

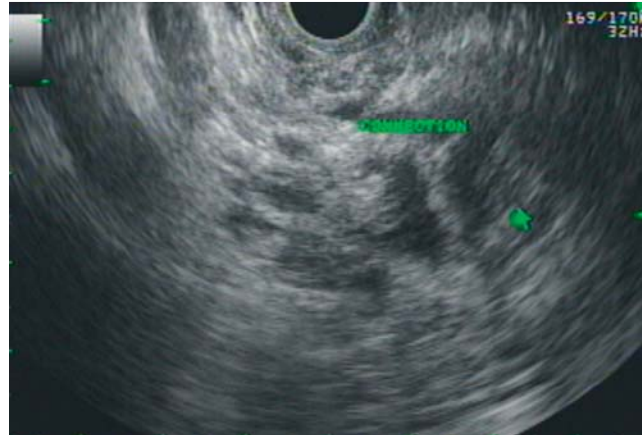
## Overtube-assisted direct peroral pancreatoscopy using an ultraslim gastroscope in a patient suspected of having an intraductal papillary mucinous neoplasm



**Fig. 1** Endoscopic view showing the fish-mouth opening to the ampulla.

A 68-year-old man who had presented with abdominal discomfort and undergone a computed tomography (CT) scan that had revealed cystic lesions in the pancreatic head was referred to us for endoscopic ultrasound (EUS). The endoscopic view showed a fish-mouth opening to the ampulla with mucin content (▶ **Fig. 1**).

EUS revealed a dilated pancreatic duct, approximately 1.7 cm in diameter, with a narrowing in the pancreatic head but with no mass seen. There were a few cystic lesions in the body of the pancreas and the pancreatic parenchyma showed evidence of chronic pancreatitis. The diagnosis of mixed-type intraductal papillary mucinous neoplasm was made (▶ **Fig. 2**). He was scheduled for pancreatoscopy to evaluate the pancreatic duct and biopsy any suspected malignant transformation. It was decided to perform overtube-assisted direct peroral pancreatoscopy with an ultraslim gastroscope because the pancreatic duct size was more than 1 cm and the image quality would be better than with a mother–baby scope system. Before the procedure, a hole was made in the overtube of a single-balloon enteroscope (ST-SB1; Olympus, Tokyo, Japan) at 70 cm from the distal tip of the overtube (▶ **Fig. 3**).



**Fig. 2** Endoscopic ultrasound (EUS) showing cystic lesions connected to the main pancreatic duct.



**Fig. 3** The ultraslim gastroscope and overtube.

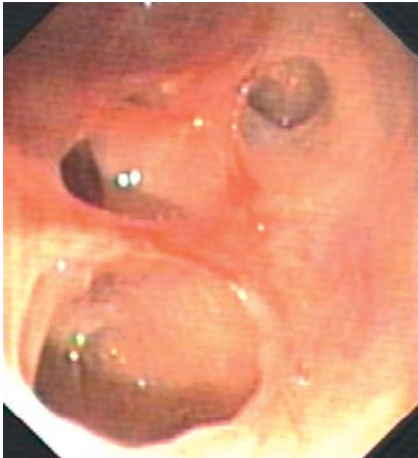
First, pancreatic duct cannulation and sphincterotomy were performed through a duodenoscope, and a 0.035-inch guide wire was left in the pancreatic duct. An ultraslim gastroscope (GIF-N260, scope diameter 5.9 mm, working channel 2.0 mm; Olympus) was then passed over the guide wire with the assistance of the overtube, without balloon inflation, to reduce stom-

ach looping and maintain a straight position for the scope (▶ **Fig. 4**). Once at the ampulla, the ultraslim gastroscope was advanced without the overtube further along the guide wire into the pancreatic duct.

Pancreatoscopy showed normal pancreatic duct mucosa; the stricture point was visualized, but there was no evidence of a



**Fig. 4** Radiographic image during pancreatotomy showing the position of the ultraslim gastroscope in the pancreatic duct.



**Fig. 5** Endoscopic view of the pancreatic duct showing normal mucosa and openings of the side branches.

mural nodule or mass (▶ **Fig. 5**). The patient tolerated the procedure well without complications. He was referred for a Whipple operation a few weeks later. In this case, in contrast to the techniques described by other endoscopists [1,2], we used the assistance of the overtube without balloon inflation. In our experience, direct peroral cholangiopancreatography with overtube assistance makes the procedure easier and shortens the ductal intubation time.

Endoscopy\_UCTN\_Code\_TTT\_1AR\_2AK

**Competing interests:** None

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DOI 10.1055/s-0030-1256436

Endoscopy 2011; 43: E279–E280

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