

# The features of early intraductal papillary mucinous neoplasms and postoperative sutures under high-definition pancreatoscopy and EUS (with video)

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A 65-year-old man underwent distal pancreatectomy for the suspected IPMNs in the pancreas tail 2 years ago. The postoperative pathology result turned out to be IPMN with obvious moderate dysplasia lesion in the main pancreatic duct (PD), and the excision site was lesion-free. This patient was followed up with magnetic resonance cholangiopancreatography once every 6 months, and the remnant PD grew wider gradually [Figure 1]. Moreover, an obvious hyperechoic mass was found in the dilated PD close to the excision site under the latest EUS examination [Figure 2A].

Therefore, we performed endoscopic retrograde cholangiopancreatography and high-definition pancreatoscopy inspection (eyeMAX, 9F; Micro-Tech, Nanjing, China) for the patient. First, typical fish-eye sign was found on the main papilla [Figure 3], and pancreatography confirmed the obviously dilated proximal PD. Subsequently, the pancreatoscopy was inserted into the PD, and some postoperative sutures, which presented a hyperechoic mass under EUS, were found in the excision site of distal PD unexpectedly [Figure 2B]. Moreover, a lot of white translucent papillary lesions were found growing from the wall of PD or floating in the pancreatic liquid [Figure 4]. Finally, biopsy was conducted under pancreatoscopy, and the pathology result turned out to be papillary tissue covered with mucoid epithelium [Figure 5], consistent with IPMN.

Previous studies have confirmed that pancreatoscopy was helpful for the diagnosis of suspected IPMN.<sup>[1,2]</sup> However, the appearance of early IPMN under pancreatoscopy was not known to endoscopists. This study presented the features of early IPMN using a high-definition pancreatoscopy. On the other hand, this case also confirmed that early IPMN might not present obvious signs under EUS. Moreover, a hyperechoic mass in the PD under EUS turned out to be postoperative sutures under direct vision. Therefore, we presented this rare case to provide reference for endoscopists in the field of endoscopic retrograde cholangiopancreatography and EUS.

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## Video Legend

The features of early intraductal papillary mucinous neoplasms (IPMN) and postoperative sutures under high-definition pancreatoscopy and EUS.

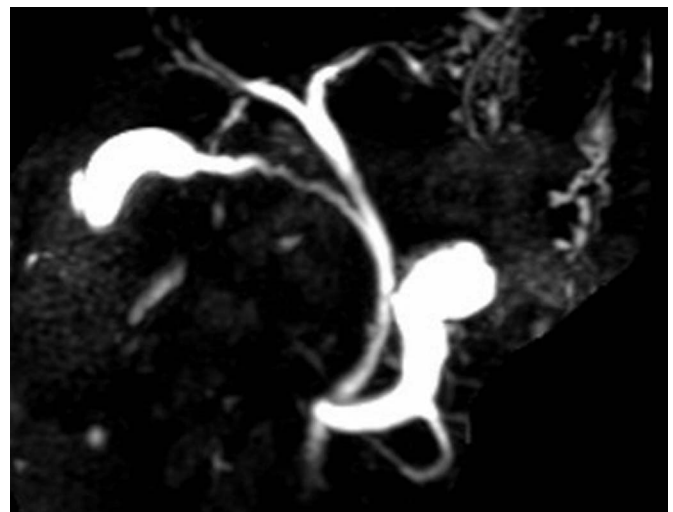
Videos are only available at the official website of the journal ([www.eusjournal.com](http://www.eusjournal.com)).

## Declaration of Patient Consent

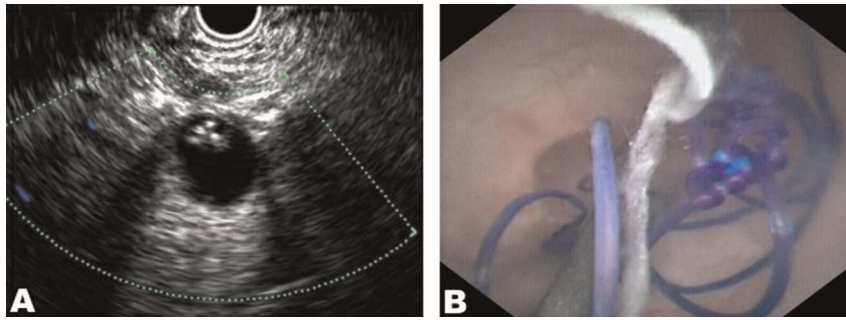
The authors certify that they have obtained all appropriate patient consent. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his names and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

