

INTRODUCTION

Achalasia cardia is characterized by impaired LES relaxation and absent peristalsis. High-resolution manometry (HRM) aids diagnosis, with an IRP threshold >15 mmHg. Although laparoscopic Heller myotomy with partial fundoplication is a standard treatment, up to 45% of patients exhibit normal lower esophageal sphincter pressure (LESP). This study explores whether LESP influences outcomes post-myotomy.

AIM

To assess the relationship between preoperative LESP and surgical outcomes, including symptom relief and quality of life, in patients with achalasia cardia undergoing upfront laparoscopic Heller myotomy (LHM).

METHOD

Retrospective analysis (Jan 2019–Jun 2023) of 52 patients undergoing upfront LHM. Patients were grouped by LESP: **normal** (≤35 mmHg, n=30) vs **high** (>35 mmHg, n=22). Pre- and post-operative evaluations included Eckardt score (ES), Achalasia-Specific QoL (ASQ), SF-36, and HRM. Surgical failure was defined as ES ≥4, ASQ ≥16, and IRP >15 mmHg. Statistical analysis used chi-square, Fisher's exact, t-test/Mann-Whitney U (p<0.05 considered significant).

RESULTS

Demographics: High LESP patients were younger (<50 yrs; p=0.013) and had higher mean IRP (40.90 vs 21.41 mmHg, p=0.002).

Symptom Scores: High LESP group had higher post-op Eckardt (2 vs 0.5, p=0.002) and ASQ scores (14 vs 11, p=0.005). QoL (SF-36): High LESP patients had worse health changes (p=0.025) and more pain (p=0.048).

Subgroup Findings: Greater dysphagia and regurgitation in high LESP group (p<0.05).

Failure Rate: Higher in high LESP group (27.3% vs 6.7%, p=0.058), predominantly younger patients.

Parameters	Normal LESP (n=30)	High LESP (n=22)	p-value
Demographic parameters			
Age (Years)			0.013
<50	18 (60%)	20 (90.90 %)	
>50	12 (40%)	2 (9.09%)	
Pre- ES	7.13 ± 1.7	7.09 ± 1.37	0.925
Pre-ASQ	26.20 ± 3.295	26.86 ± 2.64	0.439
IRP (mm Hg)	21.41 ± 4.52	40.90 ± 31.51	0.002
Types (Chicago):			
I	1 (1.9%)	0	
II	28 (53.8%)	20 (38.5%)	
III	1 (1.9%)	2 (3.8%)	
Perioperative Outcomes			
Operating time (minutes)	89 ± 14.16	86.86 ± 10.56	0.554
Blood loss (ml)	33 ± 9.0	32.05 ± 10.87	0.732
Operative procedure			1.00
LHM	1 (3.3%)	1 (4.5%)	
LHM + Dor's FP	29 (96.7%)	21 (95.5%)	
Length of myotomy (cm)	7.97 ± 6.15	7.68 ± 4.77	0.077
Mucosal perforation	0	1	0.238
Post-ES score (median, range)	0.50 (0-4)	2 (0-6)	0.002
Post-ASQ score (median, range)	11 (11-28)	14 (10-26)	0.005
Postoperative short form (SF-36) scale scores			
Physical function	96.7 ± 7.91	94.8 ± 9.45	0.436
Role-physical	94.2 ± 12.60	86.4 ± 21.45	0.106
General Health	88 ± 14	81.1 ± 18.51	0.134
Social Function	93.3 ± 15.30	93.8 ± 13.22	0.919
Health Changes	94 ± 10.70	85.2 ± 16.65	0.025
Bodily pain	95.8 ± 6.54	89.8 ± 14.53	0.048
Mental Health	93.3 ± 8.87	89.5 ± 14.63	0.241
Role-emotional	94.4 ± 15.37	89.4 ± 18.93	0.294
Vitality	86.5 ± 10.60	88.9 ± 10.23	0.424
Post-operative Eckardt score			
Dysphagia	14 (46.7%)	16 (72.7%)	0.007
Regurgitation	4 (13.3%)	12 (54.5%)	0.011
Chest Pain	0	3 (13.6%)	0.052
Post-operative ASQ score			
Dysphagia to vegetables and fruits	3 (10%)	9 (40.9%)	0.017
Dysphagia to rice	6 (20%)	14 (63.6%)	0.001
Dysphagia to clear liquids	2 (6.7%)	8 (36.4%)	0.012
Need liquids during a meal	6 (20%)	10 (45.4%)	0.049
Chest Pain during meal	0	3 (13.6%)	0.070
Heartburn	3 (10%)	2 (9.1%)	1.00
Prolonged eating time	1 (3.3%)	4 (18.2%)	0.149
Limited lifestyle	1 (3.3%)	4 (18.2%)	0.149
Unsatisfied with lifestyle	4 (13.3%)	10 (45.4%)	0.013

CONCLUSIONS

Patients with normal LESP experienced significantly improved surgical outcomes, characterized by reduced dysphagia and regurgitation symptoms, lower postoperative Eckardt scores, improved Achalasia-Specific Quality of Life (ASQ) scores and enhanced quality of life (QOL) on the SF-36 questionnaire. .

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Comparison of surgically failure cases (ES ≥4, ASQ≥16) between normal and high LESP groups (n=52)			
Parameters	Normal LESP (n=2)	High LESP (n=6)	p-values
Comparison of demographic and preoperative parameters:			
Surgical Failure	2/30 (6.70%)	6/22 (27.3%)	0.058
Age (Years)			0.107
<50	0	5 (83.3%)	
>50	2 (100%)	1 (16.7%)	
Sex			0.206
Female	2 (100%)	3 (50%)	
Male	0	3 (50 %)	
Pre-ES (median, range)	4.5 (3-6)	6 (6-9)	0.104
Pre-ASQ (median, range)	23.50 (18-29)	29 (28-30)	0.086
Comparison of intraoperative and postoperative parameters:			
Operating time (minutes)	88 ± 24.45	84.33 ± 9.93	0.756
Blood loss (ml)	27.50 ± 10.60	31.67 ± 11.69	0.673
Myotomy length (cm)	8.00 ± 0.00	7.50 ± 0.54	0.267
Mucosal perforation	0	1 (12.5 %)	0.537
Post-ES (median, range)	3.5 (3-4)	4 (4-6)	0.184
Post-ASQ (median, range)	23 (18-28)	25 (20-26)	0.707
Comparison of postoperative QOL (SF-36):			
Physical function	87.50 ± 17.68	85.83 ± 11.14	0.875
Role-physical	75.00 ± 0.00	70.83 ± 29.22	0.855
General Health	82.50 ± 24.74	58.33 ± 15.38	0.138
Social Function	100 ± 0.00	79.17 ± 18.81	0.188
Health Changes	87.50 ± 17.67	66.67 ± 12.91	0.114
Bodily pain	83.57 ± 8.83	69.58 ± 9.80	0.122
Mental Health	96.00 ± 5.65	70.67 ± 13.77	0.051
Role-emotional	83.35 ± 23.54	66.68 ± 21.09	0.379
Vitality	87.50 ± 10.60	75.83 ± 6.64	0.104

KEY TAKEAWAYS

- Normal LESP is associated with better surgical outcomes and quality of life.
- High LESP, especially in younger patients, correlates with persistent symptoms and higher failure rates post-myotomy.

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