Laparoscopic Gastropexy with Soft Tissue Anchor as a Novel, Safe, and Durable Treatment for Hiatal Hernias During or After Sleeve Gastrectomy

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Introduction

- Intrathoracic Sleeve Migration/Hiatal Hernia is increasingly being recognized as a long-term complication of laparoscopic sleeve gastrectomy. Its incidence is not known, but it will be more significant with the increasing numbers of laparoscopic sleeve gastrectomy performed.[1,2]
- There is no consensus or standard approach to address hiatal hernias during or after sleeve gastrectomy.[1]
  - Roux-en-Y Bypass and Sleeve Gastrectomy with Diaphragmatic Repair both associated with increased short- and long-term risk profiles compared to Sleeve Gastrectomy in patients without hiatal hernias
  - Sleeve Gastrectomy with Diaphragmatic Repair and Gastropexy associated with an elevated risk of staple line leak because of strain on new staple line.
- Our center utilizes laparoscopic gastropexy with soft tissue anchor to treat hiatal hernias during or after sleeve gastrectomy.

Hypothesis

Laparoscopic gastropexy with soft tissue anchor is a safe and durable treatment for hiatal hernias during or after sleeve gastrectomy.

This approach may offer a more acceptable risk profile compared to other described methods

Methods

Single Center Retrospective Case Series Chart Review
July 2018 – June 2023

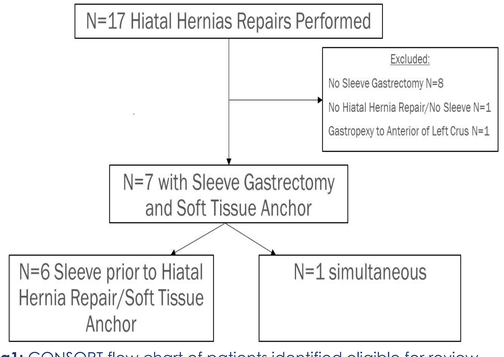


Fig1: CONSORT flow chart of patients identified eligible for review

Operative Method

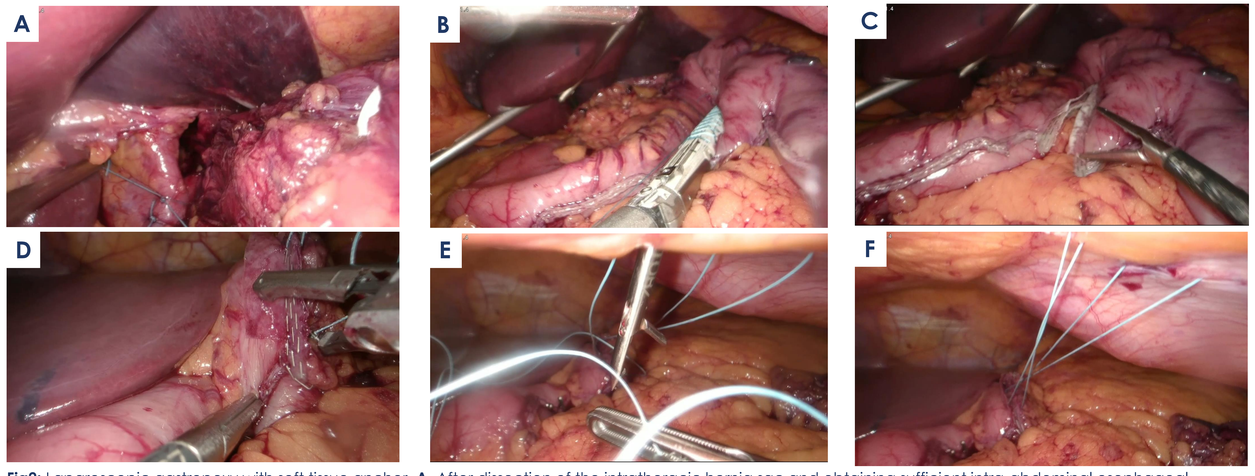


Fig2: Laparoscopic gastropexy with soft tissue anchor. **A.** After dissection of the intrathoracic hernia sac and obtaining sufficient intra-abdominal esophageal length, a standard cruroplasty is performed. **B and C.** During sleeve gastrectomy, the staple line at 1/3 the length of curvature is reinforced with a SEAMGUARD®. If sleeve gastrectomy was previously performed, this step is omitted as the previously healed staple line acts as its own buttress. **D.** 2 points of fixation are used on the buttress with nonabsorbable 2-0 Surgidac™ suture. **E and F.** These are then affixed to the anterior abdominal wall utilizing a laparoscopic suture passing device.

Results

A

Patient	Age	Sex
1	50	F
2	46	F
3	65	F
4	58	F
5	53	F
6	63	F
7	45	F

B

Comorbidity	N(%)	P-value
Obesity		
Overweight	2 (29)	
Class 1	0 (0)	
Class 2	3 (43)	
Class 3	2 (29)	0.44
Smoking		
Never Smoked	6 (86)	
Ex-smoker	1 (14)	
Current	0 (0)	0.01
Diabetes		
Yes	1 (14)	
No	6 (86)	0.03
ASA		
Class I	0 (0)	
Class II	4 (57)	
Class III	3 (43)	
Class IV	0 (0)	0.45
Hiatal Hernia		
Type 1	5 (71)	
Type 2	1 (14)	
Type 3	1 (14)	0.05

Table1: Demographic Data. **A.** Age and Sex **B.** Comorbidities

Length of Stay (d)	N(%)	P-value	Notes
1	3 (43)		
2	1 (14)		
3	1 (14)		Delayed due to cardiac workup (negative) for chest pain
4	2 (29)	0.77	1 Due to Ileus from extensive lysis of adhesions and enterotomies unrelated to repair. 1 Due to difficulty weaning off oxygen

Table2: Length of stay and perioperative complications

Results

Patient	Time to discharge from clinic (d)	Symptom Resolution	PPI Use	Suspected Recurrence (symptom/imaging/OGD)	Notes
1	66	Improved	BID	No	
2	34	Resolved	OD	No	
3	145	Resolved	OD	No	POD40 Breast Cancer staging CT with no Hiatal Hernia Recurrence
4	200	Resolved	BID	No	Investigations for anemia NYD. OGD POD200 No Recurrence
5	41	Improved	BID	No	
6	57	Resolved	OD	No	POD433 OGD for Barrett's Surveillance, no Hiatal Hernia
7	58	Resolved	OD	No	Also on Ranitidine

Table3: Postoperative outcomes and recurrence. OD = once daily

Conclusions

Preliminary data suggests laparoscopic gastropexy with soft tissue anchor is a safe and durable treatment of hiatal hernias during or after sleeve gastrectomy

Future Directions

- Follow current cohort for evidence of symptom and/or anatomical recurrence for 5-years
- Continue to recruit more patients into the study
- Compare with other commonly used techniques in Retrospective Cohort Studies and/or Randomized Control Trials

References

1. Che F., *et al.* Prevalence of hiatal hernia in the morbidly obese. *SORD.* 2013; 9(6):920-924
2. Bhandarkar S, *et al.* Post-laparoscopic sleeve gastrectomy, intrathoracic sleeve migration and its management: A case series and review of literature. *JMIS.* 2023; 19(4): 544-547

Disclosures

The authors have no conflicts of interest to disclose