STAGED EMERGENT GASTRIC VOLVULUS REPAIR WITH ENDOSCOPIC DECOMPRESSION HAS FAVORABLE SHORT-TERM OUTCOMES

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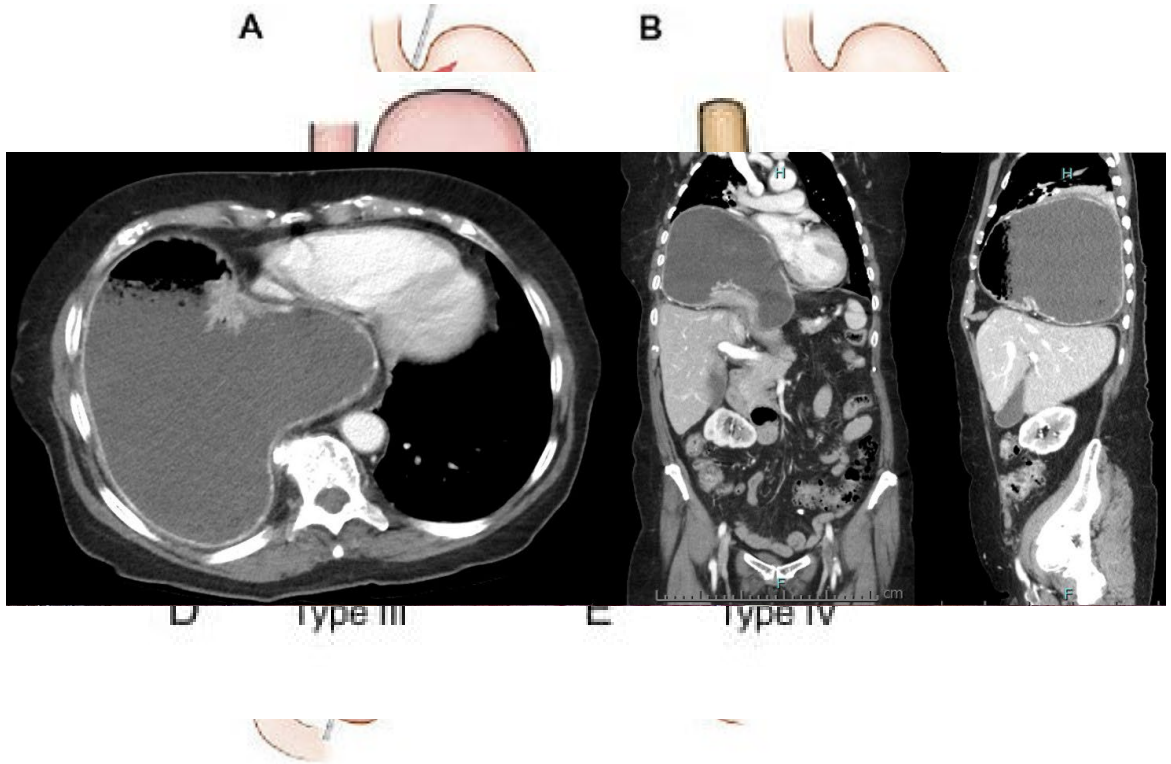
- No disclosures

Giant Paraesophageal Hernia (PEH)

- Displacement of at least 30% of the stomach into the chest
- Why is this important? **Acute gastric volvulus**
  - Strangulation leading to ischemia and perforation of the stomach
  - Annual risk of patient developing symptoms requiring emergent surgery is 1.1%
- Those requiring emergent laparoscopic PEH repair has similar outcomes to elective repair (0-2% mortality)[1].
- Endoscopic gastric decompression and resuscitation prior to laparoscopic PEH repair has been described as a safe and effective way to offer semi-elective surgery[1,2].



https://www.oceansurgicaloc.com/gastricvolvulus
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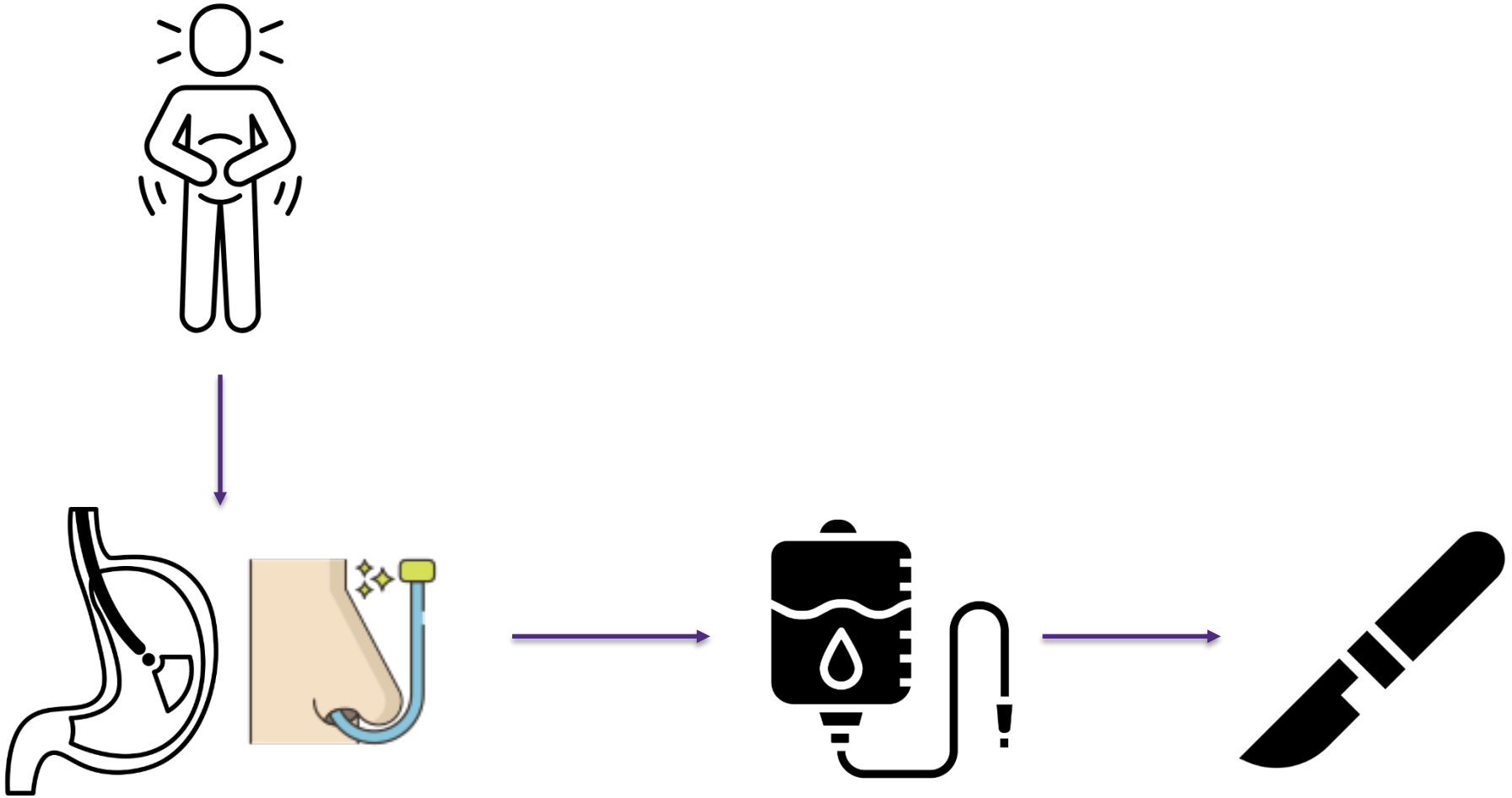
Purpose

- Describe our management protocol for patients presenting with acute gastric volvulus
- Describe postoperative outcomes of patients undergoing endoscopic decompression followed by laparoscopic PEH repair

