EE44

Outcomes and Cost-Effectiveness of Hospital Outpatient vs. Ambulatory Surgery Center Lumbar Decompression Surgery

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Background

Outpatient spinal surgeries in Ambulatory Surgery Centers (ASCs) have gained traction due to their potential cost efficiencies and improved perioperative processes.1-3 This study aims to compare the cost-effectiveness and patient outcomes of lumbar laminectomies performed in hospital settings versus ASCs.

Methods

- A retrospective analysis was conducted on 771 patients who underwent 1 or 2-level outpatient laminectomy between 2019 and 2023
- Patient demographics, 90-day and one-year clinical and patient reported outcomes (PROs), and one-year episode of care costs were compared between patients undergoing surgery in the hospital outpatient and ASC settings using univariate analyses
- A one-year cost-effectiveness analysis was performed using the EQ-5D to measure quality adjusted life years (QALYs)

Results

Patient Demographics, Levels Decompressed and Payor Information

	Hospital (n=354)	ASC (n=417)	P -Value
Demographics			
Age	58.0 ±16.2	56.8 ±14.5	0.300
Female	153 (43.2)	173 (41.5)	0.680
BMI	30.9± 6.95	29.2 ±5.05	**<0.001**
ASA	2.39 ±0.61	2.26 ±0.56	**0.003**
Levels			**<0.001**
% 1 Level	293 (82.8)	414 (99.3)	
% 2 Level	61 (17.2)	3 (0.7)	
Payor			0.656
% Medicare	105 (29.7)	120 (28.8)	
% Commercial	241 (68.1)	291 (69.8)	
% Other	8 (2.3)	6 (1.4)	

Surgical Cost and Postoperative Utilization and Cost

	Hospital (n=354)	ASC (n=417)	P -Value
Surgery Cost	$8,060 ± 107	$4,529 ± 41	**<0.001**
90-Day ED/Readmission			
ED Return (%)	22 (6.2)	18 (4.3)	0.307
Readmission (%)	4 (1.1)	8 (1.9)	0.555
ED Return/Readmission Cost	$2,515 ± 2,337	$3,380 ± 4,032	0.399
1-Year Reoperation			
Reoperation (%)	25 (7.1)	24 (5.8)	0.553
Reoperation Cost	$25,506 ± 23,583	$13,709 ± 13,591	**0.037**
1-Year Spine Visit			
Spine Visits (%)	176 (49.7)	202 (48.4)	0.779
# Visits	1.72 ±1.12	1.54 ±0.93	0.099
Visit Cost	$192 ± 130	$167 ± 114	0.056
1-Year Imaging Encounter			
Imaging Encounters (%)	100 (28.2)	92 (22.1)	0.058
# Imaging Encounters	1.88 ±1.50	1.47± 0.83	**0.019**
Imaging Cost	$235 ± 191	$190 ± 141	0.060
1-Year Injections			
Injections (%)	26 (7.3)	31 (7.4)	1
# Injections	1.38 ±0.70	1.26± 0.51	0.447
Injection Cost	$669 ± 436	$681 ± 360	0.908
1-Year Postoperative Care Cost	$2,168 ± 9,202	$1,133 ± 4,747	0.056
Total 1- Year Cost	$10,229 ± 9,202	$5,662 ± 4,748	**<0.001**

Cost Utility Analysis

	Hospital (n=41)	ASC (n=76)	P-Value
Surgery Cost	$8,089 ±122	$4,527± 37	**<0.001**
Postoperative Care Cost	$7,174 ±18,371	$2,609 ± 7,183	0.133
Total Cost	$15,263± 18,375	$7,136 ±7,185	**0.009**
Baseline EQ-5D	0.58 ±0.10	0.59± 0.10	0.890
1-Year EQ-5D	0.68± 0.11	0.69± 0.11	0.557
Δ QALY	0.10± 0.13	0.11± 0.10	0.671
Total Cost/QALY Gained	**$152,630**	**$64,873**	

Conclusion

The findings support the cost-effectiveness and safety of ASCs for selected patient populations undergoing lumbar laminectomy. ASCs offer substantial cost savings without compromising patient outcomes, making them a viable alternative for appropriately selected patients.

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References
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