## Author Contributions

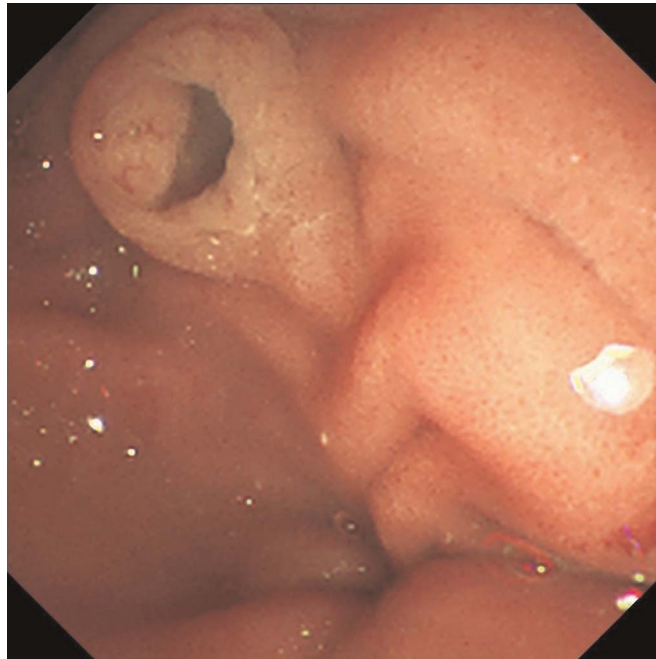
All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Wengang Zhang, Ningli Chai and Enqiang Linghu. The first draft of the manuscript was written by Wengang Zhang and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.



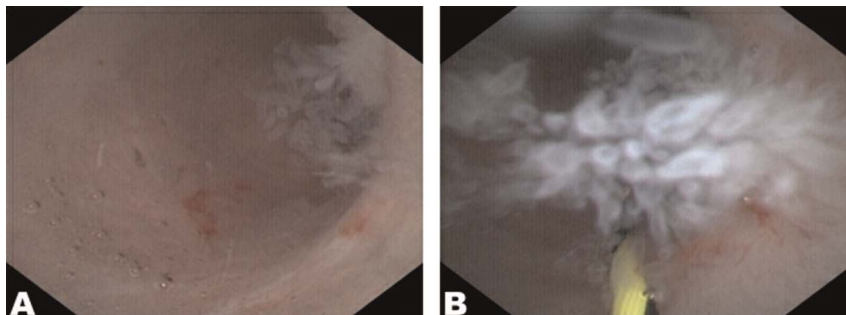
**Figure 1.** Postoperative MRCP showed that the remnant PD broadened obviously. MRCP, magnetic resonance cholangiopancreatography; PD, pancreatic duct.



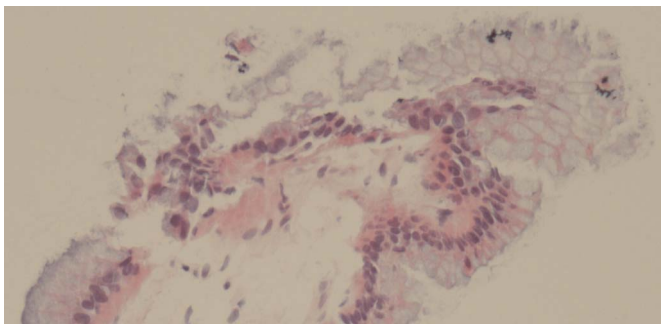
**Figure 2.** An obvious hyperechoic mass was found in the dilated PD close to the excision site under EUS (A), and some postoperative sutures were found in the same location under pancreatoscopy unexpectedly (B). PD, pancreatic duct.



**Figure 3.** Typical fish-eye sign was found on the main papilla under duodenoscopy.



**Figure 4.** A lot of white translucent papillary lesions were found growing from the wall of PD (A) or floating in the pancreatic liquid (B). PD, pancreatic duct.



**Figure 5.** The pathology result turned out to be papillary tissue covered with mucoid epithelium, consistent with IPMN. IPMN, intraductal papillary mucinous neoplasm.

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### Conflicts of Interest

The authors declare that they have no financial conflict of interest with regard to the content of this report. Enqiang Linghu is an Associate Editor of the journal. This article was subject to the journal's standard procedures, with peer review handled independently of the editor and his research group.

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