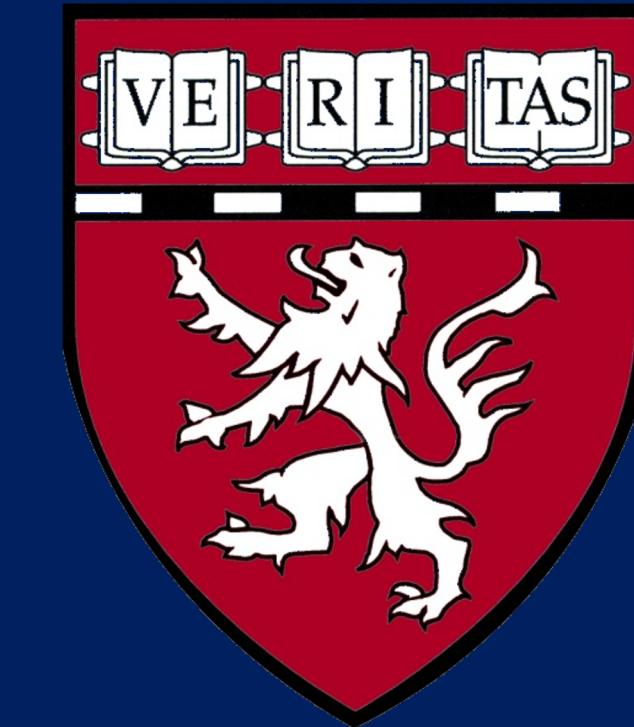




# Emergent Management of Acute Paraesophageal Hernias



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## BACKGROUND

- Acute paraesophageal hernias are considered a surgical emergency presenting in older patients with sudden, severe epigastric pain, vomiting, and nausea.
- Incarceration and subsequent strangulation or volvulus can occur leading to obstruction, ischemia, and/or perforation.
- Traditionally, emergent surgery is recommended upon presentation. However, emergent surgery should be on a case-to-case basis as temporizing with subsequent semi-urgent surgery leads to fewer complications, shorter ICU stay, and fewer operations.

## METHODS

- Retrospective analysis from 2012 to 2017 of patients who presented to the Emergency Department with an incarcerated paraesophageal hernia and underwent surgery at our tertiary care center.
- Patients split into two groups: Emergent operation (within 24 hours) and Urgent/Non-emergent operation (average time to surgery of 3.5 days)
- Emergent cases were selected on the basis of CT findings, an elevated WBC count, and failed NG tube placement without relief of symptoms
- Demographics and clinical outcomes were collected

## RESULTS

| Patient Demographics (n=24)            |             |
|----------------------------------------|-------------|
| Age, mean (SD)                         | 72.9 (12.9) |
| Male (%)                               | 7 (29.2%)   |
| Prior PEH repair (%)                   | 5 (20.8%)   |
| Previous Abdominal Operation (%)       | 7 (29.2%)   |
| GERD (%)                               | 11 (46.0%)  |
| Obesity: BMI over 30 (%)               | 6 (25.0%)   |
| Hypertension (%)                       | 13 (54.2%)  |
| Hyperlipidemia (%)                     | 10 (42.0%)  |
| Hypercholesterolemia (%)               | 6 (25.0%)   |
| Emergent Operation within 24 hours (%) | 13 (54.2%)  |
| Urgent/Non-emergent Operation (%)      | 11 (46.0%)  |
| Open Surgical Procedure (%)            | 19 (79.2%)  |
| Laparoscopic Surgical Procedure (%)    | 5 (20.8%)   |

