The Impact of the COVID-19 Pandemic on the Length of Stay in Elective Laparoscopic or Hand Assisted Colectomy

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Introduction

The COVID-19 pandemic has significantly impacted healthcare systems, leading many hospitals to implement continuously changing policies to limit the spread of COVID-19. The goal of this study was to evaluate any difference in length of stay (LOS) that may exist for patients undergoing elective laparoscopic or hand assisted colectomy before and during the COVID-19 pandemic. Due to strict visitor policies, widespread concern for hospital-acquired COVID-19 and system wide pressures caused by the COVID-19 pandemic, it was hypothesized that post-COVID patients would have decreased LOS.

Methods

Patients who underwent elective laparoscopic or hand assisted colectomy between 2015 and 2020 were reviewed retrospectively.

Post-COVID admissions were defined as those after March 1, 2020. LOS was categorized into admissions <5 days or ≥5 days. Variables were evaluated for association with LOS by Chi-square or Student's t test as appropriate. Variables with $p<0.200$ after univariate analysis were considered for inclusion in multivariate logistic regression modeling.

Results

258 patients were included in the study with 55 patients defined as post-COVID patients. Patients who developed any postoperative complication had significantly increased LOS by both univariate and multivariate analysis.

No significant difference in LOS was found between pre-COVID and post-COVID patients. There were 27 post-COVID patients that were unable to have visitors during their hospitalization due to hospital policy, however no significant difference in LOS was found as compared to post-COVID patients that were allowed visitors.

Univariate Analysis by LOS

	N (%)	OR	95% CI	*p* value
After COVID **Before COVID**	55 (29.7) 130 (70.3)	1.636	0.855-3.132	0.135
Allowed Visitors **No Visitors**	158 (85.4) 27 (14.6)	0.524	0.207-1.328	0.167
Any Complications **No Complications**	66 (35.7) 119 (64.3)	12.941	3.921-42.713	**<0.001**
Any Comorbidities **No Comorbidities**	130 (70.3) 55 (29.7)	0.561	0.289-1.088	0.085

Multivariate Analysis by LOS

	OR	Standard Error	95% CI	*p* value
Post-COVID	1.590	0.348	0.804-3.145	0.183
Complication	12.253	0.611	3.701-40.570	**<0.001**
Comorbidity	0.663	0.357	0.329-1.337	0.251

Conclusions

It was hypothesized that patients who underwent elective laparoscopic or hand assisted colectomy during the COVID-19 pandemic would have decreased LOS, however no significant difference was found between pre-COVID and post-COVID LOS.

As the COVID-19 pandemic continues to impact healthcare systems, this study will be expanded to evaluate the impact this has on the LOS in a wider variety of surgical cases.