A NOVEL PHRENOESOPHAGEAL MEMBRANE PRESERVING ROBOTIC MEDIAN ARCUATE LIGAMENT RELEASE

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INTRODUCTION

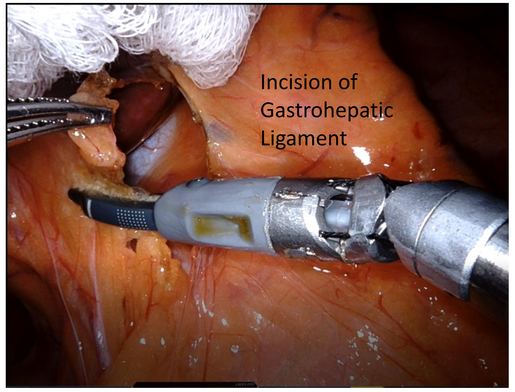
Median arcuate ligament syndrome (MALS) results from compression of the celiac artery (CA) by the fibrous attachments of the diaphragm. The robotic platform has become increasingly accepted as a modality for MALS release (RMALSR) due to the optimized visualization, ease of dissection, ergonomics and camera stability. Traditionally, access to the median arcuate ligament is obtained by disrupting the integrity of the phrenoesophageal membrane (PEM) at the hiatus, which may result in new onset of GERD and vagal injury. We describe a novel approach of MALS

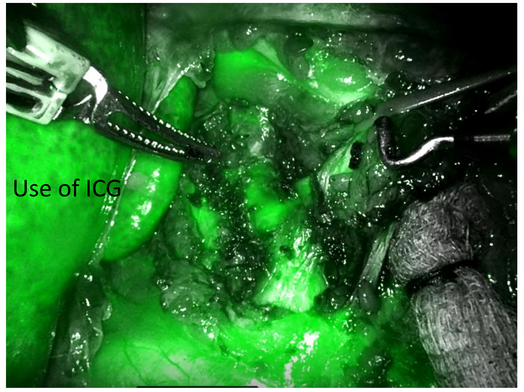
METHODS

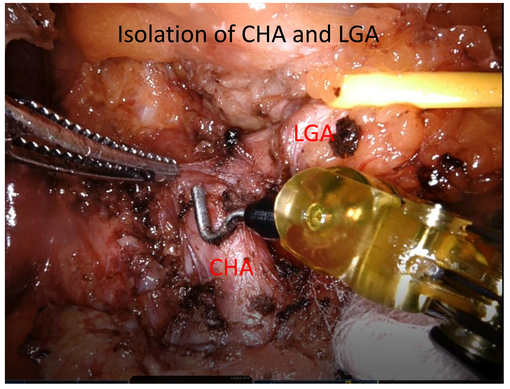
A retrospective chart review was performed on patients who underwent robotic MALR from August 2017 to October 2020. Workup included history and physical examination, mesenteric Doppler ultrasound, and CT Angiogram. Outcomes included pain improvement, length of stay, operation duration, narcotic use, and postoperative complications.

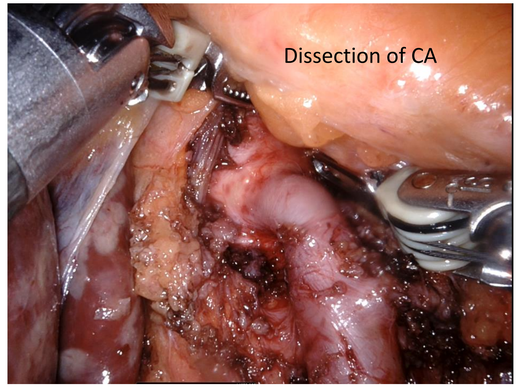
PROCEDURES

- DaVinci XI with standard foregut port placement
- Upper retroperitoneum was exposed by incision of the gastrohepatic ligament
- The common hepatic artery and left gastric artery were identified and fully dissected
- The arteries were then followed proximally to identify the trifurcation of the Celiac artery (CA).
- The splenic artery was exposed and all tissue surrounding the CA trifurcation removed.









- Careful dissection along the CA allowed elevation of the median arcuate ligament, which was divided until 3 cm of aortic surface was exposed proximal to the CA origin
- Indocyanine green florescence was used to assess perfusion before and after MALS release.
- Phrenoesophageal membrane was preserved throughout the procedure.

RESULTS

- 12 patients underwent RMALSR
- Age was 16 to 55 years (mean 25 years) and consisted primarily of females (85%)
- Most common presenting symptoms included postprandial pain (80%), weight loss (79%), nausea and vomiting (75%)
- Mean symptom duration was 5 years (range 1–7 years)
- No intraoperative complications or conversion to open surgery.
- Mean operative time was 110.6 min (range 86–130 min)
- Follow-up was 13.3 months (range 3–42 months)
- There were no 30 day readmissions. All patients experienced prompt symptom improvement.
- Two patients have had symptom recurrence during follow-up.

CONCLUSION

Phrenoesophageal membrane sparing robotic MALR is a novel step further to safely perform an already challenging operation sucessfully without increasing the risk of reflux and inadvertent vagal nerve damage during conventional MALR.