Table 1: Patient Demographics

## RESULTS

| Operation and Outcomes         | Emergent Operation | Urgent Operation | P-value |
|--------------------------------|--------------------|------------------|---------|
| <b>Open Procedure (%)</b>      | 13 (100%)          | 6 (54.5%)        | 0.011   |
| Thoracoabdominal approach (%)  | 4 (30.8%)          | 1 (9.9%)         | 0.327   |
| Laparotomys (%)                | 7 (53.8%)          | 5 (45.4%)        | 1       |
| Thoracotomy (%)                | 2 (15.4%)          | 0 (0%)           | 0.482   |
| <b>Laparoscopic (%)</b>        | 0 (0%)             | 5 (45.4%)        | 0.011   |
| Gastropexy (%)                 | 4 (30.8%)          | 4 (36.4%)        | 1       |
| Gastrectomy (%)                | 2 (15.4%)          | 0 (0%)           | 0.482   |
| Funduplications (%)            | 4 (30.8%)          | 4 (36.4%)        | 1       |
| ICU stay, median (IQR)         | 1.5 (0.25-3)       | 0 (0-1)          | 0.039   |
| Return to OR (%)               | 4 (30.8%)          | 0 (0%)           | 0.098   |
| Significant Complications (%)* | 4 (30.8%)          | 1 (9.1%)         | 0.327   |
| Mortality (%)                  | 0 (0%)             | 1 (9.1%)         | 0.458   |
| Recurrence (%)                 | 1 (7.7%)           | 0 (0%)           | 1       |

\*Significant complications in the emergent group included esophagitis, DVT, esophageal obstruction, and duodenal stump leak. In the urgent group there were no complications but one death in a 98-year-old patient with a small bowel obstruction.

Table 2. Operative Intervention and Functional Outcomes for Emergent versus Urgent Paraesophageal Hernia Repair

