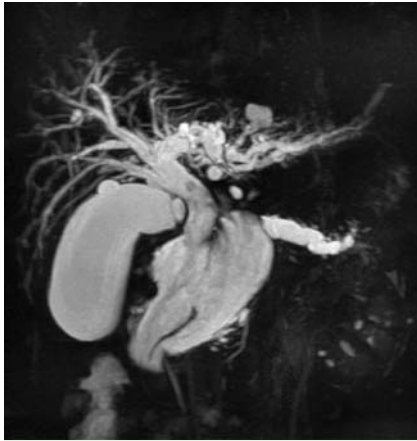


## Endoscopic biliary stenting successfully managed mucus obstructive jaundice in intraductal papillary mucinous carcinoma



**Fig. 1** Magnetic resonance cholangiopancreatography showed the formation of pancreato-biliary-duodenum fistula. Common bile duct, intrahepatic bile ducts and main pancreatic duct were all dilated.



**Fig. 2** Peroral cholangioscopy detected a papillary tumor and white sticky mucus.



**Fig. 3** Cholangiography through nasobiliary tube showed heavy blockage of biliary drainage due to a heavy amount of mucus, and confirmed the location for stent placement.



**Fig. 4** After the placement of a covered metallic stent, cholangiography through nasobiliary tube was repeated to make appropriate adjustments to stent positioning.

Intraductal papillary mucinous tumor (IPMT) of the pancreas is a relatively slow progressive disease. Of all the complications of IPMT, biliary tract obstruction is a life-threatening condition that develops to acute cholangitis and sepsis [1]. Some reports have mentioned the fistulae formation between pancreatic duct and biliary tract, stomach, duodenum,

and colon [2]. Endoscopic management of fistulae and jaundice has been reported to be inferior to surgical biliary bypass [3]. However, we report on a case of a pancreato-biliary-duodenum fistula caused by intraductal papillary mucinous carcinoma (IPMC) and successful endoscopic biliary stenting to facilitate biliary drainage.

A 72-year-old man complaining of severe jaundice (serum bilirubin 32.5 mg/dL; normal value 0.3–1.0 mg/dL) and involuntary weight loss presented at the emergency room. Contrast computed tomography scan showed a 10-cm cystic mass in the pancreatic head, and dilation of the main pancreatic duct and biliary tree. Magnetic resonance cholangiopancreatography showed the formation of a pancreato-biliary-duodenum fistula, suggesting that the common bile duct was obstructed with sticky mucus (● Fig. 1). Duodenoscopy showed a heavy amount of mucus springing from the papilla of Vater and the proximal descending portion of the duodenum. The papilla of Vater was widely opened with mucus secretion. Biopsies taken at peroral cholangioscopy (● Fig. 2) produced the pathological diagnosis of IPMC. Repeated cholangiography was performed to determine the appropriate position for a covered metallic stent (● Fig. 3). Taking into consideration the possibility of mucus entering the stent from the upper edge, the position of the stent (10 mm diameter, 80 mm length) was adjusted between outside of the papilla of Vater and the upper common bile duct; cholangiography then confirmed normal biliary drainage (● Fig. 4). Three days later, nasobiliary tube cholangiography showed that no mucus existed inside the stent. The patient was able to recover from cholangitis and jaundice (serum bilirubin 0.8 mg/dL) and was finally referred to surgery for tumor removal.

The covered metallic stent is an ideal stent because it blocks the flow of mucus into the stent. It is important that stent placement is adjusted carefully in the biliary tract by repeated cholangiography to observe for any mucus invasion into the stent.

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