

Does Operative Time Effect Short Term Outcome in Complex Robotic Colon and Rectal Resection in High Volume Surgeon



L. Rashidi, MD; M. Linders, MS, OMS-III
MultiCare Healthcare System

Introduction

There remains controversy concerning increased operative time and increased patient complications. Multiple analyses have shown increased operative time thresholds exceeding 120 minutes or more tend to have increased risk of complications.

Robotic techniques have improved the outcomes of colorectal surgery; however, there are no specifications on the effect of prolonged operations on complex cases and patient short-term outcome.

The objective was to evaluate the short-term outcomes in complex procedure compared to operative time in a surgeon who has passed their learning curve in robotic surgery.

Methods

Single institution study performed by one high-volume colorectal surgeon. Data abstracted after 200 cases between 2018-2019, specifically for complex colorectal cases. Any procedure with 22 modifier CPT , considered complex case.

Demographics and clinical elements were collected. Cases were grouped based on operative time (less than 2 hours vs. more than 2 hours).

Analyzed outcomes included length of stay, return of bowel function, readmission, rate, conversion rate, and short-term clinical outcomes.

Results

We identified 60 complex cases that met inclusion criteria. Average age was 53±17 years, 53% (34) were females. There was no difference in BMI and ASA score. Cancer was the most common indication for surgery (56%). Robotic low anterior resection was most common operation. (Table 1)

When comparing operative time over 2 hours vs. less than 2 hours there was no statistical difference in length of stay (1.70 vs. 2.02 days p=0.1), readmission rate (2 vs. 3 days P= 0.17), complication rate (P= 0.98) and overall return of bowel function (1.1 vs 1.3 days, p=0.92).

Table 1: Operative Time and short term outcomes

	Operative Time < 120	Operative Time > 120	
	Minutes	Minutes	P- Value
Male	32	28	0.1
Age	54	59	0.2
BMI > 30	31	29	0.4
Cancer (%)	28	32	0.11
LOS (Days)	1.70	2.2	0.1
Readmission (Days)	2	3	0.17
Complication (%)	1	1.4	0.98
Return of bowel function (Days)	1.3	1.1	0.92

Conclusion

Surgeons who have passed their learning curve, increased operative time in complex cases was not associated with increased complications.

Analyses are limited in inability to adjust for all patient factors. Additional hierarchical multivariate analyses at the surgeon level would be important to examine this relationship further.

References

Cheng H , Clymer JW, Po-Han Chen B, Sadeghirad B, Ferko NC, Cameron CG, Hinoul P. Prolonged operative duration is associated with complications: a systematic review and meta-analysis. J Surg Res. 2018 Sep;229:134-144.