



Comparison Between Robotic-Assisted and Laparoscopic Cholecystectomy in a Small Community Teaching Hospital



Shogik Abramyan MD¹, Stephen Capone MS^{1,2}, Christina Cuoccio MD¹, Romulo Genato MD¹, Luca Milone MD¹
1. Division of Minimally Invasive and Robotic Surgery, Department of Surgery, The Brooklyn Hospital Center, Brooklyn NY; 2. St. George's University School of Medicine, Grenada, WI

Introduction

We aim to compare the safety and efficacy of robot-assisted and laparoscopic cholecystectomy in a small community hospital. Debate continues regarding the use of robot-assisted cholecystectomy when compared to traditional laparoscopic surgery. While most current research is focused on large academic centers^{1,2}, we present single-surgeon data from a small community teaching hospital.

Table 1: Indications for Surgery

Indication	Laparoscopic	Robot-Assisted
Acute Cholangitis	2	0
Acute Cholecystitis	30	18
Chronic Cholecystitis	2	9
Gangrenous Cholecystitis	4	0
Symptomatic Polyp	1	1
Symptomatic Cholelithiasis	16	22
Gallstone Pancreatitis	7	4
Biliary Colic	3	0
Chronic Abdominal Pain	1	0
Total	67	54

Methods

A retrospective chart review was performed and patients who underwent either a laparoscopic or robot-assisted cholecystectomy between July 2017 and June 2019 were identified. Both elective and emergent cases were included. A total of 129 patients were identified; 8 were disqualified due to incomplete clinical data or laparotomy. All surgical procedures were performed by the same attending physician. Resident physicians assisted all laparoscopic and most robot-assisted surgeries.

Results

Patients were 71.21% vs. 79.63% female, with an average age of 46.73 vs. 44.85 years and BMI of 31.42 vs. 33.83 for laparoscopic and robot-assisted, respectively. Indications for cholecystectomy are noted in Table 1. Statistical comparison between groups is summarized in Table 2. Bile spillage and complications, postoperative readmissions, and Emergency Department visits are summarized in Table 3. No surgical site infections were seen with either procedure.

Conclusions

Here we show that robot-assisted cholecystectomy is a safe and efficacious alternative to traditional laparoscopic surgery at a small community hospital with a residency program.

References

- Breitenstein S, et al. doi:10.1097/SLA.0b013e318172501f
- Lee EK, et al. doi:10.4174/astr.2017.93.1.27

Table 2: Summary of Statistics

	Laparoscopic	Robot-Assisted
Surgical Time (min)		
Mean	115	149
Range (std dev)	58-274 (37.68)	79-392 (52.69)
Time to Discharge (days)		
Mean	1.19	0.64
Range (std dev)	0-6 (1.663)	0-5 (1.257)
95% CI	0.796 to 1.59	0.307 to 0.977

Table 3: Complications and Readmissions

	Laparoscopic	Robot-Assisted
Complications		
Bile Spillage	21 (31.34%)	17 (31.48%)
Serosal Tear	1 (1.49%)	0
Incarcerated Umbilical Hernia	1 (1.49%)	0
Readmissions		
Abdominal Pain	5 (7.46%)	0
Nausea	1 (1.49%)	0
Pancreatitis	1 (1.49%)	0
Biloma	1 (1.49%)	0
Urinary Frequency	0	1 (1.85%)
Emergency Department Visits (per patient)		
Once	10 (14.93%)	5 (9.26%)
Twice	2 (2.99%)	0