Gallstone impaction at the orifice of the duct of Wirsung successfully treated via needle-knife papillotomy

An 80-year-old woman presented with epigastralgia. Laboratory investigations demonstrated markedly elevated cholestatic parameters and slightly elevated pancreatic enzymes, including total bilirubin 3.6 mg/dL (normal range 0.4–1.5 mg/dL), aspartate aminotransferase 725 U/L (13–30 U/L), alanine aminotransferase 637 U/L (10–42 U/L), alkaline phosphatase 353 U/L (38–113 U/L), γ-glutamyl transpeptidase 486 U/L (9–32 U/L), amylase 144 U/L (44–132 U/L), pancreatic amylase 47.2% (13.0–47.0%), and lipase 70 U/L (11–59 U/L). Her white blood cell count and C-reactive protein level were within normal limits. Abdominal computed tomography (CT) revealed a gallstone (approximately 8 mm in size) impacted at the ampulla of Vater (▶Fig. 1), but the gallstone was not shown on magnetic resonance cholangiopancreatography (MRCP). Additionally, CT and MRCP showed mild common bile duct (CBD) dilatation and cholecystolithiasis, with no evidence of pancreatitis or dilatation of the pancreatic duct (▶Fig. 2).

Endoscopic retrograde cholangiopancreatography (ERCP) revealed gallstone impaction at the orifice of the ampulla of Vater, which was reddish and protruded (▶Fig. 3a). Cannulation via the orifice of the impacted gallstone compressed the duct of Wirsung unexpectedly. Subsequently, endoscopic retrograde cholan-
gastroscopy (ERC) was successfully performed via cannulation slightly to the oral side of the orifice of the impacted gallstone. Both ERC and intraductal ultrasonography revealed no CBD stones. After endoscopic sphincterotomy, we confirmed that the gallstone was impacted at the orifice of the duct of Wirsung (Fig. 3b). Needle-knife papillotomy was additionally performed and the gallstone was removed uneventfully (Fig. 3c, d). Finally, endoscopic biliary and pancreatic stents were inserted into the CBD and the duct of Wirsung for drainage (Video 1).

The patient’s postoperative course was good and the two stents were removed on postoperative day 1. She was discharged 7 days postoperatively. Gallstone impaction at the orifice of the duct of Wirsung is extremely rare. Needle-knife papillotomy may be an effective endoscopic technique for treating gallstone impaction at this site.

Competing interests
The authors declare that they have no conflict of interest.

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Video 1 Endoscopic extraction of a gallstone impacted at the orifice of the duct of Wirsung using endoscopic sphincterotomy and needle-knife papillotomy.