Article published online: 2023-11-14

Novel pancreatoscope improves diagnostic yield of visual findings for intraductal papillary mucinous neoplasms

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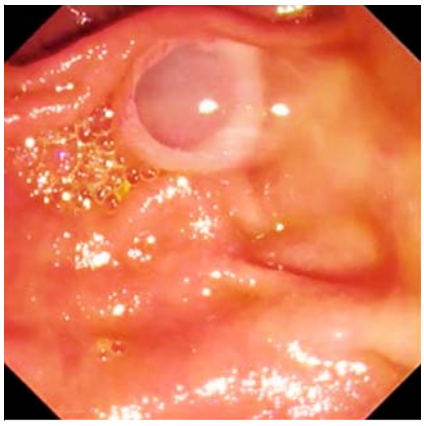
Intraductal papillary mucinous neoplasms (IPMNs) are characterized by mucin-producing neoplastic epithelium, and, as a result, pancreatic dilatation is observed [1]. Among IPMNs, main-duct IPMN (MD-IPMN) has high potential for malignancy, and surgical resection is recommended [2]. Preoperative diagnosis at the site of the mural nodule has clinical impact, allowing the necessary surgical margins to be determined. According to a previous study [3], pancreatoscopy has a higher detection rate than other diagnostic modalities. A single-operator pancreatoscope may be useful [4], but because the working channel is small, aspirating mucin may sometimes be a challenge, and therefore the diagnostic yield may be reduced because of poor visualization. Recently, a novel pancreatoscope has become available (eyeMax; Micro-Tech Co., Ltd., Nanjing, China) (▶ **Fig. 1**). The diameter of its working channel is 1.8 mm, and the dedicated biopsy forceps, with a cup length of 1.6 mm, allows large amounts of histological tissue to be obtained. Successful preoperative diagnosis for determination of the surgical margins of MD-IPMN using this novel pancreatoscope is described.

A 72-year-old man was admitted to our hospital with a MD-IPMN. No mural nodule could be detected on computed tomography or endoscopic ultrasonography. Therefore, pancreatoscopic evaluation was attempted. First, the duodenoscope was inserted, and mucin was observed flowing from the ampulla of Vater (▶ **Fig. 2**). Then, the novel pancreatoscope was inserted within the pancreatic duct. Because of the massive amount of mucin present, the findings on pancreatoscopy were initially poor (▶ **Fig. 3**). However, because the novel pancreatoscope has a large working channel, the mucin was easily aspirated (▶ **Fig. 4**), allowing a mural nodule to be detected at the body of the pancreas (▶ **Fig. 5**). Finally, forceps biopsy under pancreatoscopic guidance was performed (▶ **Video 1**). On histological examination, adenocarcinoma was diagnosed, and distal pancreatectomy was performed successfully.

In conclusion, this novel pancreatoscope may be useful in determining surgical margins in cases of MD-IPMN.

Endoscopy_UCTN_Code_CCL_1AZ_2AB

▶ **Fig. 1** Novel pancreatoscope (eyeMax; Micro-Tech Co., Ltd., Nanjing, China). The diameter of the working channel is 1.8 mm.



▶ **Fig. 2** Mucin is observed flowing from the ampulla of Vater.

▶ **Fig. 3** The pancreatoscopic view is obscured by mucin.

▶ **Fig. 4** Mucin is easily aspirated.

Competing interests

The authors declare that they have no conflict of interest.

▶ **Fig. 5** A mural nodule can now be clearly observed.

Video 1 Diagnostic pancreatoscopy in a patient with a main-duct intraductal papillary mucinous neoplasm. The pancreatoscope is inserted. The view is obscured by mucin, but the mucin is easily aspirated. A mural nodule is then clearly observed. Forceps biopsy is successfully performed.

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Endoscopy 2023; 55: E1178–E1179
DOI 10.1055/a-2197-8949
ISSN 0013-726X

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany