**Name of Journal:** *World Journal of Gastroenterology*

**Manuscript NO:** 89424

**Manuscript Type:** LETTER TO THE EDITOR

**Endoscopic intramural cystogastrostomy for treatment of peripancreatic fluid collection: A viewpoint from a surgeon**

Ker CG. Endoscopic intramural cystogastrostomy

Chen-Guo Ker

**Chen-Guo Ker,** Department ofGeneral Surgery, E-Da Hospital, I-Shou University, Kaohsiung 824, Taiwan

**Author contributions:** Ker CG performed literature search and evaluation, and manuscript preparation.

**Corresponding author: Chen-Guo Ker, FACS, MD, PhD, Professor of Surgery,** Department ofGeneral Surgery, E-Da Hospital, I-Shou University, No. 1 Yi-Da Rd, Yanchao District, Kaohsiung 824, Taiwan. ed112739@edah.org.tw

**Received:** October 31, 2023

**Revised:** December 8, 2023

**Accepted:** January 16, 2024

**Published online:** February 14, 2024

**Abstract**

Percutaneous or endoscopic drainage is the initial choice for the treatment of peripancreatic fluid collection in symptomatic patients. Endoscopic transgastric fenestration (ETGF) was first reported for the management of pancreatic pseudocysts of 20 patients in 2008. From a surgeon’s viewpoint, ETGF is a similar procedure to cystogastrostomy in that they both produce a wide outlet orifice for the drainage of fluid and necrotic debris. ETGF can be performed at least 4 wk after the initial onset of acute pancreatitis and it has a high priority over the surgical approach. However, the surgical approach usually has a better success rate because surgical cystogastrostomy has a wider outlet (> 6 cm *vs* 2 cm) than ETGF. However, percutaneous or endoscopic drainage, ETGF, and surgical approach offer various treatment options for peripancreatic fluid collection patients based on their conditions.

**Key Words:** Pancreatitis; Pancreatic pseudocyst; Endoscopic cystogastrostomy; Surgical cystogastrostomy; Peripancreatic fluid collection; Fenestration for pancreatic cyst

**©The** **Author(s) 2024.** Published by Baishideng Publishing Group Inc. All rights reserved.

**Citation:** Ker CG. Endoscopic intramural cystogastrostomy for treatment of peripancreatic fluid collection: A viewpoint from a surgeon. *World J Gastroenterol* 2024; 30(6): 610-613

**URL:** https://www.wjgnet.com/1007-9327/full/v30/i6/610.htm

**DOI:** https://dx.doi.org/10.3748/wjg.v30.i6.610

**Core Tip:** Endoscopic transgastric fenestration (ETGF) actually shares the same indications and procedures as surgical cystogastrostomy for the management of pancreatic pseudocysts. From a surgeon’s viewpoint, both ETGF and surgical cystogastrostomy are used for producing a wide outlet orifice for the drainage. Endoscopic ultrasound-guided drainage and necrosectomy or ETGF has a high priority over the surgical approach. However, the surgical approach usually has a better success rate because surgical cystogastrostomy has a wider outlet than ETGF.

**TO THE EDITOR**

A comment was raised after reading the article titled “Endoscopic transgastric fenestration *vs* percutaneous drainage for management of (peri) pancreatic fluid collections adjacent to gastric wall (with video)” by Zhang *et al*[1]. The clinical consequences of local complications in the natural course of acute pancreatitis are acute peripancreatic fluid collection (PPFC), pancreatic pseudocyst (PPC), acute necrotic collection (ANC), and walled-off necrosis (WON)[2,3]. Acute PPFC tends to be poorly walled-off and can leak into the retroperitoneum, peritoneal cavity, or a third space. Therefore, early interventions for these local complications are not recommended according to Japanese or American guidelines[4,5]. If percutaneous or endoscopic interventions for these local complications are necessary, it is necessary to wait until well-encapsulated formation, such as PPC or WON, is achieved. This condition usually occurs more than 4 wk after the onset of interstitial edematous pancreatitis to mature[3].

