

Use of Laparoscopic Sutured Gastropexy in the Management of Gastric Volvulus in Patients at High Operative Risk



Colette S. Inaba MD, Hailey A. Theeuwes MS, Jennifer A. Minneman MD, Judy Chen-Meekin MD, Saurabh Khandelwal MD, Robert B. Yates MD, Brant K. Oelschlager MD, Andrew S. Wright MD

Background

Performing a laparoscopic paraesophageal hernia (PEH) repair for obstructive gastric volvulus is technically difficult and can require several hours of general anesthesia, which may not be tolerated by patients at high operative risk.

Gastropexy with or without gastrostomy tube has been proposed as technically simpler, faster, and less morbid approach to addressing obstructive gastric volvulus in a high-risk patient population (1-4). However, there is no consensus on the optimal gastropexy technique for obstructive gastric volvulus.

Purpose

- Describe our institution’s technique for laparoscopic gastropexy for the management of obstructive gastric volvulus in patients at high operative risk
- Report outcomes from our case series

Methods

Source: Retrospective review of a prospectively maintained database at the University of Washington Center for Esophageal and Gastric Surgery

Population: Patients with PEH and acute or subacute gastric volvulus, 2011-2019

- Operative Technique:
- Five ports in either supine or split-leg position (Figure 1)
 - Reduction of gastric volvulus without hiatal dissection
 - Multiple sutured gastropexies from the stomach to the diaphragmatic cruri and every 4-5 cm along the greater curve of the stomach all the way to the falciform ligament (Figure 2-3)
 - A gastrostomy tube was used instead of one of the gastropexy sutures early in the case series, but was avoided from 2015 onward due to increased risk of morbidity without clear benefit

