TITLE: COST ANALYSIS AND 1-YEAR RECURRENCE RATES OF ROBOTIC VERSUS LAPAROSCOPIC PARAESOPHAGEAL HERNIA REPAIR

INTRODUCTION:

For paraesophageal hernia repairs (PEHR), cost continues to be a significant barrier to more widespread adoption of a robotic approach, regardless of whether safety and efficacy are equivalent. Herein, the authors aim to determine the difference in cost of a robotic (R-) vs laparoscopic (L-) approach for PEHR.

METHODS:

Patients 18 years old and older who underwent PEHR between July 2016 and June 2021 at a university health network were included. Variables of interest included 30-day outcomes, 1 year recurrence rates, and various cost parameters including: hospital length of stay, OR time, chargeable supplies and implants, nonchargeable supplies, and indirect cost. Statistical significance was set to $p < .05$.

Antireflux Procedure Total Cost (Median, Range)	Elective		
	R-PEHR	L-PEHR	p-value
Magnetic Sphincter Augmentation (LINX)	$36,485.58 ($21,388.48 - $47,353.55) (n = 32)	$26,210.75 ($22,005.65 - $32,572.44) (n = 20)	< .001
Fundoplication	$25,654.27 ($18,039.68 - $48,390.27) (n = 112)	$20,450.83 ($10,630.45 - $58,223.20) (n = 142)	< .001
No Antireflux Procedure	$33,437.49 ($11,874.89 - $168,862.70) (n = 42)	$23,601.52 ($10,835.02 - $149,542.02) (n = 42)	.002

SUMMARY:

Complication rates and **surgical outcomes** are **similar** between a **laparoscopic and robotic** approach for **paraesophageal hernia repair. Cost** of a **robotic repair is significantly greater** (Robotic = $29,706.88 vs. Laparoscopic = $23,457.07, $p < .001$)

AUTHORS: Wayne B. Bauerle, MD; Daniel Franey, MD; Anthony Allsbrook, DO; Joseph Evans, MD; Vanessa Reese, MD; Jill Stoltzfus, PhD; Meredith Harrison, MD; William Burfeind, MD; Andrew M. Brown, MD

RESULTS:

405 patients were included in the study (n=188 for R-, n=217 for L-). Significant differences were observed in the type of anti-reflux procedure performed ($p < .001$), use of mesh (R- 70.2% vs. L- 59.0%, $p = .019$), and whether a Collis gastroplasty was performed (R- 4.3% vs. L- 10.2%, $p = .023$). No differences in 30-day readmission or reoperation rates, Clavien-Dindo complication rates, or 1-year hernia recurrence rates were observed. For elective cases; regardless of whether an antireflux procedure was performed, a robotic approach was associated with a significantly greater cost ($p <.002$). Comparing all procedures, a statistically significant increase in cost was seen with a robotic approach (R- $29,706.88 vs. L- $23,457.07, $p < .001$)

CONCLUSIONS:

Complication rates and surgical outcomes between a R- vs. L- approach for PEHR are similar, however, cost is significantly increased when a robotic approach is utilized. Future prospective studies are needed to delineate which drivers of cost with the robotic platform are modifiable.