

EUS-guided pancreaticojejunostomy under gel immersion for pancreaticojejunal anastomotic stricture (with video)

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Pancreaticojejunal anastomotic stricture (PJAS) is a major late complication following pancreaticoduodenectomy.^[1] EUS-guided pancreatic duct drainage is performed for PJAS as salvage technique after endoscopic retrograde cholangiopancreatography failure, but may be complicated by pancreatic juice leakage.^[2] EUS-guided pancreaticojejunostomy (EUS-PJS) using a forward-viewing echoendoscope is a desirable option for PJAS owing to less concern of pancreatic juice leakage and expectation of the permanent drainage with a stent-free status if punctured accurately through the anastomosis.^[3] Immersion of clear gel (VISCOCLEAR; Otsuka Pharmaceutical Factory, Tokyo, Japan) has been used for securing the visual field of endoscopic procedures^[4] and preventing rapid runoff at an appropriate viscosity, which is expected to be proposed for EUS-guided intervention.

We encountered a 65-year-old man with PJAS after pancreaticoduodenectomy for an intraductal papillary mucinous neoplasm. Magnetic resonance cholangiopancreatography showed diffuse main pancreatic duct (MPD) dilation [Figure 1]. We first attempted endoscopic retrograde cholangiopancreatography using a colonoscope, but MPD cannulation failed due to severe scarring of the anastomosis [Figure 2]. EUS-PJS was used next using a forward-viewing echoendoscope (TGF-UC260J; Olympus, Tokyo, Japan) advanced to the anastomosis site [Video 1]. Although EUS could clearly visualize the MPD, the precise transanastomotic route could not be confirmed because of tight contact between the scope and intestinal tract, with a narrow lumen by air suction [Figure 3]. In this situation, EUS-PJS possibly leads to transpancreatic parenchyma access without passing through the anastomosis, which may increase the risk of pancreatic juice leakage [Figure 4]. Therefore, we performed EUS under gel immersion, which created a space for EUS and endoscopic visualization to secure reliable transanastomotic access with the adjustment of scope position and needle trajectory [Figure 5]. The MPD was punctured through the anastomosis with a 19-gauge needle, and a 0.025-inch guidewire was inserted. We dilated the anastomosis using a spiral

drill dilator (Tornus ES; Asahi Intec, Aichi, Japan) and balloon catheter (6 mm REN; Kaneka Medical Products, Osaka, Japan). Finally, a 6-mm fully covered metallic stent (Hanarostent Biliary Full Cover Benefit; Boston Scientific, Boston, MA) was placed to maintain the fistula. No postprocedural complications were recorded. EUS-PJS under gel immersion provided accurate transanastomotic access, which may prevent pancreatic juice leakage and enable permanent drainage with a stent-free status [Figure 6].

Video Legend

EUS-guided pancreaticojejunostomy under gel immersion enables accurate transanastomotic access for treating pancreaticojejunal anastomotic stricture.

Videos are only available at the official website of the journal (www.eusjournal.com).

Conflict of Interest

The authors declare that they have no financial conflict of interest with regard to the content of this report.

Informed Consent

The authors certify that they have obtained all appropriate patient consent forms. 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 name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

The authors understand the importance of adhering to ethical standards in research involving human subjects and acknowledge their responsibility to ensure the protection and well-being of the patients involved.

Author Contributions

Study concept and design: Yasuhiro Kuraishi, Kazuo Hara; acquisition of data: Yasuhiro Kuraishi, Shin Haba, Takamichi Kuwahara, Nozomi Okuno; analysis and interpretation of data: Yasuhiro Kuraishi, Kazuo Hara; drafting of the manuscript: Yasuhiro Kuraishi, Kazuo Hara; critical revision of the manuscript for important intellectual content: Kazuo Hara, technical, or material support: Shin Haba, Takamichi Kuwahara, Nozomi Okuno; study supervision: Kazuo Hara.

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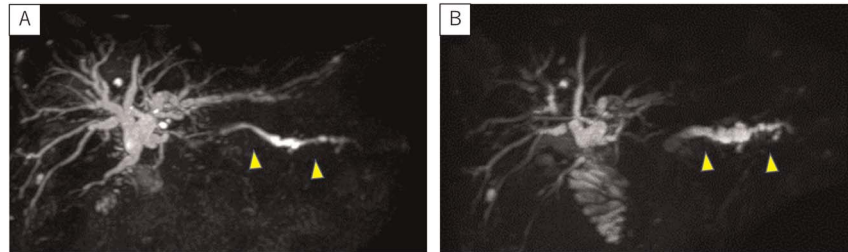


Figure 1. A, MRCP 9 months after surgery detected no dilation of the remnant pancreatic duct (arrowheads). B, MRCP 22 months after surgery showed worsened main pancreatic duct dilation (arrowheads). MRCP: Magnetic resonance cholangiopancreatography.

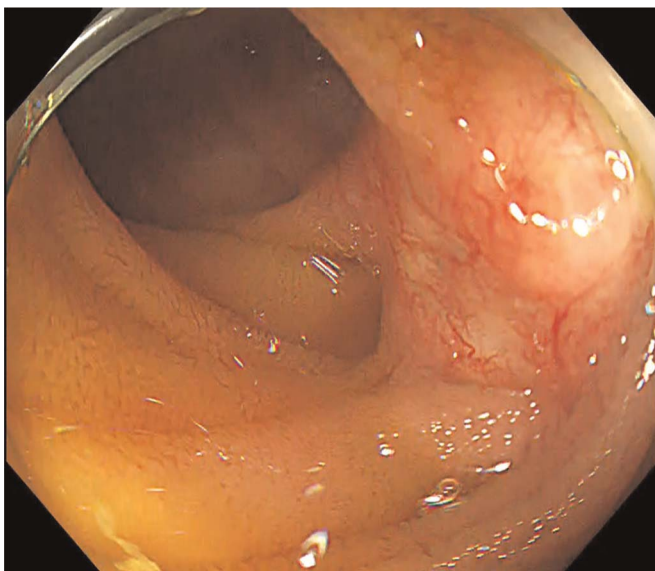


Figure 2. Severe scarring was evident at the pancreaticojejunal anastomosis site.