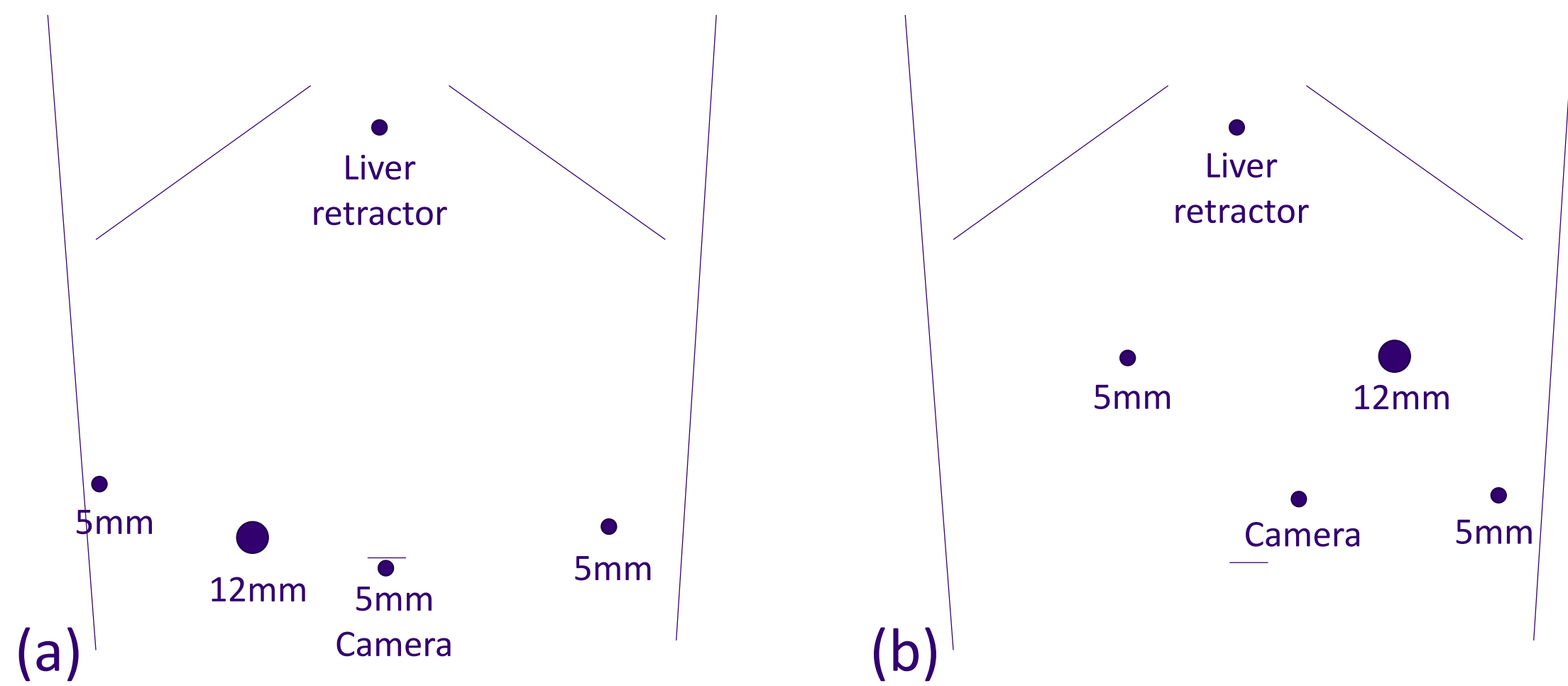


Figure 1
Port placement for (a) supine or (b) split-leg positioning

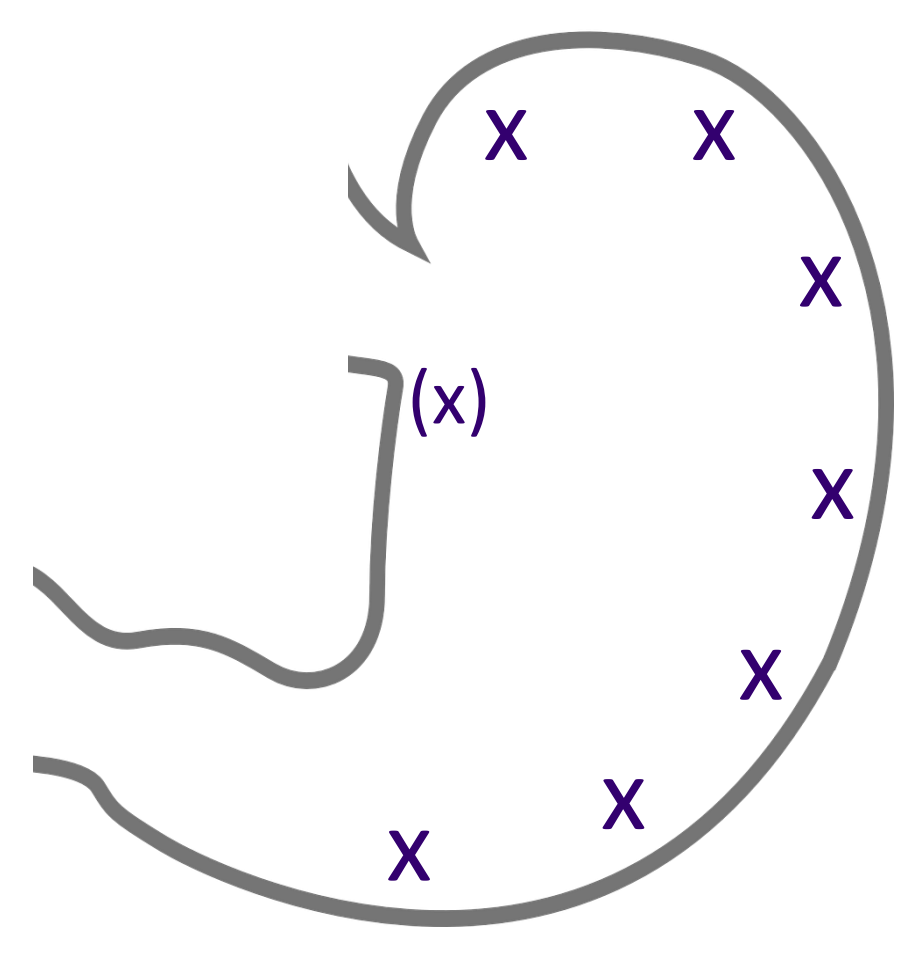


Figure 2
Sutured gastropexy sites

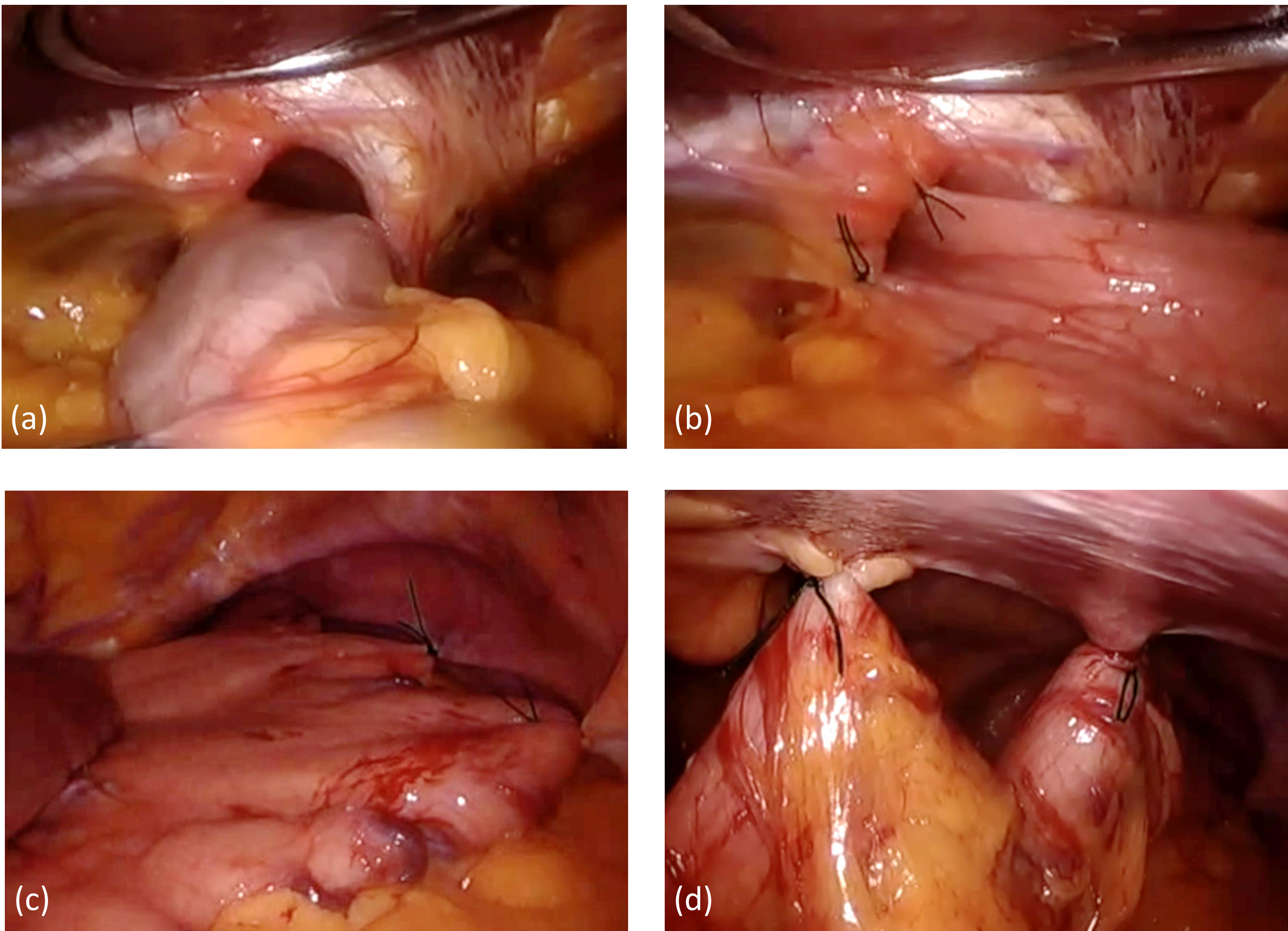


Figure 3
Intraoperative images of (a) initial PEH and after reduction, gastropexies to (b) diaphragmatic cruri and (c) lateral and (d) anterior abdominal wall.

Results

- This case series included 31 patients (4.9% of 638 PEH repairs during the study period)
- Complications included: readmission for dehydration and pleural effusions requiring thoracentesis (n=1); gastrostomy tube dislodgement and death from heart failure (n=1); pneumonia (n=4); upper GI bleed (n=3); pulmonary embolism (n=1)
- There were no recurrent episodes of volvulus
- Two patients who presented with acute volvulus and were managed with laparoscopic sutured gastropexy later underwent elective laparoscopic PEH repair for persistent symptoms after optimization of their comorbidities

Operative Risk Factors	N (%)
Age >75y	21 (71%)
Cardiovascular	24 (77%)
Pulmonary	18 (58%)
Renal	9 (29%)
Other	5 (16%)

Note: total >100% as patients had risk factors from multiple categories

Study Population Details	N = 31
Median age, y	82 (IQR 72-87)
Male	13 (42%)
White race	30 (97%)
Acute volvulus	12 (39%)
Subacute volvulus	19 (61%)
Gastrostomy tube placement	11 (35%)
Median operative time, min	65 (IQR 55-84)
Median postoperative length of stay, d	2 (IQR 1-4)

Conclusions

Laparoscopic sutured gastropexy is a feasible and efficient procedure involving less traumatic dissection than a formal PEH repair. It can be safely performed in patients with acute or chronic gastric volvulus who risk significant morbidity from a formal PEH repair, and can obviate the need for gastrostomy tube placement.

References

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