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



**Fig. 1** Endoscopic view of duodenal invasion originating from a cystic duct carcinoma in a 72-year-old man.

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. Esophagogastroduodenoscopy 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



**Fig.2** Radiograph showing an ultraslim endoscope passing through the obstructed gastric outlet.



**Fig.3** Endoscopy using an ultraslim device shows debris and food impaction in the partially covered self-expandable metallic stent.

was caused by sludge and food impac-

tion (**•** Fig. 3, **•** Video 1). A 5-Fr nasobili-

ary drainage catheter was used to obtain

a retrograde cholangiogram (> Fig. 4,

▶ Video 1), which revealed tumor over-

growth (> Fig. 5, > Video 1). Finally, two

cut 5-Fr nasobiliary drainage catheters

were successfully placed through the

PC-SEMS under direct peroral cholan-

gioscopy guidance, without any compli-

cations (> Fig. 6, > Video 1).



**Fig.4** Endoscopic image showing a 5-Fr nasobiliary drainage catheter that was used to obtain a retrograde cholangiogram.

Direct peroral cholangioscopy-guided biliary drainage using ultraslim endoscopes has recently been employed for treating acute cholangitis [1–3]. Itoi et al. reported

## Video 1

Peroral direct biliary drainage technique using an ultraslim endoscope and a 5-Fr nasobiliary drainage catheter.



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.

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**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.