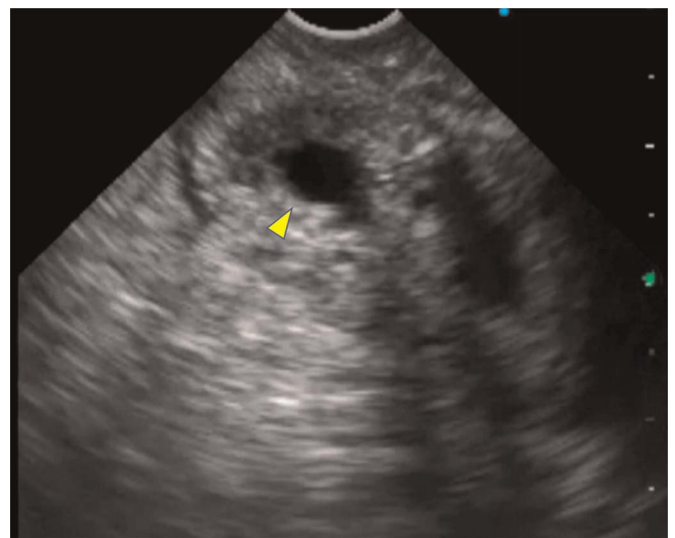


Figure 3. Before gel immersion, forward-viewing EUS could clearly visualize the main pancreatic duct (arrowhead), but a precise transanastomotic route could not be confirmed because of tight contact between the scope and intestinal tract, with a narrow lumen by air suction.

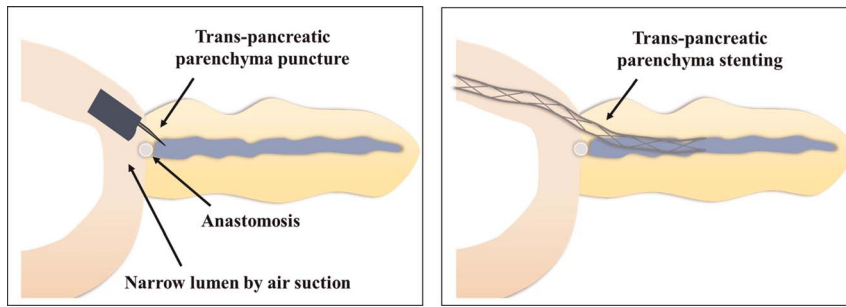


Figure 4. Schematic diagram of EUS-guided pancreaticojejunostomy. The conventional technique possibly leads to transpancreatic parenchyma access without passing through the anastomosis, which may increase the risk of pancreatic juice leakage.

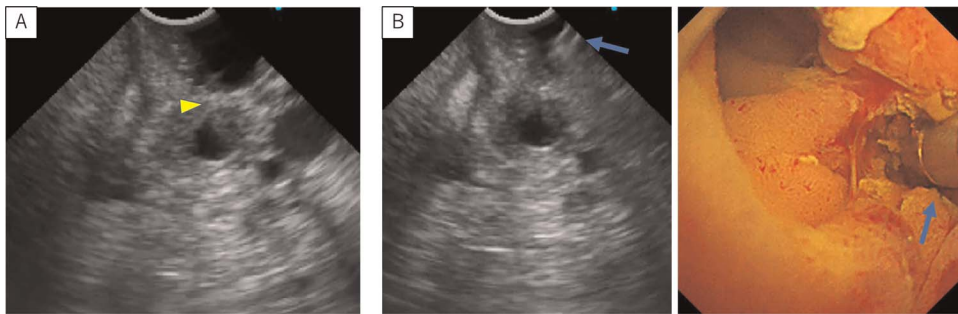


Figure 5. A, EUS under gel immersion could visualize the transanastomotic route (arrowhead). B, The needle sheath (arrows) was slightly advanced. EUS and endoscopic imaging indicated that the needle trajectory was toward the pancreatic duct through the anastomosis with a good visual field.

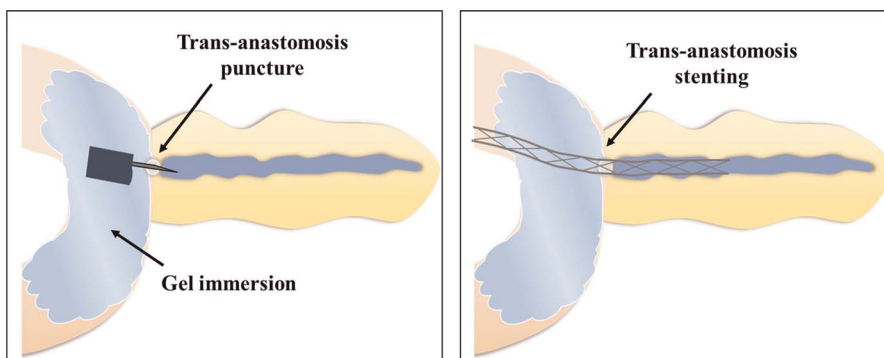


Figure 6. Schematic diagram of EUS-guided pancreaticojejunostomy under gel immersion. This technique creates space for EUS and endoscopic visualization to secure reliable transanastomotic access, which may prevent pancreatic juice leakage and enable permanent drainage with a stent-free status.