Endoscopic ultrasound-guided pancreatic duct drainage: a 10-year single-center experience

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INTRODUCTION

Transpapillary drainage is first-line treatment for symptomatic obstruction of the pancreatic duct. Options in those with failure to cannulate can be limited, and surgery can become necessary.

EUS-guided pancreatic duct drainage (EUS-PDD) is an option that is technically difficult to perform. To characterize success rates and difficulties associated with performance of this procedure, we sought to describe our experience.

METHODS

- Retrospective review of EUS-PDD performance in a tertiary referral center
- 27 total cases from 2011 to 2021 identified through CPT code search and subsequent manual chart review
- Mean age 54.6 years
- 15 of 27 (55.6%) female
- Various indications as listed in **Table 1**
  - Stricture most common indication (33.3%)

	n(%)
Age, mean (SD)	54.6 (12.8)
Sex	
Male	12 (44.4)
Female	15 (55.6)
Indication for EUS-PDD	
Stone	8 (29.6)
Stricture	9 (33.3)
Mixed	2 (7.4)
Discontinous duct	3 (11.1)
Pancreas divisum	5 (18.5)

Table 1 – Baseline characteristics of patient cohort

TECHNICAL ASPECTS

- Cannulation of pancreatic duct under ultrasound guidance (**Figure 1**)
- Wire passed and tract dilated
- Placement of stent under fluoroscopy (**Figure 2**)
- Gastric approach in 26 of 27 cases
  - Duodenal approach in 1 case, unsuccessful due to discontinuous duct
- Technical success achieved in 22 cases

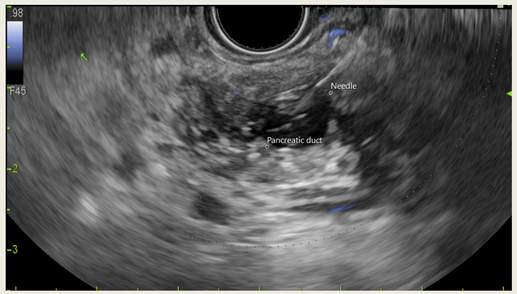

Figure 1 - Cannulation of PD through the stomach under ultrasonography

Figure 2 - Stent placed under fluoroscopy

CLINICAL RESULTS

- Clinical success defined as both:
  - Improvement in **symptoms**
  - Imaging evidence of amelioration in **PD dilation**
- Achieved in all 22 patients
- 17 of 22 with resolution of pain
  - 5 with improved but residual pain

Post-procedural adverse events are briefly outlined in **Table 2**.

Category	n(%)
Approach	
Antegrade	22 (81.5)
Retrograde	5 (18.5)
Technical success	22/27 (81.4)
Type of stent	
Straight	12 (54.5)
Pigtail	10 (45.5)
Adverse events	
Pancreatitis	3 (11.1)
Bleeding	1 (3.7)
PD leak	1 (3.7)
Stent migration	2 (7.4)
Clinical success	22/22 (100)
Number of readmissions, mean (SD)	1.7 (2.2)
Reintervention required	2 (9.1)

Table 2 – Post-procedural adverse events and follow-up

DISCUSSION

- EUS-PDD is technically challenging with an adverse event rate of 25.9%, similar to previous literature.
- Cases that are technically successful have a high probability of clinically significant effect.
- Long-term data on safety and symptom remission are needed.
- Stent changes were performed at variable times, and long-term studies are need to assess reactive vs proactive approach to stent changes.
- A larger number of cases may better discriminate factors predisposing to adverse events for patient selection.