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Ultraslim Endoscopy for the Diagnosis of Pancreatic Intraductal Papillary Mucinous Neoplasm

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Following 3 years of repeated upper abdominal pain, which worsened over 3 days, an 83-year-old female patient was admitted to our hospital. She had previously been hospitalized twice for acute pancreatitis within the same 3-year period. Magnetic resonance imaging (MRI) and magnetic resonance cholangiopancreatography (MRCP) revealed a clumpy mixed-signal mass measuring 56×40 mm in the uncinate process of the pancreas, which communicated with the pancreatic duct (►**Fig. 1**). Subsequent endoscopic retrograde cholangiopancreatography (ERCP) identified a dilated main pancreatic duct (MPD) up to 13.5 mm with a filling defect at the pancreatic head (►**Fig. 2A**), while the major papilla appeared normal (►**Fig. 2B**). Following successful papillary balloon dilatation with a 10-mm-balloon catheter, an ultraslim upper endoscope (GIF-XP290N, Olympus, Tokyo, Japan; 5.8-mm outer diameter, 2.2-mm working channel) was manually inserted through the major papilla and into the pancreatic duct at the pancreatic head utilizing the freehand technique.[1] Within the dilated MPD near the pancreatic head, a papillary tumor exhibiting villous and fish-egg-like protrusions was observed (►**Fig. 3A**). A biopsy was performed under direct visual guidance (►**Fig. 3B**),

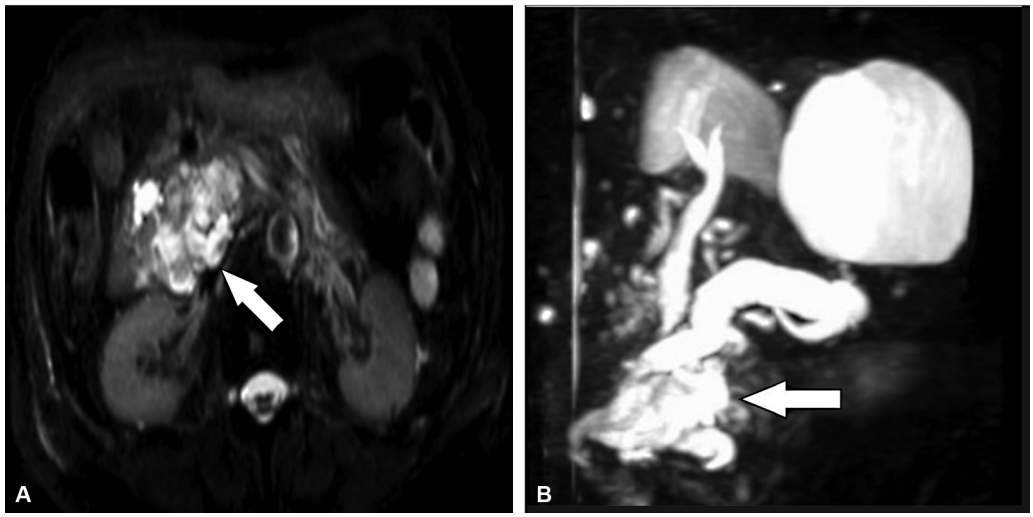

Fig. 1 (**A**, **B**) Abdominal magnetic resonance (MR) + magnetic resonance cholangiopancreatography (MRCP) image showed a mass (*white arrows*) communicating with the main pancreatic duct (MPD) in the uncinate process of the pancreas.

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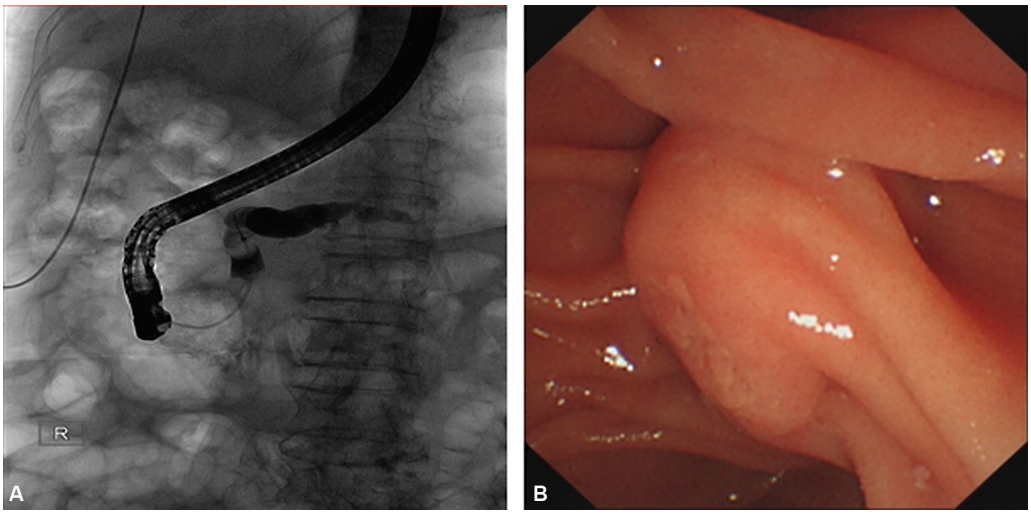

Fig. 2 (**A**) Endoscopic retrograde cholangiopancreatography (ERCP) showed dilated main pancreatic duct (MPD) with a filling defect inside the pancreatic duct at the pancreatic head. (**B**) The major papilla appeared normal.