Hypothesis

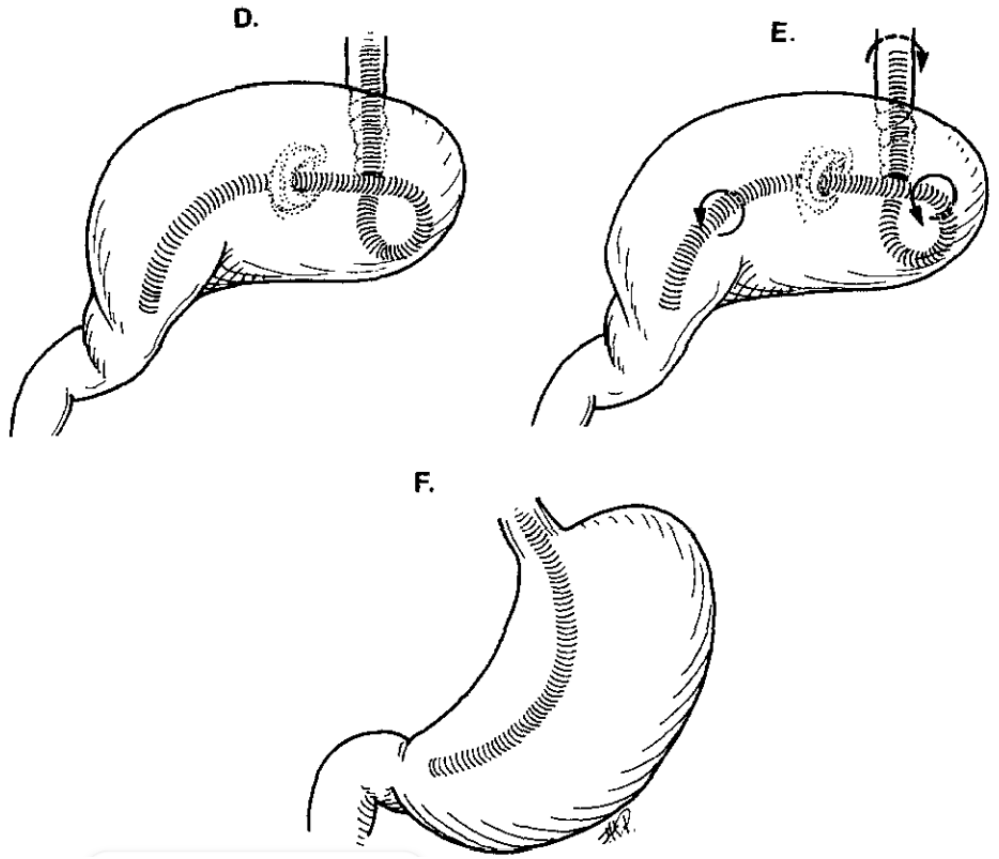
- Our management protocol for acute gastric volvulus will have similar mortality and complications to the current literature

Management Protocol of Acute Gastric Volvulus



Procedure in Detail

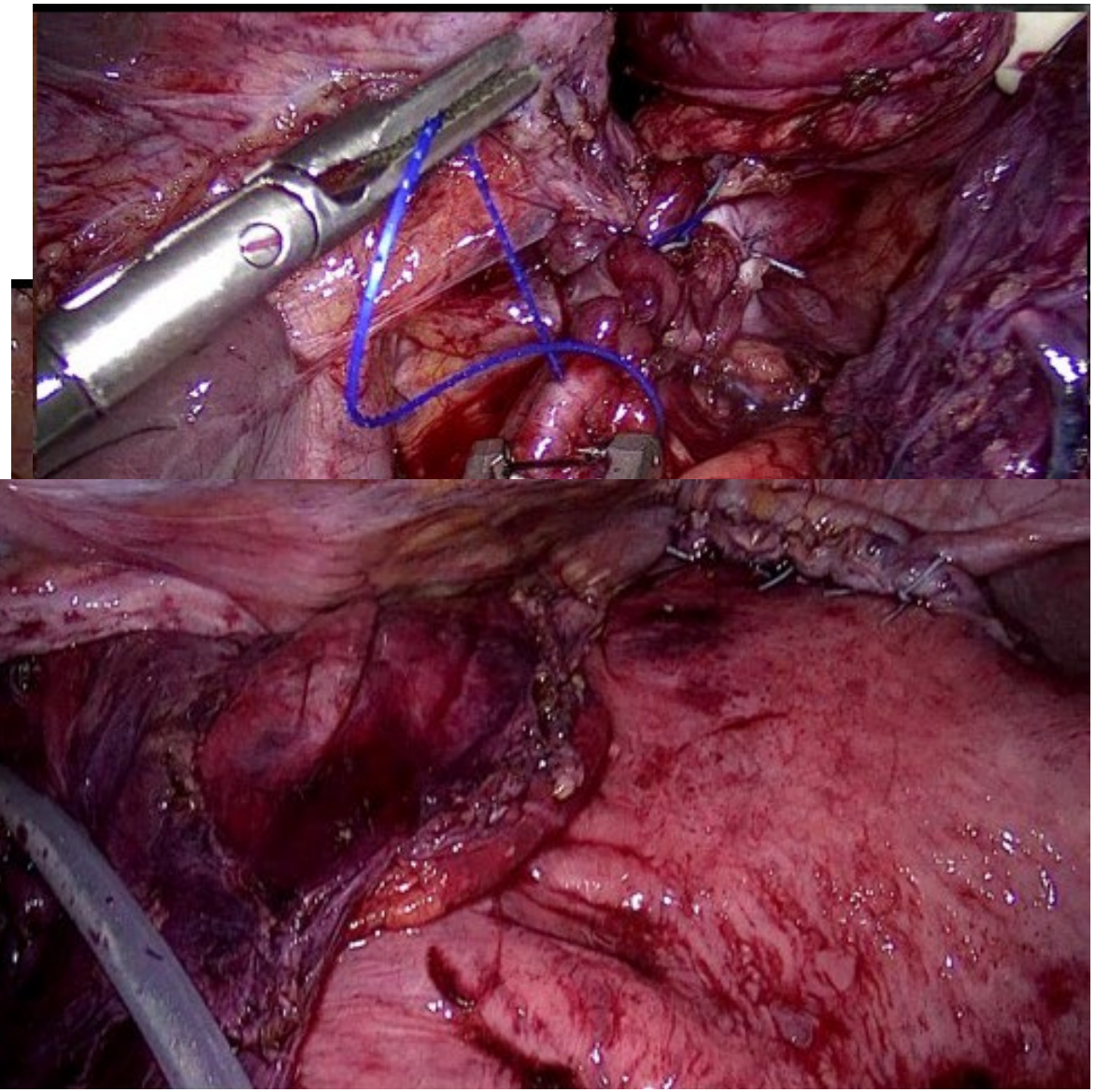
- Esophagogastroduodenoscopy (EGD) and **alpha maneuver** are performed to reduce gastric volvulus. Nasogastric tube is placed for decompression.
  - Scope passage into the second portion of the duodenum with subsequent retraction and rightward rotation)



