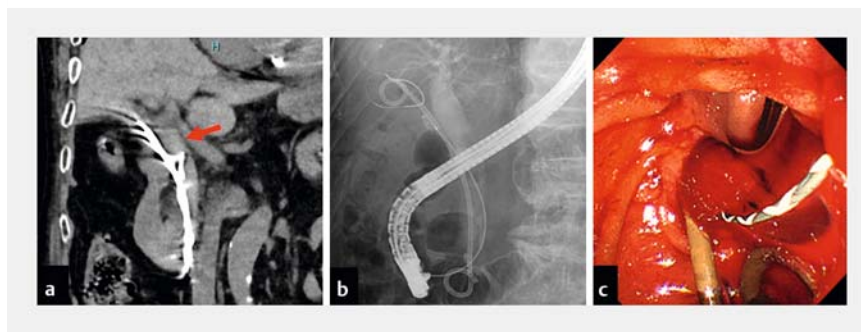


Ruptured cystic artery pseudoaneurysm after long-term transpapillary placement of a gallbladder stent for acute cholecystitis

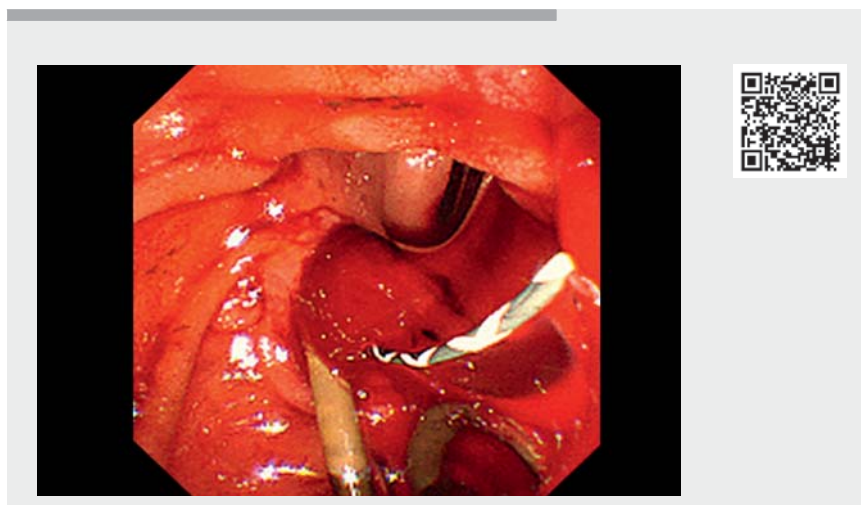
OPEN
ACCESS

Endoscopic transpapillary gallbladder drainage (ETGBD), including endoscopic gallbladder stenting (EGBS), has utility in the management of acute cholecystitis in patients considered to be high risk candidates for surgery [1]. A recent meta-analysis reported that the pooled rate of cholecystitis recurrence was 4.6% following ETGBD in patients with acute cholecystitis [2]. Long-term biliary drainage via EGBS is often performed to prevent the recurrence of cholecystitis in patients with contraindications to cholecystectomy.

An 88-year-old man was admitted with acute cholangitis after undergoing EGBS due to an episode of acute cholecystitis 8 months prior with placement of a 7-Fr double-pigtail stent (Through & Pass double pigtail stent; Gadelius Medical, Japan) as he was considered a high risk candidate for cholecystectomy. Scheduled stent exchanges using a similar stent had been performed at 3-month intervals after initial EGBS to prevent the recurrence of cholecystitis. Computed tomography demonstrated bleeding from the biliary tract (► **Fig. 1 a**). Hemobilia was observed during endoscopic retrograde cholangiopancreatography (ERCP) and blood clots were endoscopically removed from the bile duct. Insertion of a 0.025-inch guidewire (VisiGlide 2 with angled tip; Olympus Medical Systems, Tokyo, Japan) into the gallbladder resulted in blood flow from the ampulla of Vater (► **Fig. 1 b, c**; ► **Video 1**). The ERCP procedure was therefore abandoned and a ruptured cystic artery pseudoaneurysm immediately adjacent to the stent biliary stent was identified on contrast-enhanced computed tomography (► **Fig. 2 a, b**). Transcatheter arterial coil embolization was successfully performed to control bleeding from the ruptured cystic artery pseudoaneurysm without complications. Open cholecystectomy was performed 2 weeks after coil embolization.



