LAPROSCOPIC HELLER MYOTOMY : COMPARISON OF COST AND OUTCOME

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Introduction

A **minimally invasive approach** to **Heller myotomy** is currently the standard surgical intervention for achalasia, a neurodegenerative that impairs relaxation of the lower esophageal sphincter. **Robotic Heller myotomies**, however, have gained considerable favor amongst surgeons possessing **several advantages** over laparoscopy including **better dexterity and improved visualization**.

Objective



This multicenter review aims to **compare** the hospital **length of stay** and overall procedure-related **charges** between laparoscopic and robotic Heller myotomies

Methods

ICD10 procedure codes were used to capture the laparoscopic and robotic cases

Cases were included with **diagnostic codes** referring to Achalasia of cardia, diverticulum of esophagus, acquired and dyskinesia of esophagus



Florida Agency for Healthcare Administration Inpatient Discharge Data (**AL AHCA**)

2015



2019

R studio and STATA statistical analysis software were used to perform the analysis

Univariate analysis was performed to compare **length of stay, and charges** between the laparoscopic and robotic groups



Using a **1:1** ratio the laparoscopic and robotic groups were **matched** for age, gender, race, ethnicity, Charlson comorbidity index, admission source and admission priority for a more **comparative analysis**

Results



617 procedures were identified (471 laparoscopic and 146 robotic), at 71 hospitals of which 37 had robotic capabilities and were performed by **135 surgeons**

From the univariate analysis, it was observed that there was **no significant difference** between the **length of stay** for the two procedure types (p-value >0.05)

However, **charges were statistically significant** and lower for laparoscopic versus robotic heller myotomy in the unmatched and the matched data (all p-values <0.001)

	Unmatched Data		Matched Data	
	Laparoscopic	Robotic	Laparoscopic	Robotic
	n = 471	n = 146	n = 146	n = 146
Length of Stay*	3.45 ± 5.95	3.92 ± 4.68	3.02 ± 5.13	3.92 ±4.68
Total Gross Charges	79063	109880	77843	109880
Operating Room Charges	28820	45835	28037	45835
Medical & Surgical Supply Charges	8559	14404	9352	14404

Data presented as mean ± SD, Charges in U.S. dollars; values rounded to next digit
*All comparisons of length of stay were not statistically significant p>0.05

Limitations

A **bigger sample** with key data elements like cost, length of procedure, readmission, pain score, opioid usage, surgeon capabilities with regards to performing either a robotic or laparoscopic procedures would **augment the analysis leading to actionable insights**

Conclusion

Robotic heller myotomy is associated with increased index hospital costs and **overall procedure-related charges** while there is no statistical significance in length of stay, whereas laparoscopic heller myotomy is the **more cost-effective** approach to Achalasia. This research will prompt further inquiry into the role of robotic in foregut surgery

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