Alpha Maneuver[3]

Procedure in Detail

- Laparoscopic paraesophageal hernia repair
  - Hernia sac reduced
  - Mediastinal dissection to gain adequate intra-abdominal esophageal length (at least 2 cm)
  - Primary suture closure of the esophageal hiatus
  - Gastropexy was left to the surgeon's discretion

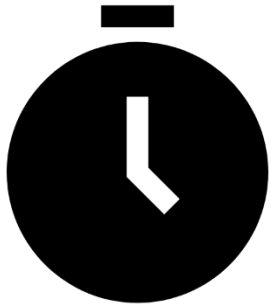


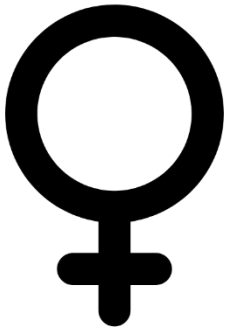
Patient Selection

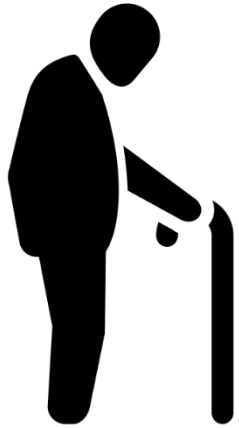
- Patients presenting to ECU Health with acute gastric volvulus and underwent laparoscopic PEH repair between May 2016 and May 2023.
- All patients underwent step-wise endoscopic decompression followed by laparoscopic PEH repair the same admission
- Two patients who presented with full thickness gastric necrosis and hemodynamic instability did not undergo an operation and were excluded

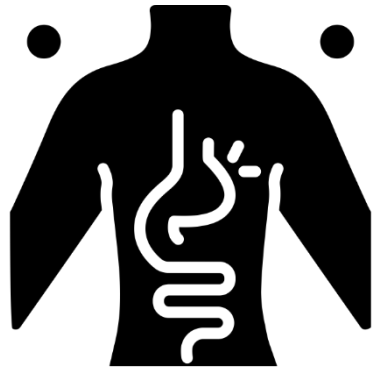
Patient Demographics and Operative Characteristics

- **43** patients available for study inclusion
- Mean age: **68.1 years**
- 72% Female
- 79% White race
- Hernia type
  - Type III 83%
  - Type IV 17%
- Mean Charlson Cormorbidity Index (CCI): 3.46
- **76% transferred from outside hospital**







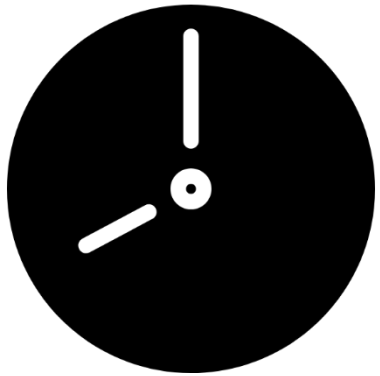


Endoscopy Outcomes

- Endoscopic evidence of gastric ischemia in 30% of patients (no frank necrosis)
- Successful hernia reduction in every case

