IMPROVEMENT IN GERD-HRQOL FOLLOWING PERORAL ENDOSCOPIC CARDIAL CONSTRICTION WITH BAND LIGATION (PECC-B) FOR REFRACTORY GERD– A SINGLE CENTER PROSPECTIVE PILOT STUDY

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DDW2026
Digestive Disease Week®
MAY 2–5, 2026 | CHICAGO, IL
EXHIBIT DATES: MAY 3–5, 2026
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BACKGROUND

- Global prevalence of GERD: 8%-33%
- Lifestyle modification and PPI: mainstay of treatment
- 40% patients have persistent symptoms with PPI
- Rising concern with prolonged use of PPI
  - Bone fractures
  - Hypomagnesemia
  - Clostridium difficile infections
- Anti-reflux surgery
  - Patient uptake: <5%
  - Long term complications and recurrence

ENDOSCOPIC TECHNIQUES FOR MANAGEMENT OF GERD

Mechanical methods

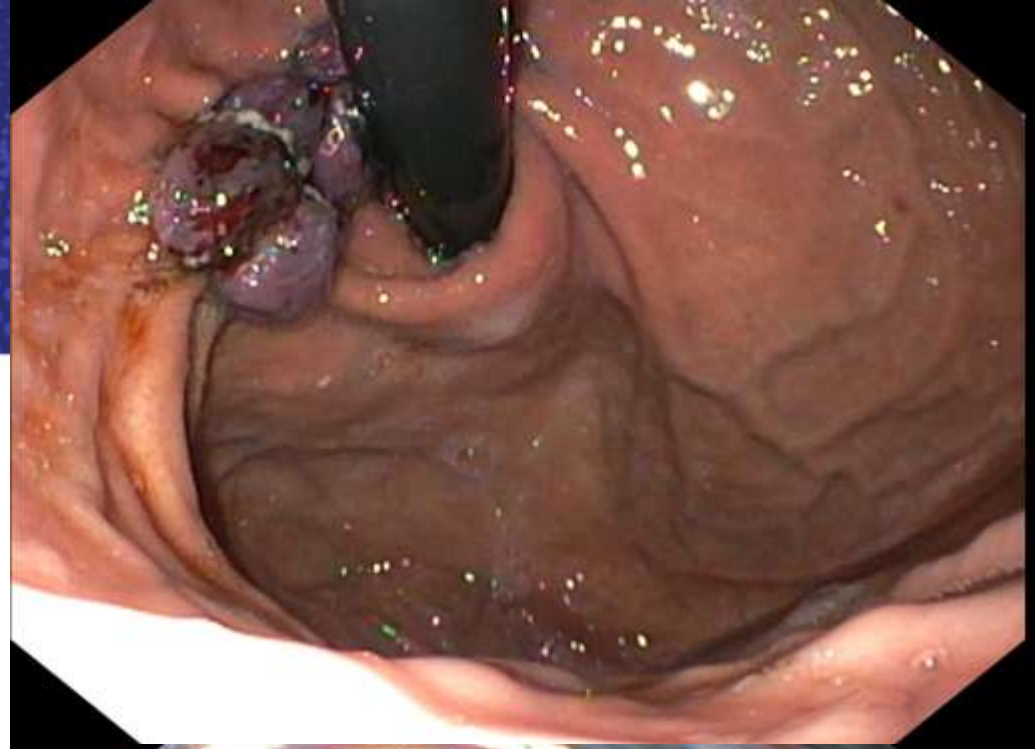
1. Transoral incisionless fundoplication
2. Endoscopic anterior fundoplication with the Medigus Ultrasonic Surgical Endostapler
3. GERDx

By creating fibrosis at GEJ

1. Stretta procedure
2. Anti-reflux mucosectomy
3. Anti-reflux mucosal ablation

PER ORAL ENDOSCOPIC CONSTRICTION OF THE CARDIA USING EVL BANDING (PECC-B)

- Economic and easy
- Application of multiple rubber bands at the EGJ and gastric cardia
- Requires only a multiband ligator device
- No new technical expertise needed
- Small learning curve



Parameter	Xue Li et al.(2017)	Hu HQ et al.(2018)	Zhi-Tong Li et al.(2021)
Sample Size	47 patients	13 patients (analysed)	68 patients
Type of study	Retrospective	Prospective	Retrospective
Follow-up	6 months	3months	12 months
Technical Success	100%	100%	Implied 100%
Efficacy Metrics	pH monitoring	GERD-HRQL, pH monitoring	Symptom scores, medication use, pH monitoring
Key Efficacy	73.7% response	70% response	77.9% response

