Systematic Review of Long-Term Effectiveness of Endoscopic Gastrojejunostomy in Patients Presenting with Gastric Outlet Obstruction From Periampullary Malignancies.

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Background

- Malignant gastric outlet obstruction (GOO) occurs when a tumor creates a blockage of the upper gastrointestinal tract in the region of the stomach, duodenum, or jejunum preventing or reducing the forward flow of gastric contents.
- Surgical gastrojejunostomies (GJ) and endoscopic stenting are indicated for palliation of GOO.
- The SUSTENT Trial differentiates intervention based on life expectancy with surgical intervention as the treatment of choice for life expectancy greater than 2 months and stenting the treatment of choice for life expectancy less than 2 months.
- Recently, endoscopic ultrasound guided (EUS) gastrojejunostomy (GJ) has emerged as an alternative option
- Procedure involves the creation of a fistulous tract between the stomach and the small intestine using EUS, with deployment of a metal stent to create a conduit between gastrointestinal lumens to bypass an obstruction.

Methods

- Literature review was conducted using PubMed, Ovid, Clinical Key, Cochrane Library, Web of Science, and UpToDate; results were not limited by publication date.
- 192 studies were identified
- 6 studies with a follow up time frame of a minimum of 5 months were analyzed
- Remaining studies excluded due to follow up time frame of less than 5 months
- Total of 238 patients
- Outcome variables included technical success rate, clinical success rate, adverse events, symptom recurrence, and reintervention rates.

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Objective

The purpose of this study was to investigate the available data regarding the long-term efficacy of EUS-guided GJ in relieving GOO symptoms specifically focusing on technical and clinical success rates, adverse events, symptom recurrence, and reintervention rates.

Study Demographics

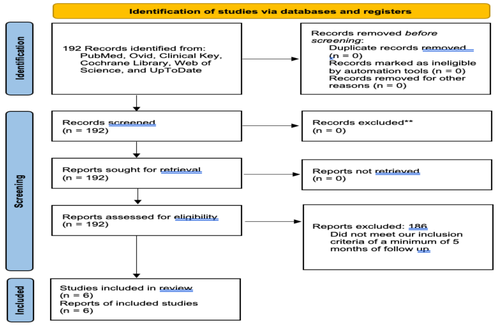


Table 1:

	N=238	PERCENTAGE (%)
AVERAGE AGE (YEARS)	68.2	
FEMALE	112	47
MALE	126	53
AVERAGE FOLLOW-UP TIME (DAYS)	170	
YEAR OF DATA COLLECTION	2013 - 2021	
PRESENTING SYMPTOM		
NAUSEA AND VOMITING	117	49.2
INABILITY TO TOLERATE ORAL INTAKE	104	43.7
UNDEFINED SYMPTOMATIC GOO	79	33.2
WEIGHT LOSS	28	11.8
ABDOMINAL PAIN	14	5.9
EARLY SATIETY	8	3.4
ETIOLOGY OF MALIGNANCY		
PANCREATIC	146	61.3
METASTATIC	32	13.5
GASTRIC	22	9.3
AMPULLARY	16	6.7
BILIARY	15	6.3
OTHER	5	2.1
DUODENAL	1	0.4
NEUROENDOCRINE	1	0.4
SITE OF OBSTRUCTION		
PRE-PYLORIC/PYLORIC	49	20.6
FIRST/SECOND PORTION OF DUODENUM	109	45.8
THIRD/FOURTH PORTION OF DUODENUM	34	14.3
PROXIMAL JEJUNUM	9	3.8
UNDEFINED	37	15.5
TYPE OF STENT USED		
HOT AXIOS (BOSTON SCIENTIFIC)	208	87.4
AXIOS STENT (XLUMENA)	28	11.8
NITI-S SPAXUS (TAEWOONG MEDICAL CO)	2	0.8

Results

Table 2:

ADVERSE EVENTS (AE)	N	PERCENTAGE %	PERCENTAGE OF TOTAL AE
STENT MISDEPLOYMENT	8	3.4	32
ABDOMINAL PAIN REQUIRING HOSPITAL READMISSION	3	1.3	12
STENT MISPLACEMENT	2	0.8	8
STENT OCCLUSION	2	0.8	8
STENT LEAKAGE	2	0.8	8
BLEEDING	2	0.8	8
FAILURE OF STENT DEPLOYMENT	1	0.4	4
STENT EROSION	1	0.4	4
STENT INGROWTH	1	0.4	4
PEG PLACEMENT	1	0.4	4
PERFORATION	1	0.4	4
BRONCHOASPIRATION DURING PROCEDURE	1	0.4	4
SYMPTOM RECURRENCE			
GOO RECURRENCE	14	5.9	

Figure legends:
Table 2: *AE: Adverse effects; GOO: Gastric outlet obstruction; PEG: Percutaneous gastrostomy tube.*

Supplementary Table 1: Publications included in final analysis

Author	Patients	# Male	Mean Age (years)	Follow-Up (days)
Khashab et al, 2016	30	17	70	155
Kerdsirichairat et al, 2018	48	24	65	196
On et al, 2022	22	13	63	162
Ge et al, 2019	22	9	65.9	157
Nguyen et al, 2021	37	20	73.1	171
Sanchez-Aldehuelo et al, 2022	79	43	72.4	180

Table 3:

Author	Technical Success	Clinical Success	Recurrent Symptoms	Reintervention	Adverse Events
Khashab et al, 2016	26	26	1	1	5
Kerdsirichairat et al, 2018	45	44	5	5	2
On et al, 2022	20	22	1	1	2
Ge et al, 2019	22	21	2	2	5
Nguyen et al, 2021	36	34	3	3	3
Sanchez-Aldehuelo et al, 2022	74	74	2	2	8

Results

- Our results show:
  - Technical and clinical success rate of 93.7% and 92.9%
  - Overall complication rate of 10.5%
  - Recurrence of GOO symptoms of 5.9%
  - Reintervention rate of 5.9%.
- Reported overall complication rate of duodenal stenting as high as 44%.
- Reported morbidity of surgical intervention for malignant GOO can be as high as 70%

Conclusions

- To our knowledge, this is the first analysis looking at long-term complication and symptom recurrence of EUS-guided GJ for malignant GOO.
- EUS-guided GJ appears to be a safe and promising new technique for palliation of malignant gastric outlet obstruction
- Surgical palliation should be prioritized as there are currently no long-term trials addressing the effectiveness of endoscopic palliation in those patients expected to survive beyond 6 months.

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