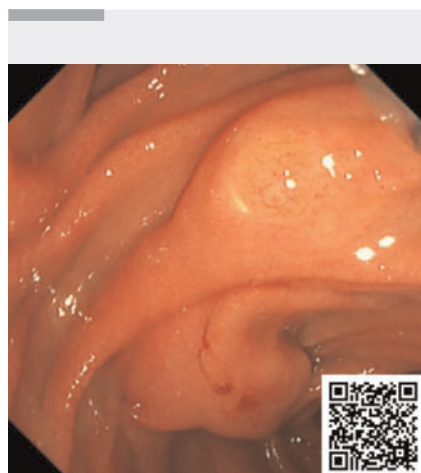
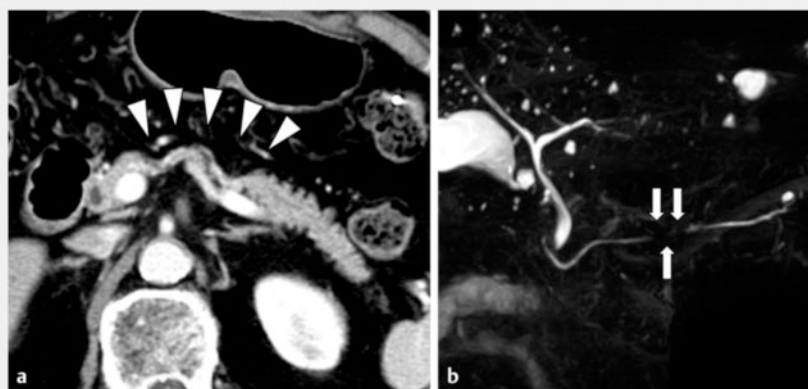


# Pancreatic carcinoma in situ with focal pancreatic parenchymal atrophy diagnosis using serial pancreatic juice aspiration cytological examination via the minor papilla



**▶ Video 1** NPD tube was successfully placed on the MPD via the minor papilla for serial pancreatic juice aspiration cytologic examination (instead of the standard main papilla).



**▶ Fig. 1** CT and MRCP images. **a** A focal pancreatic parenchymal atrophy, 30 mm in size, is present in the pancreatic body. The pancreatic mass is not visible in the CT scan (arrowhead). **b** MRCP showing the main pancreatic duct, with a slight stricture of the pancreatic body (arrow). Abbreviations: CT, computed tomography; MRCP, magnetic resonance cholangio-pancreatography.

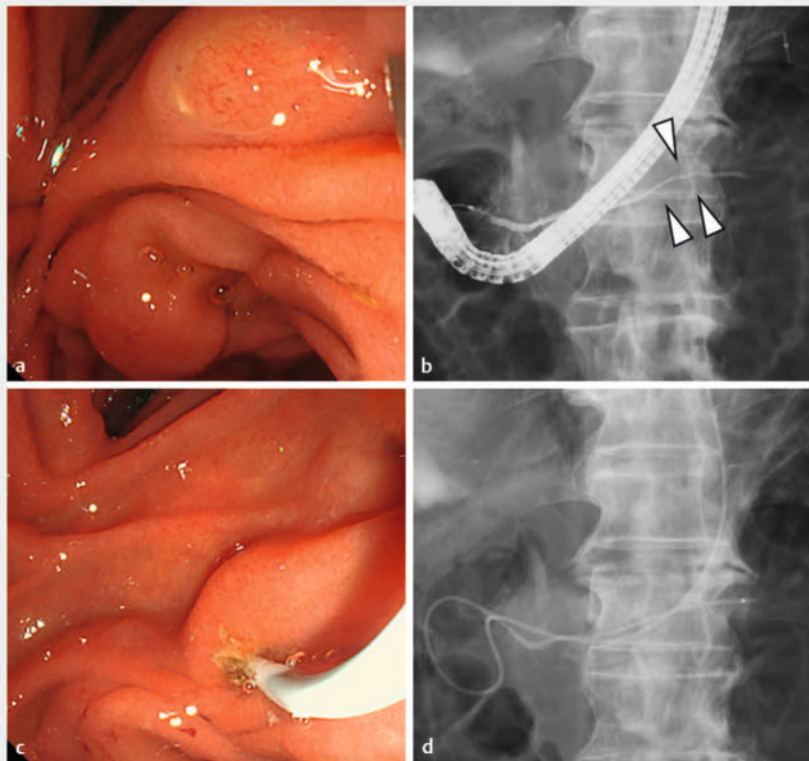
To improve pancreatic ductal adenocarcinoma prognosis, early diagnosis is crucial. Assessment by serial pancreatic juice aspiration cytologic examination (SPACE) after placing a naso-pancreatic drainage (NPD) tube has proved effective (including pancreatic carcinomas in situ [CIS]) [1–3]. This procedure is applicable for patients with indirect pancreatic carcinoma indications, such as dilation of the main pancreatic duct (MPD) or focal pancreatic parenchymal atrophy (FPPA). The standard practice is placing an NPD tube in the MPD through the main papilla; yet, this is not always possible. We previously demonstrated the feasibility of endoscopic retrograde pancreatography (ERP) for pancreatic divisum via the minor papilla

(MP) [4]. Here, we report a case of CIS with FPPA diagnosed using SPACE via the MP (▶ **Video 1**).

An 81-year-old man was referred to our department upon FPPA detection on computed tomography performed for pulmonary disease assessment. Multiple standard imaging modalities failed to reveal pancreatic mass (▶ **Fig. 1**). Thus, CIS was suspected, and SPACE was planned. First, major papilla cannulation for MPD was attempted; however, cannulation was unsuccessful. Thereon, the orifice of MP could be detected and a guidewire was advanced up to the MPD via MP. Fluorography revealed a slight stenosis of the MPD, consistent with FPPA. As deep cannulation was difficult, MP sphincterotomy was performed using a needle-knife (KD-10Q-1; Olympus Medical Systems)

positioned adjacent to a previously inserted guidewire. Finally, a 4Fr NPD tube was successfully placed on the MPD (▶ **Fig. 2**), and SPACE was fully performed. The cytology assessed from the SPACE revealed adenocarcinoma and distal pancreatectomy with splenectomy was subsequently performed. The final histopathological diagnosis was CIS of the pancreatic duct of the pancreatic body, pTis, pN0, sM0, stage 0, with R0 resection. SPACE via NPD through the MP represents a valuable alternative for diagnosing CIS when NPD tube placement via the major papilla is difficult.

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► **Fig. 2** **a** The orifice of MP was detected. **b** Endoscopic retrograde pancreatography via MP shows stricture of the MPD of the pancreatic body (arrow). **c, d** A 4-Fr endoscopic naso-pancreatic drainage tube was placed in the MPD via MP. Abbreviations: MP, minor papilla; MPD, main pancreatic duct.


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## Conflict of Interest

The authors declare that they have no conflict of interest.

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