METHODOLOGY

Study Design: Prospective observational study

Inclusion

- Adult patients
- Symptomatic GERD (heartburn, regurgitation)
- Objective evidence of GERD on pH study
- Absence of esophageal motility disorders on high resolution manometry
- No or small hiatus hernia and Hill's grade I/II GE flap valve on endoscopy

Exclusion

- Prior oesophageal or gastric surgery
- Known coagulation disorder, connective tissue or autoimmune disorders
- Esophageal stricture
- Esophageal peristaltic abnormality
- Para-oesophageal hernia
- Large hiatus hernia

OUTCOMES

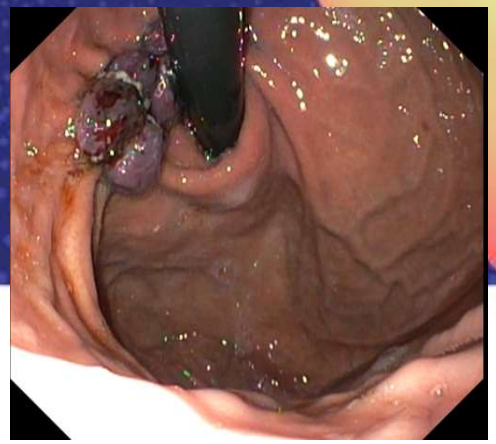
Primary Outcome

- Improvement in the quality of life using GERD-HRQL validated questionnaire at 3 months after the procedure

Secondary outcomes

- Improvement in GERD symptom scores
- Changes in DeMeester score, and acid exposure time on 24-hr pH study
- Drug independence at 3 months