Percutaneous drainage (PD) or the endoscopic approach is the initial choice for the treatment of symptomatic patients[6]. However, most cystic spaces contain solid debris, which can occlude the tube, leading to impaired drainage. Hence, percutaneous or transmural drainage alone is often inadequate, and additional endoscopic or surgical necrosectomy is frequently required[7-10]. Surgical drainage is reserved only when PD is not successful[11]. Bleeding during management with endoscopic necrosectomy for ANC or WON may occur and result in catastrophic complications. Therefore, it is better to perform this procedure at referral centers with surgical backup[5].

Zhang *et al*[1] compared endoscopic transgastric fenestration (ETGF) with PD for the management of PPFC, and Liu *et al*[12] conducted the first ETGF in 2015. Actually, Varadarajulu *et al*[7] reported endoscopic ultrasound (EUS)-guided cystogastrostomy (same procedure as ETGF) for the management of PPS of 20 patients in 2008. From a surgeon’s viewpoint, ETGF performed by an endoscopist is a similar procedure to cystogastrostomy performed by a surgeon, and both are used for producing a wide outlet orifice for the drainage of fluid and necrotic debris between the cyst and stomach. Therefore, ETGF can be performed only under the condition of stringent adhesion between the posterior gastric and cystic walls. Additionally, ETGF has the same indications as surgical cystogastrostomy. Technically, the operator should first use EUS guidance to demonstrate presumably a resection line on the gastric wall at the site of maximal prominence of the PPC into the stomach to select the thinnest wall, thus minimizing adverse events.

As a novel development, therapeutic endoscopy can extend the dissection skills to perform ETGF to drain and clean the PPFC with well encapsulation where possible. What is already known about ETGF for PPC or WON is accepted as a minimally invasive alternative to the surgical approach. EUS guidance reduces the risk of perforation and hemorrhage. The probability of post-procedure complications and outcomes differs among the various techniques (Table 1). Varadarajulu *et al*[7] conducted a retrospective study to compare patients with uncomplicated PPC managed by surgical or EUS-guided cystogastrostomy. The results showed no significant differences in treatment success rates, complications, or re-interventions. Furthermore, costs were lower, and the post-procedure length of hospital stay was shorter for EUS-guided cystogastrostomy[7].

Generally, EUS-guided drainage and necrosectomy or ETGF has a high priority over the surgical approach. However, the surgical approach usually has a better success rate because surgical cystogastrostomy has a wider outlet (> 6 cm *vs* 2 cm) than ETGF[13,14]. Either ETGF or operative cystogastrostomy is indicated in cases where: (1) The cystic wall is well matured; and (2) the cyst is large enough to have a severe adhesion area with the gastric posterior wall instead of the early phase of PPFC without being walled-off. However, PD, endoscopic drainage, ETGF, and surgical approach offer various treatment options that can be tailored to the needs of individual patients with PPFC and the facilities of institutions.

**REFERENCES**

1 **Zhang HM**, Ke HT, Ahmed MR, Li YJ, Nabi G, Li MH, Zhang JY, Liu D, Zhao LX, Liu BR. Endoscopic transgastric fenestration *versus* percutaneous drainage for management of (peri)pancreatic fluid collections adjacent to gastric wall (with video). *World J Gastroenterol* 2023; **29**: 5557-5565 [PMID: 37970477 DOI: 10.3748/wjg.v29.i40.5557]

2 **Banks PA**, Bollen TL, Dervenis C, Gooszen HG, Johnson CD, Sarr MG, Tsiotos GG, Vege SS; Acute Pancreatitis Classification Working Group. Classification of acute pancreatitis--2012: revision of the Atlanta classification and definitions by international consensus. *Gut* 2013; **62**: 102-111 [PMID: 23100216 DOI: 10.1136/gutjnl-2012-302779]

