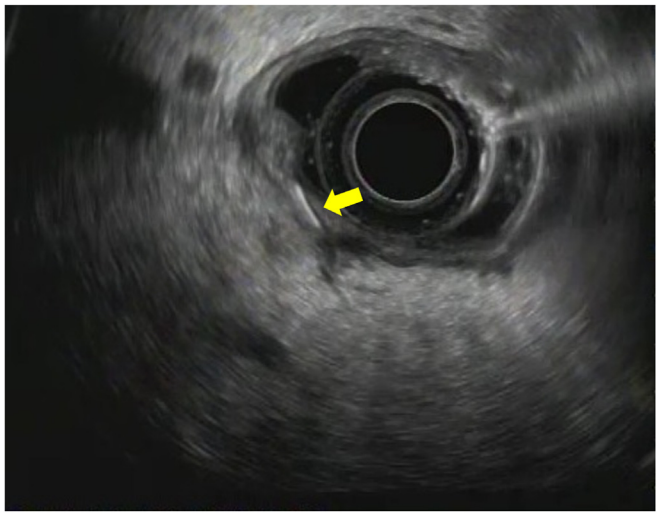

Figure 5. The radial EUS image showed a metallic foreign body from the duodenal submucosa to the muscularis (*arrow*).

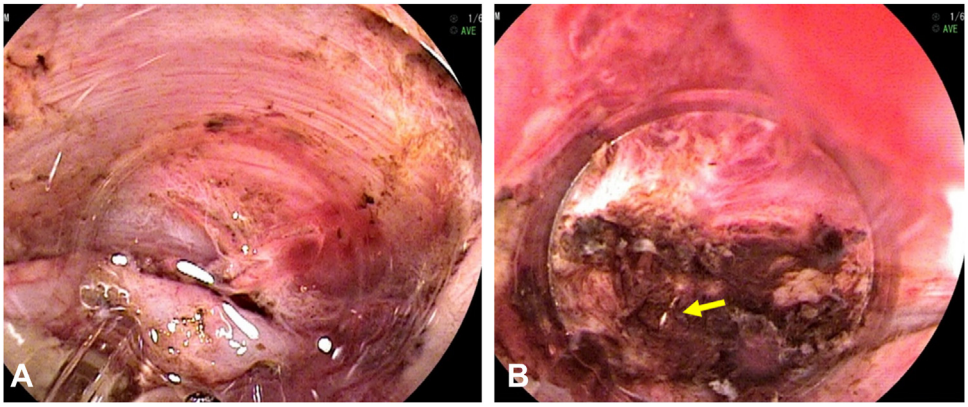

Figure 6. The pocket-creation method of endoscopic submucosal dissection was used to remove the foreign body. **A,** The pocket-creation method was used to dissect the submucosa and search for the foreign object. **B,** Endoscopic imaging showed the foreign object (*arrow*).

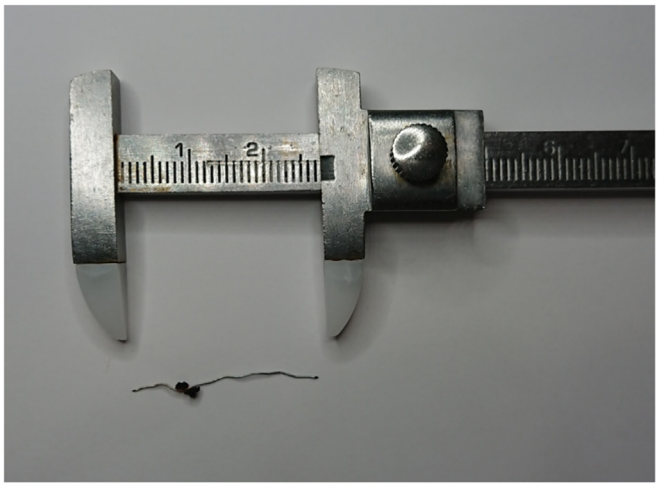

Figure 7. The foreign object was a 2.8-cm-long wire-like object.

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