Robotic Approach to Surgical Management of Small Bowel Obstruction is Safe and Feasible: A Case Series

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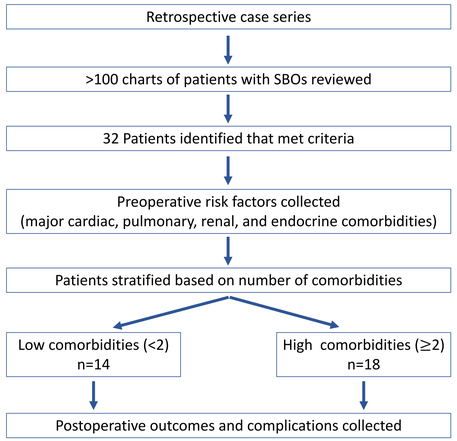
Introduction

- Operative management of small bowel obstructions (SBOs) has historically consisted of laparotomy and open adhesiolysis[1]
- With increased acceptance and surgeon familiarity with laparoscopy, this minimally invasive approach became increasingly popular for adhesiolysis[1]
- Robotic surgery has become a more widespread technique in many surgical specialties, often with improved outcomes and reduced complications[2-4]
- The risk of bowel injury is often lower with robotic than laparoscopic surgery[5] – this is particularly important for surgeries that carry high risk for missed enterotomies such as difficult adhesiolysis
- There are no studies to date that describe the outcomes and practicality of robotic surgery for management of SBOs

Objectives

- To present the results of a case series from our center in which robotic surgery was used to manage SBOs
- To demonstrate the safety and feasibility of using the robotic approach in SBOs

Methods



Results

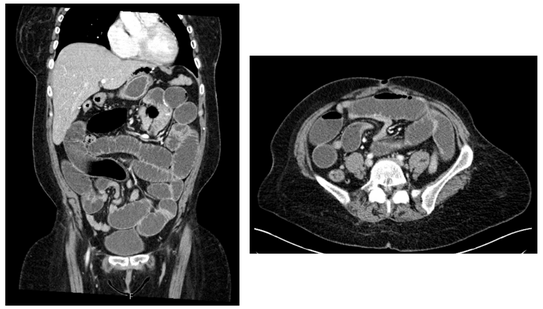


Figure 1. Computed Tomography (CT) scan of the abdomen and pelvis; coronal view (left); axial view (right).

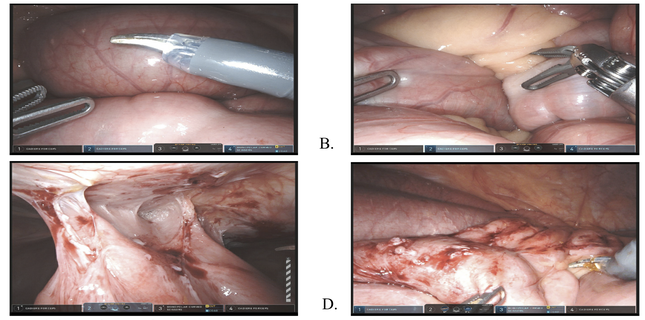


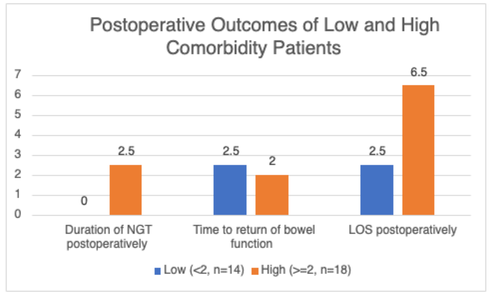
Figure 2. (A) Initial view after gasless laparoscopic entry technique and robot docking; (B) identification of small bowel caliber change; (C) robot-assisted lysis of adhesions using monopolar scissors; (D) completion of lysis of adhesions.

Postoperative Outcomes and Complications of Low vs High Comorbidity Patients after Laparoscopic Robot-Assisted Adhesiolysis

	Low Comorbidities (< 2 comorbidities, n = 14)	High Comorbidities (≥ 2 comorbidities, n = 18)
Duration of NGT* postoperatively (days)	0	2.5
Time to return of bowel function (days)	2.5	2
LOS* postoperatively (days)	2.5	6.5
Number of complications	1	6
Number of recurrences	0	2
Number of deaths	0	1
Number of reoperations	1	2

*NGT, nasogastric tube. LOS, length of stay

A.



B.

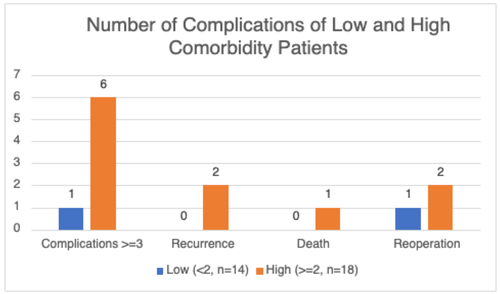


Figure 3. Postoperative outcomes (A) and number of complications (B) for patients with low number versus high number of comorbidities after laparoscopic robot-assisted adhesiolysis. NGT, nasogastric tube. LOS, length of stay.

Patient demographics	Number (%), n=32
Age at time of surgery, median (range)	63 (28-89)
Female	29 (90.6%)
BMI, median (range)	27.4 (19.2-62.4)
Race/ethnicity	
Black	10 (31.2%)
White	21 (65.5%)
Other	1 (3.0%)
ASA	
1	0 (0%)
2	5 (16.1%)
3	22 (71.0%)
4	4 (12.9%)

Conclusion

- Laparoscopic, robot-assisted lysis of adhesions for management of SBOs is a feasible alternative to exploratory laparotomy or traditional laparoscopy
- Patients with fewer comorbid conditions may benefit the most from this technique
- Additional studies should be conducted to compare robotic versus open surgery in this population

References

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