

One Operation, Two Pathologies: Robotic One Operation, Two Pathologies: Robotic Median Arcuate Ligament Release with Concurrent Hiatal Hernia Repair & Fundoplication

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Introduction & Background

- Median Arcuate Ligament Syndrome (MALS) is a rare cause of celiac artery compression(<2 per 100,000)
- Symptoms overlap with foregut disorders, complicating diagnosis
- The concurrent surgical treatment of MALS and hiatal hernia/GERD is rarely reported

Case Presentation

- A 64 year old- male with CAD, Barrett's esophagus, COPD
- Nine months of gnawing epigastric pain
 - Postprandial discomfort
 - 35-lb unintentional weight loss

Diagnostic Workup

- CTA: Moderate proximal celiac artery compression
- Esophageal manometry: Normal
- Bravo pH study: DeMeester score 28 (pathologic reflux)

Procedure

Single-stage robotic-assisted approach:

- MAL Transection** with celiac ganglionectomy
- Type I Hiatal Hernia Repair**
- Nissen Fundoplication**

Postoperative Course

- Hospital Stay:** Discharged on POD 1.
- Complications:** * Re-presented with chest pain (Cardiac ischemia excluded via catheterization)
- Developed severe gas-bloat syndrome with subdiaphragmatic gastric bubble
- Intervention:** Endoscopy confirmed intact fundoplication; Savary-Gilliard dilation (51 Fr to 57 Fr) performed
- Outcome:** Resolution of reflux and postprandial pain

Discussion

- This case is among very few describing a robotic single-stage correction of both MALS and hiatal hernia.
- Thorough physiologic testing (pH study/manometry) is vital to prevent "over-attribution" of symptoms to MALS, which is often an incidental radiographic finding.
- This case highlights gas-bloat as a significant postoperative hurdle after fundoplication, requiring proactive counseling and potentially endoscopic intervention.

Conclusion

- Robotic single-stage treatment of MALS and hiatal hernia is safe and feasible, allowing effective management of dual foregut pathology in a single operation.
- The robotic platform is uniquely suited for addressing complex, dual-pathology foregut disease.
- Careful preoperative evaluation remains the cornerstone of successful surgical decision-making.

References

- 1.Kim EN et al. Median arcuate ligament syndrome. *JAMA Surg.* 2016.
 - 2.Gerull WD et al. Robotic median arcuate ligament release outcomes. *Surg Endosc.* 2023.
 - 3.Simioni A et al. Robotic MAL release experience. *J Robot Surg.* 2025.
 - 4.Robotic vs laparoscopic MAL release. *Ann Vasc Surg.* 2026.
- Also add one foregut reference if space allows:
- 5.Kohn GP et al. Guidelines for the management of hiatal hernia. *Surg Endosc.* 2013.

