Direct peroral ultraslim endoscopy-guided biliary drainage in a patient with cystic duct carcinoma and an occluded self-expandable metallic stent

Direct biliary drainage using ultraslim endoscopes has been developed for treating acute cholangitis. We present a case wherein direct biliary drainage with ultraslim endoscopy was successfully used in the setting of an occluded a partially covered self-expandable metallic stent (PC-SEMS) in a patient with unresectable cystic duct carcinoma and duodenal stenosis.

A 72-year-old man presented with acute cholangitis due to locally advanced cystic duct carcinoma. He had undergone PC-SEMS placement for distal biliary obstruction 11 months previously, followed by chemotherapy. This was the third time he had experienced sludge-related PC-SEMS obstruction. Esophagastroduodenoscopy revealed rapid tumor growth with asymptomatic gastric outlet obstruction (Fig. 1) that had not been observed at the most recent PC-SEMS occlusion (1 month previously). A standard duodenoscope could not pass through the obstructed gastric outlet; therefore, we attempted direct biliary drainage using an ultraslim endoscope (GIF XP260N; Olympus Medical Systems, Tokyo, Japan) (Fig. 2). The outer diameters of the endoscopy insertion tube and of the distal end were 5.0 mm and 5.5 mm, respectively; the instrument channel diameter was 2.0 mm. Direct peroral cholangioscopy was performed through the PC-SEMS. We confirmed that the PC-SEMS dysfunction was caused by sludge and food impaction (Fig. 3, Video 1). A 5-Fr nasobiliary drainage catheter was used to obtain a retrograde cholangiogram (Fig. 4, Video 1), which revealed tumor overgrowth (Fig. 5, Video 1). Finally, two cut 5-Fr nasobiliary drainage catheters were successfully placed through the PC-SEMS under direct peroral cholangioscopy guidance, without any complications (Fig. 6, Video 1).

Direct peroral cholangioscopy-guided biliary drainage using ultraslim endoscopes has recently been employed for treating acute cholangitis [1–3]. Itoi et al. reported...
the utility of direct peroral cholangioscopy into the distal side of a PC-SEMS using ultraslim endoscopy [2]. To our knowledge, this is the first report of the use of an ultraslim endoscope for direct peroral cholangioscopy-guided biliary drainage in a patient with gastric outlet obstruction. This should be recognized as a treatment option for patients with cholangitis and gastric outlet obstruction.

**Competing interests:** None

**Fig. 6** Two cut 5-Fr nasobiliary drainage catheters placed side by side through the occluded partially covered self-expandable metallic stent (PC-SEMS): a, b endoscopic views; c radiographic image.