METHODOLOGY



Patients with Symptomatic GERD

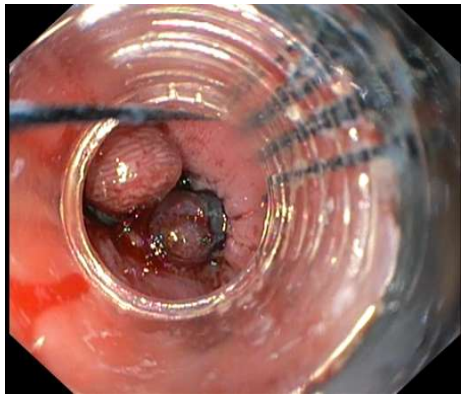
Preprocedural evaluation

- Upper GI endoscopy
- 24h Ph study
- GERD-HRQL
- Esophageal manometry

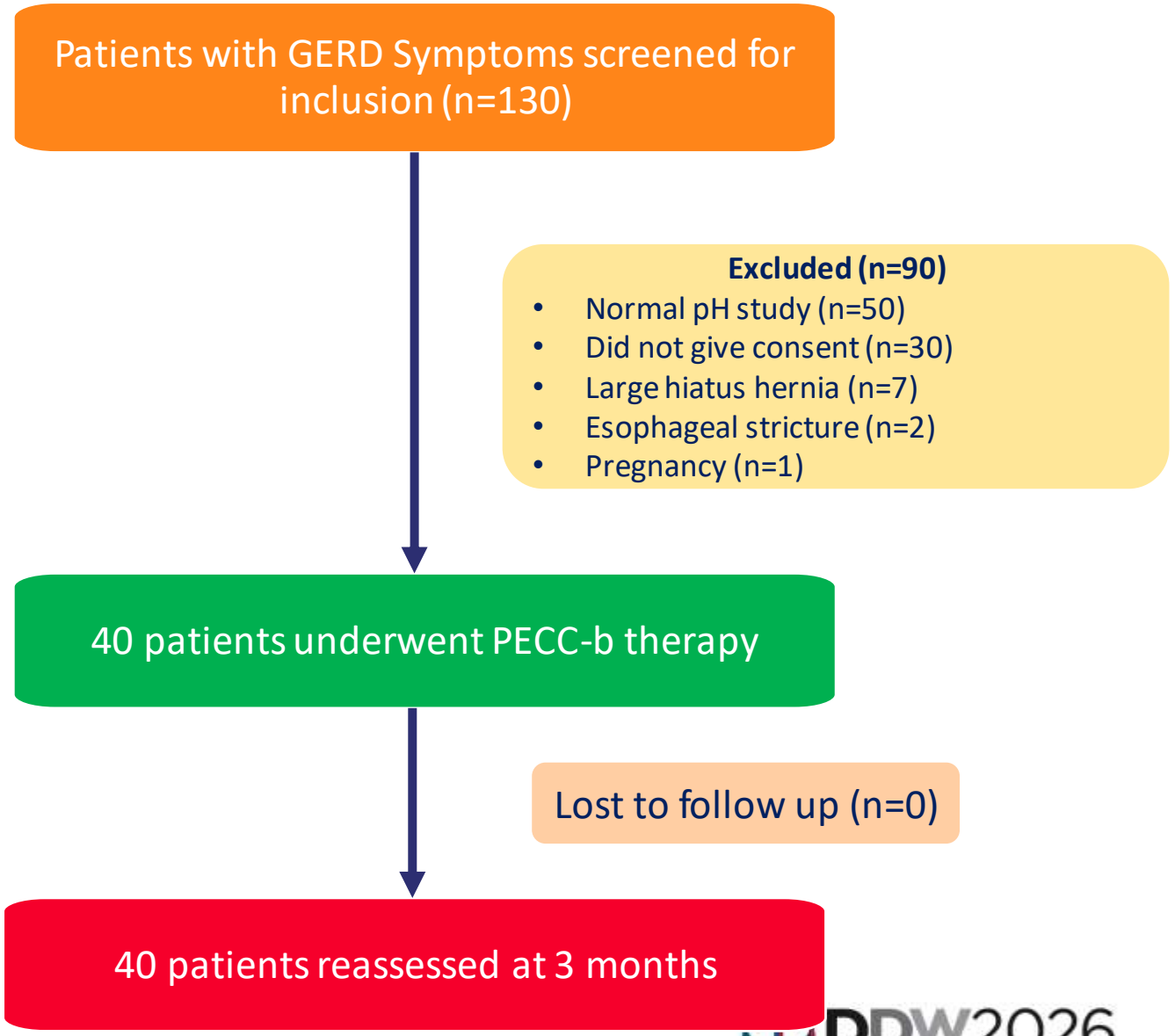
PECC-b procedure

Follow up at 3 months

- Endoscopy
- 24 h pH study
- GERD-HRQL assessment
- Adverse events



RESULTS



RESULTS

BASELINE DEMOGRAPHICS

Characteristics	Value
Gender (male)	30 (75%)
Age in years (mean)	36+10
Symptoms	
Regurgitation (%)	40 (100%)
Heartburn (%)	35(88%)
Symptom duration	
>1 year /< 1 year	35/5
Hill's grade of GE flap	
Hills grade 1/2/3/4	32/8/0/0
Esophagitis (As per Los Angeles Classification)	
Non erosive reflux esophagitis	34
A/B/C/D	0/5/1/0
24 hour pH study	
Total Acid exposure time (%)	28.1(18.2-54.5)
DeMeester score (median)	103 (53-161)
Number of reflux episodes	81.5(53.8-126)
Symptom Burden	
GERD-HRQL score	22.8±3.2
Mean LES pressure at esophageal manometry	7.2+2

RESULTS

Primary Outcome

Characteristic	Before PECC b	After 3 months	P value
Mean GERD -HRQL	22.8±3.2	12±4.8	<0.001

Secondary Outcomes

Characteristic	Before PECC b	After 3 months	P value
Regurgitation symptom score, median(IQR)	7.5(5.75-8)	3(2-5)	<0.005
Heartburn symptom score, median (IQR)	15(12-16)	8(4-9)	<0.005
24 hr pH study			
DeMeester score, median(IQR)	103(51-161)	52.5(33.5-78.3)	<0.005
%AET upright, median (IQR)	33.9(16.5-59.8)	12.5(9.9-20.5)	<0.005
%AET recumbent, median(IQR)	23.4(11.8-52.5)	12.0(11.8-52.5)	<0.005
%Total AET, median (IQR)	28.1(18.2-54.5)	14.8(8.0-18.0)	<0.005
Episodes Over 5 min, median (IQR)	7.9(4.3-14)	5(3-7)	<0.005
Longest Episode, median (IQR)	125(45-233)	87(45-125)	<0.005
Total reflux episodes, median(IQR)	81.5(53.8-126)	30(21.8-70.8)	<0.005

RESULTS

PPI Independence

- At 3 months follow up
  - 57.5% (23/40) off PPI
  - 27.5% (11/40) partially responsive (PPI use ≤ 2 times per week)
  - 15% (6/40) of patients had no response
- Overall 85% patients had reduction in PPI use

Adverse events

- Serious Adverse events : None
- Periprocedural
  - Mild chest pain: 37%(15/40)
- Long term: None

DISCUSSION

Conclusion

- PECC-b therapy is straightforward, easy, effective, and safe endoscopic technique for the treatment of GERD
- There is improvement in –
  - ✓ GERD symptoms
  - ✓ Distal esophageal acid exposure
  - ✓ DeMeester score
  - ✓ Quality of life (QoL)
  - ✓ With no major adverse events at 3 months

Limitations

✓ Single arm study

✓ Short follow up duration

✓ Not included extraesophageal symptoms

✓ Impedence analysis was not done

THANK YOU

Presenter

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