Interval Between Endoscopy and Surgery

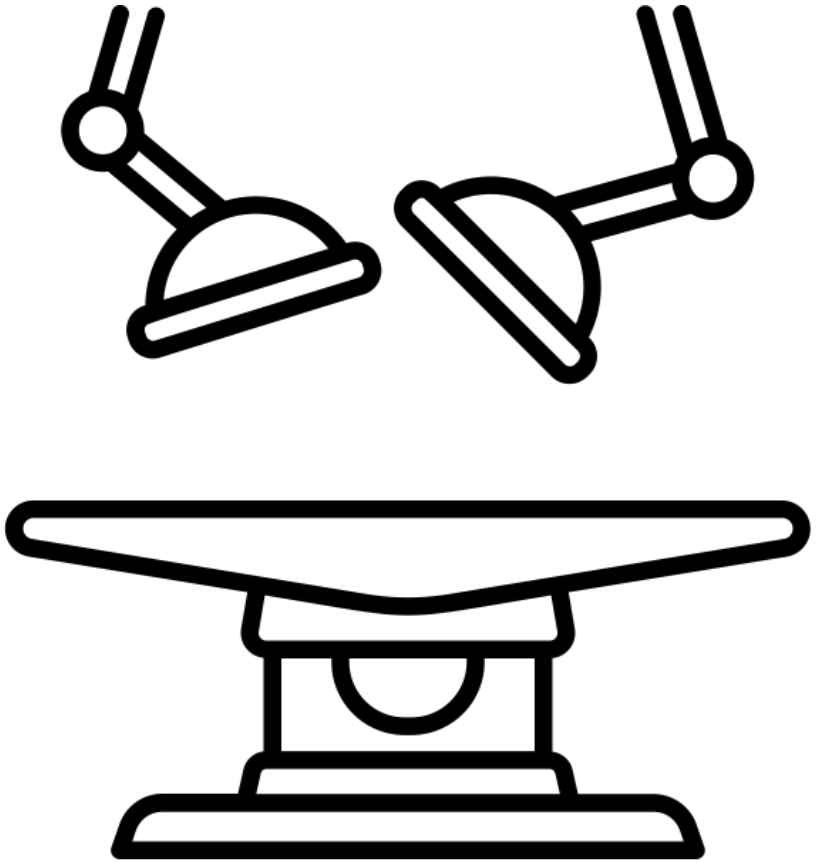
- Range: 1-10 days
- Median: 4 days
- No progression to gastric necrosis during this time interval



- Interventions:
  - Fluid resuscitation
  - Cardiac risk stratification
  - Cardiac stress test (if indicated)
  - Initiation of TPN

Postoperative Outcomes

- Median total length of stay was 7 days (95% CI 5-11).
- Median postoperative length of stay was 3.5 days
- Ten patients (23%) experienced major complications (Clavien-Dindo III-V).
- 4 patients were readmitted within 30 days (9%)
- One patient died within 30 days
  - Patient had significant pharyngeal swallowing deficits
  - Family did not want to pursue surgical feeding tube and opted for palliation



Conclusion

- Patients presenting with acute gastric volvulus can be successfully managed with step-wise endoscopic decompression followed by semi-elective repair
- Endoscopic gastric decompression may have the following benefits in hospitals with limited resources
  - Patients presenting after normal work hours may be resuscitated and temporized for an operation during normal hours
  - Hospitals that do not offer advanced laparoscopy may decompress the patient and transfer to a tertiary care center

Limitations

- Single institution
- Comparison to historic controls
- We excluded patients who did not receive an operation due to extremis or opting for palliative care

Future Directions

- Collect more preoperative data to determine risk factors for morbidity and mortality
- Study comparing decompression followed by surgery to surgery alone
- Determine a **standardized algorithm** for patients presenting with acute gastric volvulus
  - Some studies report similar outcomes without gastric decompression[1]
  - Opportunity to better describe the detorsion technique (one study reported a detorsion rate of 40%)
- This is an opportunity to **temporize** and **prevent** gastric ischemia – there were two patients who presented in extremis that did not get an operation
- Our institution is rural – this is relevant to temporization and transfer from smaller surrounding hospitals

References

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3. Tsang TK, Walker R, Yu DJ. Endoscopic reduction of gastric volvulus: the alpha-loop maneuver. Gastrointest Endosc. 1995 Sep;42(3):244-8. doi: 10.1016/s0016-5107(95)70099-4. PMID: 7498690.


Thank you