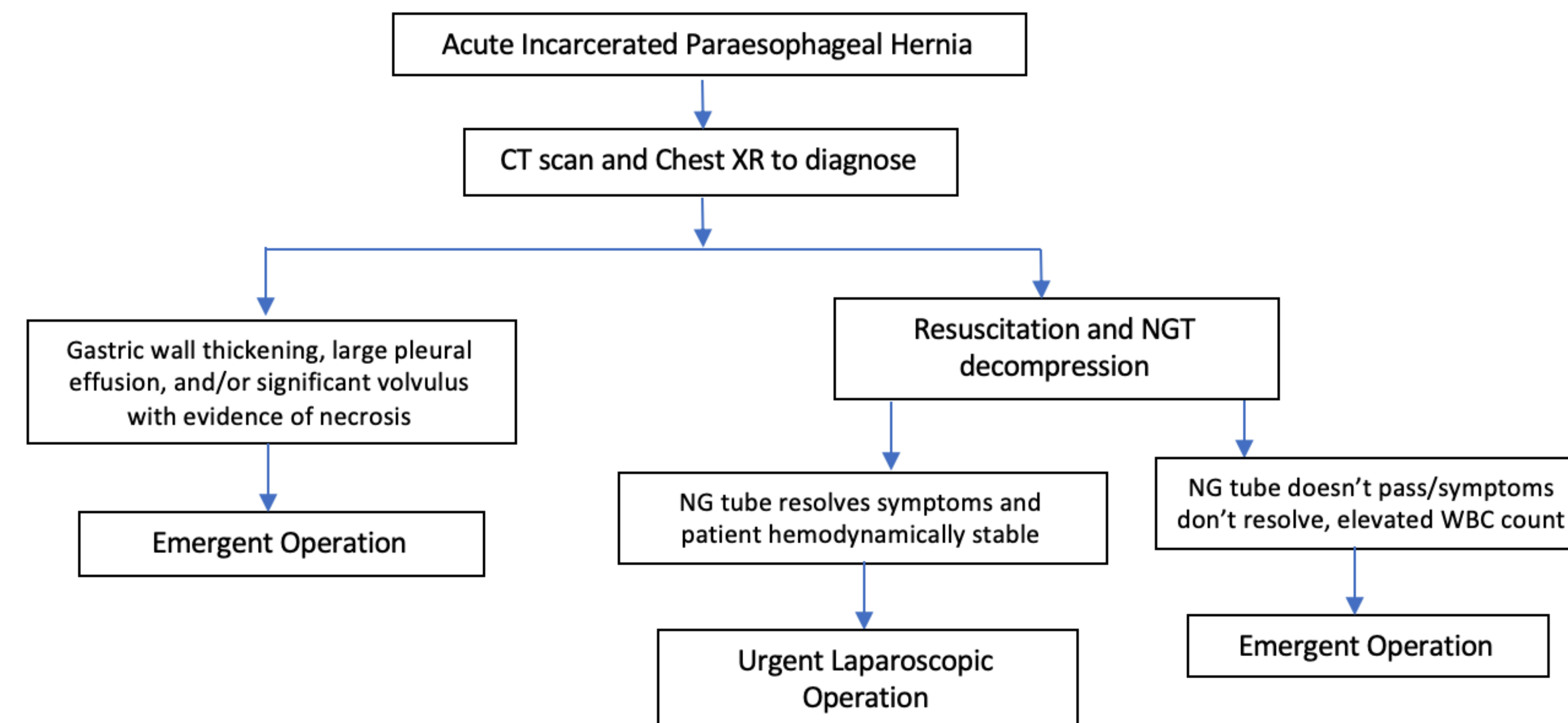


Figure 1: Management Algorithm for Acute Paraesophageal Hernias

## RESULTS

| Demographics/Comorbidities          | Emergent Operation (n=13) | Urgent Operation (n=11) | P-Value |
|-------------------------------------|---------------------------|-------------------------|---------|
| Age, mean (SD)                      | 70.1 (12.4)               | 76.3 (13.3)             | 0.25    |
| Male (%)                            | 4 (30.8%)                 | 3 (27.3%)               | 1       |
| Prior Paraesophageal Hernia Repair  | 3 (23.1%)                 | 2 (18.2%)               | 1       |
| Previous Abdominal Operation (%)    | 5 (38.5%)                 | 2 (18.2%)               | 0.386   |
| Gastroesophageal Reflux Disease (%) | 7 (53.8%)                 | 4 (36.4%)               | 0.444   |
| BMI over 30 (%)                     | 5 (38.5%)                 | 1 (9.1%)                | 0.166   |
| Hypertension (%)                    | 7 (53.8%)                 | 6 (54.5%)               | 1       |
| Hyperlipidemia (%)                  | 6 (46.2%)                 | 4 (36.4%)               | 0.697   |
| Hypercholesterolemia (%)            | 2 (15.4%)                 | 4 (36.4%)               | 0.357   |

Table 3: Demographics and Comorbidities

| Symptoms             | Emergent Operation | Urgent Operation | P-Value |
|----------------------|--------------------|------------------|---------|
| WBC count, mean (SD) | 14.95 (12.7)       | 9.9 (3.3)        | 0.192   |
| Vomiting (%)         | 11 (84.6%)         | 11 (100%)        | 0.482   |
| Nausea (%)           | 11 (84.6%)         | 8 (72.7%)        | 0.623   |
| Epigastric Pain (%)  | 11 (84.6%)         | 6 (54.5%)        | 0.182   |
| Fever (%)            | 1 (7.7%)           | 1 (9.9%)         | 1       |
| Chest Pain (%)       | 2 (15.4%)          | 2 (18.2%)        | 1       |
| SOB (%)              | 2 (15.4%)          | 4 (36.4%)        | 0.356   |

Table 4: WBC Count and Presenting Symptoms

## CONCLUSION/DISCUSSION

- Not all patients presenting with an acute paraesophageal hernia need emergent surgery
- Outcomes following semi-urgent surgery are better than emergent surgery.
- Acute incarcerated paraesophageal hernias should be managed on a case-to-case basis
- CT findings of gastric wall thickening, pleural effusion, or significant volvulus with evidence of necrosis are indicators of the need for emergent operation
- Resuscitation attempts can be made to stabilize the patient and allow the patient to “cool off” as it appears to lead to a lower risk of complication
- This includes a higher rate of the laparoscopic approach, decreased morbidity, shorter ICU stay, and fewer risks.