

Esophagogastric Junction Outflow Obstruction (EGJOO) in Patients with Hiatal Hernias: Is Hiatal Hernia Repair Alone Sufficient?

Colin G. DeLong, MD, Alexander T. Liu, MD, Matthew D. Taylor, MD, Jerome R. Lyn-Sue, MD, Eric M. Pauli, MD, and Randy S. Haluck, MD
Department of Surgery
Penn State Milton S. Hershey Medical Center

Background

- EGJOO has two types:
  - Primary (idiopathic)
  - Secondary (mechanical)
- Patients with hiatal hernias (HH) sometimes have EGJOO on preoperative manometry, usually attributed to secondary cause
- **Hypothesis**: In patients with HH+EGJOO, HH repair without myotomy is sufficient.
  - An underlying primary motility disorder is uncommon.

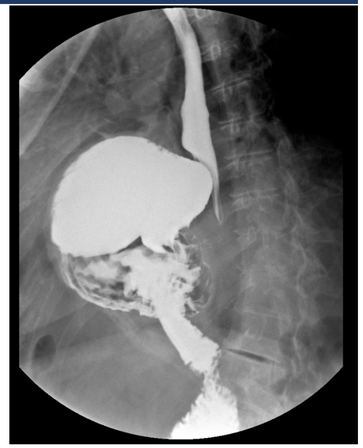


Figure 1. HH+EGJOO patient. HH on swallow study shown here. HREM showed EGJOO.

Methods

- Retrospective review
- Inclusion:
  - **Patients who underwent high-resolution manometry (HREM) within 1 year of HH repair**
- Comparison of preoperative risk factors, operative details, and postoperative outcomes between patients with, and without, EGJOO on preoperative HREM
- Primary outcome
  - **"Persistent symptoms"** = symptoms warranting workup or evaluation outside of standard postoperative follow-up course

Results

- **63 patients identified**
  - Mean age: 64.4 ± 11
  - Gender:
    - Female 51 (81.0%)
    - Male 12 (19.0%)
  - Hiatal Hernia Type
    - Type I: 18 (28.5%)
    - Type II: 6 (9.5%)
    - Type III: 35 (55.6%)
    - Type V: 4 (6.3%)
  - Prior Foregut Surgery: 11 (17.5%)
- **HREM findings of these 63 patients**:

Table 1: *Preoperative HREM Findings of HH patients*

	n = 63
Normal	43 (68.3%)
EGJOO	13 (20.6%)
Achalasia	
Type I	0
Type II	1 (1.6%)
Type III	1 (1.6%)
Major Disorder of Peristalsis	
Distal Esophageal Spasm (DES)	1 (1.6%)
Jackhammer esophagus	0 (0%)
Absent contractility	0 (0%)
Minor Disorder of Peristalsis	
Ineffective motility (IEM)	3 (4.8%)
Fragmented peristalsis	1 (1.6%)

- **Comparison between EGJOO patients and patients with normal preoperative HREM**:
  - **No major differences** in preoperative risk factors/symptoms, operative details, or postoperative outcomes (Table 2)

Table 2: *Postoperative Outcome Comparison*

	EGJOO n=13	Normal Manometry n=43	p-value
Postoperative Outcomes			
LOS	2.8	2.6	0.39
Readmission	1 (7.7%)	2 (4.7%)	0.55
Complication	1 (7.7%)	7 (16.3%)	0.67
Recurrence	2 (15.4%)	3 (7.0%)	0.58
Persistent symptoms	3 (23.1%)	6 (14.0%)	0.42

- **3 HH+EGJOO patients had persistent symptoms (Table 3)**
  - No patient required a secondary intervention for missed primary EGJOO

Table 3: *Outcome of EGJOO patients w/ persistent symptoms*

Patient #	Age / Gender	Surgery	Post-Operative Manometry	Other Post-operative Diagnostics	Intervention	Resolution of Symptoms?
1	59 F	Lap HH repair, posterior cruroplasty, mesh placement, gastropexy	Yes (POD 67): EGJOO	Swallow study suggested possible concurrent cricopharyngeal dysfunction	Botox Injection to Upper esophageal sphincter	Resolved
2	49 F	Robotic HH repair, posterior cruroplasty, Nissen fundoplication	Yes (POD 209): EGJOO	Normal pH study; normal swallow study; normal gastric emptying study	Nitroglycerin for spasm symptoms	Persistent spasm symptoms, dysphagia resolved
3	76 F	Robotic HH repair, posterior cruroplasty, mesh placement, gastropexy	Not performed	Swallow study showed esophageal dysmotility w/ mild narrowing at GE junction and delayed passage of tablet	None	Resolved



Figure 2. HH+EGJOO patient with persistent EGJOO after HH repair.

Conclusion

- Outcomes of HH repair are not different between patients with EGJOO vs normal manometry findings on preoperative HREM
- Majority of HH+EGJOO patients experienced symptom resolution following HH repair alone
  - None required additional intervention to address a missed primary motility disorder (i.e.. myotomy)
- Further study needed to determine optimal management of HH+EGJOO patients with persistent EGJOO after HH repair

PennState Health
Milton S. Hershey Medical Center