3 **Zerem E**, Kurtcehajic A, Kunosić S, Zerem Malkočević D, Zerem O. Current trends in acute pancreatitis: Diagnostic and therapeutic challenges. *World J Gastroenterol* 2023; **29**: 2747-2763 [PMID: 37274068 DOI: 10.3748/wjg.v29.i18.2747]

4 **Yokoe M**, Takada T, Mayumi T, Yoshida M, Isaji S, Wada K, Itoi T, Sata N, Gabata T, Igarashi H, Kataoka K, Hirota M, Kadoya M, Kitamura N, Kimura Y, Kiriyama S, Shirai K, Hattori T, Takeda K, Takeyama Y, Hirota M, Sekimoto M, Shikata S, Arata S, Hirata K. Japanese guidelines for the management of acute pancreatitis: Japanese Guidelines 2015. *J Hepatobiliary Pancreat Sci* 2015; **22**: 405-432 [PMID: 25973947 DOI: 10.1002/jhbp.259]

5 **Baron TH**, DiMaio CJ, Wang AY, Morgan KA. American Gastroenterological Association Clinical Practice Update: Management of Pancreatic Necrosis. *Gastroenterology* 2020; **158**: 67-75.e1 [PMID: 31479658 DOI: 10.1053/j.gastro.2019.07.064]

6 **Akshintala VS**, Saxena P, Zaheer A, Rana U, Hutfless SM, Lennon AM, Canto MI, Kalloo AN, Khashab MA, Singh VK. A comparative evaluation of outcomes of endoscopic *versus* percutaneous drainage for symptomatic pancreatic pseudocysts. *Gastrointest Endosc* 2014; **79**: 921-8; quiz 983.e2, 983.e5 [PMID: 24315454 DOI: 10.1016/j.gie.2013.10.032]

7 **Varadarajulu S**, Lopes TL, Wilcox CM, Drelichman ER, Kilgore ML, Christein JD. EUS *versus* surgical cyst-gastrostomy for management of pancreatic pseudocysts. *Gastrointest Endosc* 2008; **68**: 649-655 [PMID: 18547566 DOI: 10.1016/j.gie.2008.02.057]

8 **Seicean A**, Pojoga C, Rednic V, Hagiu C, Seicean R. Endoscopic ultrasound drainage of pancreatic fluid collections: do we know enough about the best approach? *Therap Adv Gastroenterol* 2023; **16**: 17562848231180047 [PMID: 37485492 DOI: 10.1177/17562848231180047]

9 **Working Group IAP/APA Acute Pancreatitis Guidelines**. IAP/APA evidence-based guidelines for the management of acute pancreatitis. *Pancreatology* 2013; **13**: e1-15 [PMID: 24054878 DOI: 10.1016/j.pan.2013.07.063]

10 **McGuire SP**, Maatman TK, Zyromski NJ. Transgastric pancreatic necrosectomy: Tricks of the trade. *Surg Open Sci* 2023; **14**: 1-4 [PMID: 37599671 DOI: 10.1016/j.sopen.2023.06.003]

11 **Johnson MD**, Walsh RM, Henderson JM, Brown N, Ponsky J, Dumot J, Zuccaro G, Vargo J. Surgical *versus* nonsurgical management of pancreatic pseudocysts. *J Clin Gastroenterol* 2009; **43**: 586-590 [PMID: 19077728 DOI: 10.1097/MCG.0b013e31817440be]

12 **Liu BR**, Song JT, Zhang XY. Video of the Month: Emergency Endoscopic Fenestration for Treatment of a Recurrence Pancreatic Pseudocyst. *Am J Gastroenterol* 2015; **110**: 644 [PMID: 25942297 DOI: 10.1038/ajg.2015.13]

