Collis Gastroplasty with Nissen Fundoplication as a Surgical Option for a Recurrent Large Paraesophageal Hernia

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INTRODUCTION

- Although the management of short esophagus may be controversial, an individual patient's anatomy may dictate management.
- With paraesophageal hernia recurrence rates ranging as high as 40-60%, it is important for surgeons to have a comprehensive armamentarium to address complex anatomy.
- Our case involves the robotic repair of a previously operated on paraesophageal hernia, which required a Collis gastroplasty to obtain a tension-free repair while simultaneously evading higher mediastinal dissection that could have been detrimental to the patient.

CASE REPORT

- 70 year old female was referred to our outpatient surgery clinic with concern of a paraesophageal hernia that was appreciated on CXR, UGI, and EGD on 11/4/2022.
- Patient had trialed medical management for 8 weeks prior to outpatient surgery clinic visit but failed. Patient has a history of GERD and nocturnal regurgitation.
- On 12/5/2022, the patient was taken to the OR for a Robotic Assisted Paraesophageal Hernia Repair with Dor Fundoplication.
- Six months post-operatively, the patient developed difficulty tolerating a regular diet and had recurrent emesis episodes at night.
- An EGD was performed on 7/11/23 which demonstrated a 7 cm paraesophageal hernia.
- On 8/1/23, the patient was once again seen in clinic and consented for a Robotic Assisted Complex Recurrent Paraesophageal Hernia Repair and Nissen Fundoplication.
- On 8/28/23, the patient was taken to the OR for a Robotic Assisted Repair of a Recurrent Paraesophageal Hernia with a Collis Gastroplasty and Nissen Fundoplication.
- The patient was discharged 5 days later after an unremarkable UGI.
- The patient's four-month post-operative follow up was unremarkable and the patient denies any negative sequela.

IMAGING



Figure 1: UGI prior to any intervention

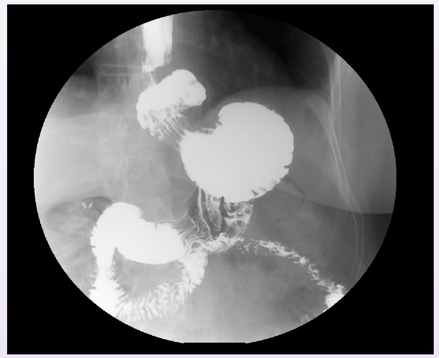


Figure 2: UGI post-index paraesophageal hernia repair



Figure 3: UGI post recurrent paraesophageal hernia repair

DISCUSSION

- Our patient initially had a Type III hiatal hernia, which is a combination of Types I and II, involving herniation of the gastroesophageal junction (GE-J) and the fundus through the hiatus. After the index operation, the patient experienced a recurrence leading to a Type II hiatal hernia.
- Potential factors leading to recurrence could have been inadequate intra-abdominal esophagus length, the large surface area of the hiatal hernia defect, and not using a mesh for hiatal defect closure.
- Tension-free repair is a fundamental principle of successful hernia surgery and prevention of recurrence.
- A key step of paraesophageal hernia repair is restoration of the GE-J infra-diaphragmatically with at least 2 cm (without tension) in length to minimize axial force.
- Unfortunately, short esophagus may be suspected pre-operatively but confirmation only occurs after extensive mediastinal dissection and not being able to have at least 2 cm of tension-free esophageal length below the diaphragm.
- A Collis gastroplasty, which was done in a wedge fundectomy technique in our case, establishes a neo-esophagus.
- A Collis gastroplasty can potentially lead to dysphagia, heartburn, and esophagitis with increased operative time and theoretically higher leak rates, but literature supports that it does not impact overall outcomes or quality of life.
- Collis gastroplasties in the setting of paraesophageal hernia repairs were shown to resolve epigastric and/or chest pain, postprandial bloating, and dyspnea.
- Collis gastroplasty is a viable option to address short esophagus and prevent recurrence of hiatal hernias.

REFERENCES

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