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Digital single-operator cholangioscopy-guided endoluminal radiofrequency of an intraductal papillary mucinous neoplasia of the main pancreatic duct

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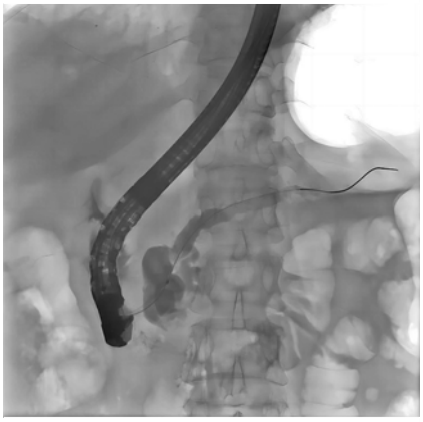
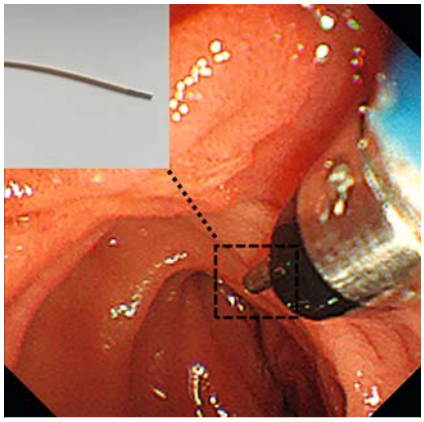
▶ **Fig. 1** Magnetic resonance cholangiography (MRCP) showed dilation of the main pancreatic duct and suspicious nodules in the main pancreatic duct.



▶ **Fig. 2** Endoscopic retrograde cholangiopancreatography (ERCP) showed dilation of the main pancreatic duct, which was the same as in the MRCP; however, there were no obvious filling defects.

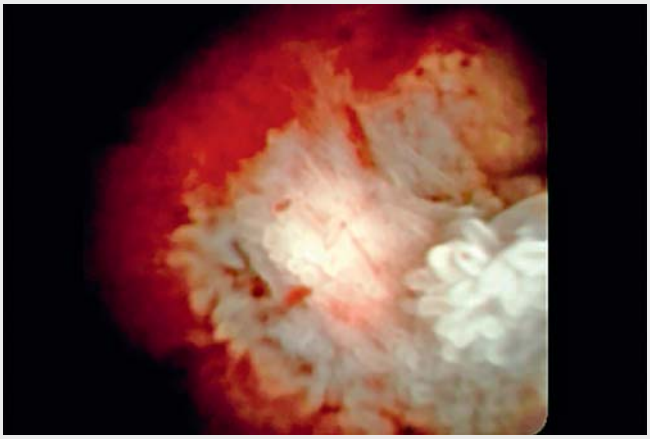


▶ **Fig. 3** A digital single-operator cholangioscopy (DSOC)-guided endoluminal radiofrequency catheter was inserted into the pancreatic duct. The working channel diameter of this catheter was 1 mm; the working channel length was 5 mm.

