Trends in Operative Time and Patient Outcomes in Robotic Colostomy Reversal: Surgeons Short-term Pain for the Patients Long-term Gain

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Introduction

- The use of robotic surgery is growing rapidly
- Robotic surgery is associated with shorter hospital stays and earlier return of bowel function
- More research is needed to assess colorectal-specific outcomes
- Colostomy reversal is traditionally performed as open operation
- The purpose of this study was to assess outcomes in patients undergoing robotic-assisted colostomy reversal

Methods

- Single institution case series was performed
- Patients who underwent robotic colostomy reversal from Jan 2020 to Sept 2023 were included
- Demographics, pre-, intra-, and post-operative data were collected

Results

Patient Demographics

	All Patients (n=32)
Age at Diagnosis ([%])	
Mean (years of age)	56.9
Median (years of age)	60.0
Sex (n[%])	
Male	20 (62.5%)
Female	12 (37.5%)
Race (n[%])	
White	28 (87.5%)
Black	1 (3.1%)
Hispanic	2 (6.2%)
Asian	1 (3.1%)

	All Patients (n=32)
Co-Morbidities	
Hypertension	13 (40.6%)
DMII	2 (6.3%)
CHF	1 (3.1%)
CKD	2 (6.3%)
COPD	2 (6.3%)
OSA	5 (15.6%)
Current Smoker	2 (6.3%)
Former Smoker	9 (28.1%)
Independent Functional Status	31 (96.9%)
Dependent Functional Status	1 (3.1%)

Etiology of Colostomy

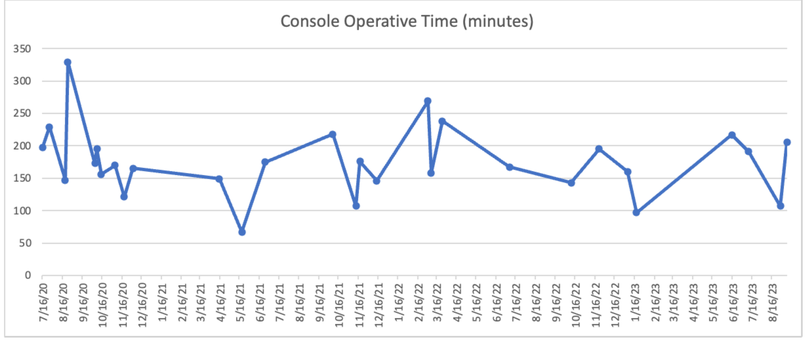
Perforated Diverticulitis	22 (68.8%)
Perforated/Obstructing Colon Malignancies	4 (12.5%)
Perforations from Acute Crohn's Flare	2 (6.3%)
Traumatic Colon Injuries	2 (6.3%)
Obstructing Diverticular Stricture	1 (3.1%)
Fecal Diversion for Perineal Wound	1 (3.1%)

Perioperative Factors

- 18.9% of cases had pre-operative ureteral stent placement
- 6.3% of cases (2) were converted to open

Operative Time

Mean Robotic Console Time	172 minutes	
Mean Total Operative Time w/ Ureteral Stenting	347 minutes	*p=0.017*
Mean Total Operative Time w/ out Ureteral Stenting	257 minutes	



- No statistical increase or decrease in robotic console time (p=0.522) or overall total operative time in either the ureteral stented (p=0. 566) or non-stented groups (p=0.791)

	All Patients (n=32)
Post-operative Complications (n[%])	
Post-op Bright Red Blood Per Rectum	2 (6.3%)
Post-op Bleeding Requiring Blood Transfusion	1 (3.1%)
Anastomotic Leaks	0 (0.0%)
Return to Operating Room*	1 (3.1%)
Superficial SSI	1 (3.1%)
Deep Organ Space SSI/Intra-abdominal Abscess	0 (0.0%)

**Dusky ileostomy with no output requiring ileostomy revision*

Post-operative Milestones	
Mean Return of Bowel Function (flatus or BM)	2.1 days
Mean Length of Stay	4.4 days
Proportion of Patients Discharged within 5 days	90.7%
Re-admission Rates	
Re-admission within 30 Days of Discharge	0 (0.0%)
Re-admission within 90 Days of Discharge	1 (3.1%)

Discussion

- Robotic colon surgery after urgent open laparotomy is a safe and feasible option with a low incidence of complications
- OR time remains long, primarily due to the need for minimally-invasive lysis of adhesions
- Larger studies are needed to further validate these findings

References

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