► **Fig. 1** Radiologic and endoscopic findings of hemobilia. **a** Opacification of the bile duct on abdominal computed tomography indicative of hemobilia (red arrow). **b, c** Blood flow from the ampulla of Vater was observed after insertion of a 0.025-inch guidewire into the gallbladder.



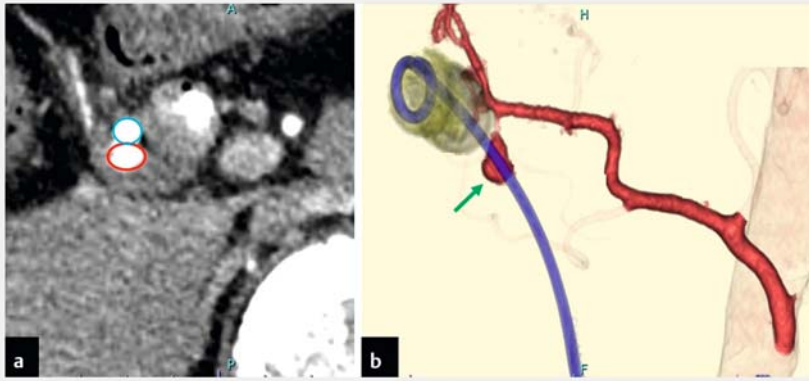
► **Video 1** Ruptured cystic artery pseudoaneurysm after long-term endoscopic transpapillary gallbladder stent placement in a patient with acute cholecystitis.

This is the first report of a ruptured cystic artery pseudoaneurysm associated with EGBS which we strongly suspect was due to long-term compression of the cystic artery leading to formation of a cystic artery pseudoaneurysm. Our findings highlight the risk of cystic artery pseudoaneurysm formation in patients with long-term transpapillary placement of a gallbladder stent, even when scheduled stent exchanges are performed.

Endoscopy_UCTN_Code_CPL_1AK_2AI

Acknowledgments

We would like to thank Drs. Yoichi Kato, Takane Sawada, and Akinori Tsuji for imaging diagnosis and Drs. Atsushi Fujimoto, Kana Oomoto, and Sachio Yokoyama for management of the patient at Kumamoto City Hospital.



► **Fig. 2** Identification of a cystic artery pseudoaneurysm on computed tomography. **a** Contrast-enhanced computed tomography demonstrating a cystic artery pseudoaneurysm (delineated in red) parallel to the gallbladder stent (delineated in blue). **b** Abdominal CT angiography demonstrating a cystic artery pseudoaneurysm parallel to the gallbladder stent (green arrow).

Competing interests

The authors declare that they have no conflict of interest.

The authors

Hirokazu Saito¹, Yoshitaka Kadowaki¹, Taishi Yamane², Ryuma Tokunaga², Yoshiaki Ikuta², Joji Urata³, Shuji Tada¹

- 1 Department of Gastroenterology, Kumamoto City Hospital, Kumamoto, Japan
- 2 Department of Gastroenterological Surgery, Kumamoto City Hospital, Kumamoto, Japan
- 3 Department of Radiology, Kumamoto City Hospital, Kumamoto, Japan

Corresponding author

Hirokazu Saito, MD

Department of Gastroenterology,
Kumamoto City Hospital, 4-1-60,
Higashimachi, Higashi-ku, Kumamoto City,
Kumamoto, 862-8505, Japan
arnestwest@yahoo.co.jp
Fax: +81-96-365-1712

References

- [1] Mori Y, Itoi T, Baron TH et al. Tokyo Guidelines 2018: management strategies for gallbladder drainage in patients with acute cholecystitis (with videos). *J Hepatobiliary Pancreat Sci* 2018; 25: 87–95
- [2] Mohan BP, Khan SR, Trakroo S et al. Endoscopic ultrasound-guided gallbladder drainage, transpapillary drainage, or percutaneous drainage in high risk acute cholecystitis patients: a systematic review and comparative meta-analysis. *Endoscopy* 2020; 52: 96–106

Bibliography

Endoscopy 2023; 55: E448–E449

DOI 10.1055/a-2018-3961

ISSN 0013-726X

© 2023. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

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



ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



Endoscopy E-Videos is an open access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online. Processing charges apply (currently EUR 375), discounts and waivers acc. to HINARI are available.

This section has its own submission website at
<https://mc.manuscriptcentral.com/e-videos>