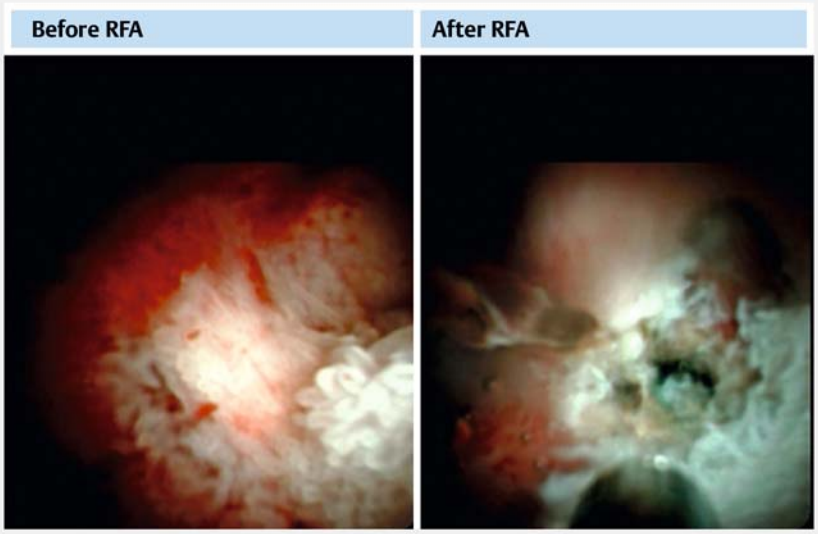
A 64-year-old woman with a history of recurrent acute pancreatitis was referred for treatment of intraductal papillary mucinous neoplasia (IPMN) that was found during a computed tomography (CT) scan in a local hospital. Magnetic resonance cholangiography (MRCP) presented dilation of the main pancreatic duct and suspicious nodules in the main pancreatic duct (▶ **Fig. 1**). Endoscopic retrograde cholangiopancreatography (ERCP) showed that the pancreatic duct was significantly dilatated and there seemed to be a cystic lesion at the head of the pancreas (▶ **Fig. 2**). Further evaluation of digital single-operator cholangioscopy (DSOC) found that the pancreatic duct was full of thick, mucinous fluid, and a few of papillary neoplasms were located at the junction of the main branch and branches of the pancreatic duct in the head of the pancreas (▶ **Video 1**). Tissues were obtained by biopsy forceps and histopathologically examined.

The patient and her relatives all refused to have her undergo radical surgery, and intraductal radiofrequency ablation (RFA) was offered. A novel radiofrequency operation electrode was inserted into the pancreatic duct over DSOC (▶ **Fig. 3**). DSOC-guided endoluminal radiofrequency was used to destroy the neoplasms under direct vision. After radiofrequency ablation, these neoplasms became necrotic (▶ **Fig. 4**). A 5-Fr stent was placed to prevent secondary stenosis (▶ **Fig. 5**). No adverse events occurred. Finally, pathology examination revealed IPMN with mild dysplasia. To date, the patient has not developed acute pancreatitis again after 3 months of follow-up.

RFA ablates neoplastic tissue via local thermal coagulative necrosis [1]. Previous studies have shown that endoscopic biliopancreatic RFA is a safe and



Video 1 Digital single-operator cholangioscopy (DSOC) was used to examine the pancreatic duct. Neoplastic tissues were biopsied and then destroyed by endoluminal radiofrequency under direct vision.



▶ **Fig. 4** The papillary neoplasms were found by DSOC. After radiofrequency ablation, these neoplasms became necrotic.

effective therapy [2–4]. However, these methods are guided by fluoroscopic images. The present case report is the first to report the use of a DSOC-guided endoluminal radiofrequency catheter. The effective outcome and uneventful recovery suggest that this technique could be offered with a curative intent in selected patients. Meanwhile, it could offer a novel, accurate, and microinvasive treatment method for pancreatic duct-related disorders.

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Competing interests

The authors declare that they have no conflict of interest.

The authors

Xin Deng[1], Jingwen Wang[2], Tong Mou[1], Long Pan[1], Bin Li[1], Chengyou Du[1], Qiao Wu[1]

1 Department of Hepatobiliary Surgery, The First Affiliated Hospital of Chongqing Medical University, Chongqing, China
2 Department of Neurology, The First Affiliated Hospital of Chongqing Medical University, Chongqing, China

Corresponding author

Qiao Wu, MD
Department of Hepatobiliary Surgery, The First Affiliated Hospital of Chongqing Medical University, No. 1 Yixueyuan Road, Yuzhong District, Chongqing 400016, China
wuqiao001268@163.com

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▶ **Fig. 5** A 5-Fr stent was placed to prevent secondary stenosis and post-ERCP pancreatitis.

Bibliography

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