13 **van Brunschot S**, van Grinsven J, Voermans RP, Bakker OJ, Besselink MG, Boermeester MA, Bollen TL, Bosscha K, Bouwense SA, Bruno MJ, Cappendijk VC, Consten EC, Dejong CH, Dijkgraaf MG, van Eijck CH, Erkelens GW, van Goor H, Hadithi M, Haveman JW, Hofker SH, Jansen JJ, Laméris JS, van Lienden KP, Manusama ER, Meijssen MA, Mulder CJ, Nieuwenhuis VB, Poley JW, de Ridder RJ, Rosman C, Schaapherder AF, Scheepers JJ, Schoon EJ, Seerden T, Spanier BW, Straathof JW, Timmer R, Venneman NG, Vleggaar FP, Witteman BJ, Gooszen HG, van Santvoort HC, Fockens P; Dutch Pancreatitis Study Group. Transluminal endoscopic step-up approach *versus* minimally invasive surgical step-up approach in patients with infected necrotising pancreatitis (TENSION trial): design and rationale of a randomised controlled multicenter trial [ISRCTN09186711]. *BMC Gastroenterol* 2013; **13**: 161 [PMID: 24274589 DOI: 10.1186/1471-230X-13-161]

14 **Suggs P**, NeCamp T, Carr JA. A Comparison of Endoscopic Versus Surgical Creation of a Cystogastrostomy to Drain Pancreatic Pseudocysts and Walled-Off Pancreatic Necrosis in 5500 Patients. *Ann Surg Open* 2020; **1**: e024 [PMID: 37637446 DOI: 10.1097/AS9.0000000000000024]

**Footnotes**

**Conflict-of-interest statement:** The author declares no conflict of interest for this article.

**Open-Access:** This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: https://creativecommons.org/Licenses/by-nc/4.0/

**Provenance and peer review:** Invited article; Externally peer reviewed.

**Peer-review model:** Single blind

**Peer-review started:** October 31, 2023

**First decision:** December 4, 2023

**Article in press:** January 16, 2024

**Specialty type:** Gastroenterology and hepatology

**Country/Territory of origin:** Taiwan

**Peer-review report’s scientific quality classification**

Grade A (Excellent): 0

Grade B (Very good): B, B

Grade C (Good): C, C

Grade D (Fair): 0

Grade E (Poor): 0

**P-Reviewer:** Dedemadi G, Greece; Fujino Y, Japan; Shi RH, China **S-Editor:** Qu XL **L-Editor:** Wang TQ **P-Editor:** Qu XL

**Table 1 Comparison of treatment procedures for pancreatic pseudocyst and walled-off necrosis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Procedure** | **Percutaneous cystic drainage** | **EUS-guided drainage with/without necrosectomy** | **ETGF1 with/without necrosectomy** | **Surgical cystogastrostomy2** |
| Variable |  |  |  |  |
| Technique difficulty | Less | Less | High | High |
| Risk | Less | Less | Moderate | High |
| Re-insertion | Yes | Yes | - | - |
| Complications | Less | Less | Moderate | Less |
| Healing course | Long | Long | Short | Short |
| Cost | Less | Moderate | Moderate | High |
| Ref. | Johnson *et al*[11]; Akshintala *et al*[6] | Seicean *et al*[8]; McGuire *et al*[10] | Varadarajulu *et al*[7]; Suggs *et al*[14]; Liu *et al*[12] | Varadarajulu *et al*[7]; Suggs *et al*[14] |

1ETGF: Similar to the surgical procedure (cystogastrostomy).

2Cystogastrostomy performed using a traditional or laparoscopic approach.

ETGF: Endoscopic transgastric fenestration; EUS: Endoscopic ultrasound.



Published by **Baishideng Publishing Group Inc**

7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

**Telephone:** +1-925-3991568

**E-mail:** office@baishideng.com

**Help Desk:** https://www.f6publishing.com/helpdesk

https://www.wjgnet.com



**© 2024 Baishideng Publishing Group Inc. All rights reserved.**