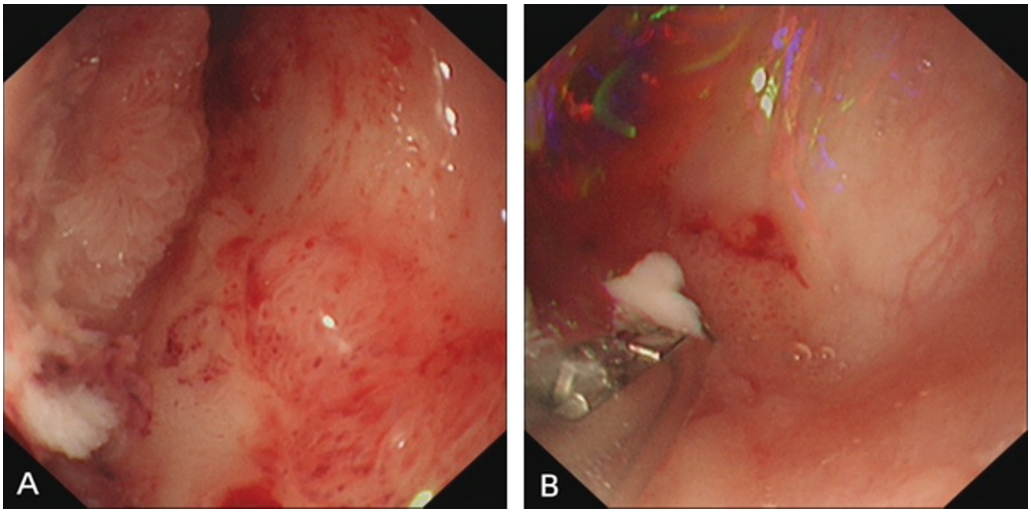

Fig. 3 (**A**) Visual findings on direct peroral pancreatoscopy were a papillary tumor with villous and fish-egg-like protrusions. (**B**) A targeted biopsy was performed under direct vision.

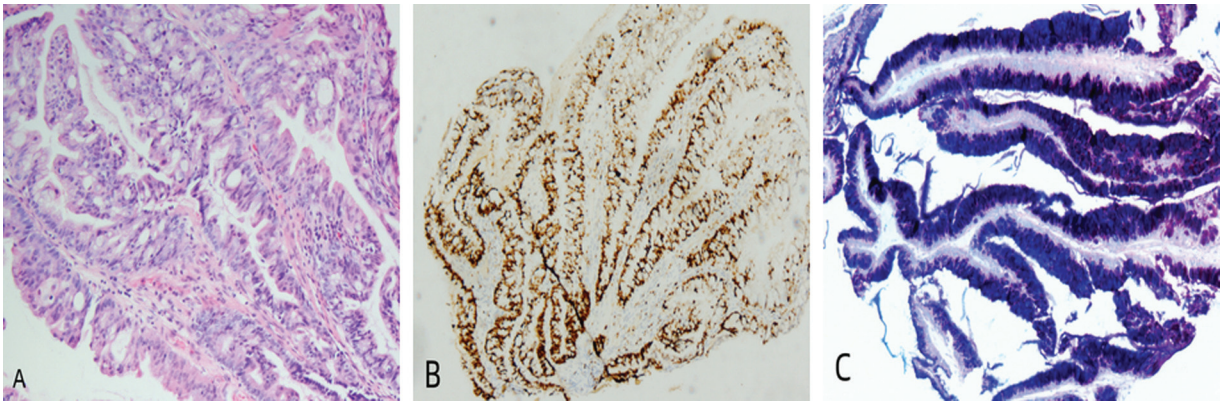

Fig. 4 (**A**) H&E ×100 histopathology indicated intraductal papillary mucinous neoplasm with high-grade dysplasia. H&E, hematoxylin and eosin. (**B**) High Ki-67 proliferation index (60%) (Ki-67, ×50). (**C**) Special stains indicated intracellular staining for mucin (AB-PAS, ×50). AB-PAS Alcian blue-periodic acid–Schiff.

revealing a histopathological examination (►**Fig. 4A**) and immunohistochemistry (►**Fig. 4B, C**) consistent with intraductal papillary mucinous neoplasm (IPMN) with high-grade dysplasia. The main duct IPMN (MD-IPMN) of the pancreatic

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head was the final diagnosis, based on imaging, clinical, and histopathology results. Unfortunately, the patient passed away at home 1 year after diagnosis.

A more detailed pathological evaluation has been required recently due to the increasing complexity of the clinical management of IPMNs. Peroral pancreatoscopy (POP) is commonly used to acquire diseased tissue from pancreatic IPMNs and determine their precise extent before surgery.[2] POP can be performed using a dual- or single-operator mother–baby peroral pancreatoscope or directly with an ultraslim endoscope.[1]

Direct POP with an ultraslim endoscope has two distinct advantages over the mother-baby POP: first, it offers better intraductal visualization; second, a 2.2-mm working channel enables the insertion of larger biopsy forceps to obtain larger tissue samples. Consequently, MD-IPMN can be diagnosed with an ultraslim upper endoscope once the major pancreatic duct is sufficiently dilated.

Funding
None.

Conflict of Interest
None declared.

References

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