Study of single-incision laparoscopic ileocecal resection in obese patients

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ABSTRACT

- Introduction: Minimally invasive surgery has become popular for colorectal cancer, and we have introduced Reduced Port Surgery (PRS) in our department for less invasive surgery. In general, obese patients are known to increase the difficulty of surgery and postoperative complications, but not many studies have been done on single-incision laparoscopic surgery.
- Objective: Comparison of the short-term results of single-incision laparoscopic ileocecal resection (SILS-ICR) and conventional laparoscopic ileocecal resection (c-ICR) for patients with a BMI of 25 or more in our department.
- Methods: A total of 19 SILS-ICR and 100 c-ICR patients who underwent laparoscopic ileocecal resection in our department with a patient BMI greater than 25 between January 2014 and March 2021 were retrospectively compared for treatment outcomes.
- Results: The median age was 73 [33-84] years for SILS-ICR and 71 [43-90] years for c-ICR. The median BMI was 27.0 [25.0-32.0] for SILS-ICR and 27.0 [25.0-37.0] for c-ICR. There was a significant difference in the operation time (SILS-ICR 114 min vs. c-ICR 155 min, p<0.01) in both groups, but no difference in the number of lymph nodes harvested, tumor diameter, bleeding, days to start diet, days of hospital stay after surgery, or complications greater Clavien-Dindo Grade II.
- Conclusion: The single-incision laparoscopic ileocecal resection for obese patients in our department was performed safely without increasing the complications compared with conventional laparoscopic ileocecal resection.

INTRODUCTION

- Minimally invasive surgery has become popular for colorectal cancer, and we have introduced Reduced Port Surgery (PRS) in our department for less invasive surgery.
- In general, obese patients are known to increase the difficulty of surgery and postoperative complications, but not many studies have been done on single-incision laparoscopic surgery.

METHOD

- A total of 19 SILS-ICR and 100 c-ICR patients who underwent laparoscopic ileocecal resection in our department with a patient BMI greater than 25 between January 2014 and March 2021 were retrospectively compared for treatment outcomes.

RESULTS

	SILS-ICR (n=19)	c-ICR (n=100)	P value
Age	73 [33-84]	71 [43-90]	0.501
Gender			0.43
Male	12 (63.2%)	59 (59.0%)	
Female	7 (36.8%)	41 (41.0%)	
BMI	27.0 [25.0-32.0]	27.0 [25.0-36.9]	0.248
ASA-PS			0.15
1	1 (5.3%)	28 (28.0%)	
2	17 (89.4%)	58 (58.0%)	
3	1 (5.3%)	14 (14.0%)	
History of abdominal surgery	7 (36.8%)	50 (50.0%)	0.438
T			1
0-2	8 (42.1%)	48 (48.0%)	
3-4	11 (57.9%)	52 (52.0%)	
Stage			0.597
0-I	6 (31.6%)	44 (44.0%)	
II-IV	13 (68.4%)	56 (56.0%)	
Operation time (min)	114 [71-211]	155 [82-414]	<0.01
Bleeding (mL)	0 [0-110]	0 [0-530]	0.272
Days to start diet	3 [3-10]	3 [2-10]	0.555
Hospital stay after surgery (days)	6 [5-17]	7 [5-38]	0.079
Lymph Node Dissection			0.285
D2	4 (21.1%)	42 (42.0%)	
D3	15 (78.9%)	58 (58.0%)	
Small incision length	4 [2.5-8]	5 [3.5-13]	<0.01
Operation time (min)	114 [71-211]	155 [82-414]	<0.01
Bleeding (mL)	0 [0-110]	0 [0-530]	0.272
Lymph nodes harvested	20 [6-44]	24 [10-58]	0.109
Maximum tumor diameter (cm)	4.0 [1.0-10.0]	3.5 [1.0-12.0]	0.660
PM (cm)	10 [5-30]	10 [6-27]	0.307
DM (cm)	10 [5-14]	10 [5-30]	0.544

	SILS-ICR (n=19)	c-ICR (n=100)	P value
surgical site infections	0 (0%)	4 (4.0%)	1
Bowel obstruction	2 (5.3%)	2 (2.0%)	0.119
Anastomotic leakage	1 (10.6%)	1 (1.0%)	0.295
ALL	3 (15.8%)	17(17.0%)	1

DISSCUSSION

- The operative time was shorter in SILS-ICR compared with c-ICR for obese patients in our department. (114 min vs. 155 min).
- This may be due to the lack of assistants, which facilitates simplification and standardization of the procedure and reduces the need for port insertion and wound closure.
- The small incision distance was also smaller in the SILS-ICR group (4 cm vs. 5 cm), although the difference was slight, and small incision was achieved.
- Although there was no significant difference, the number of lymph nodes dissected tended to be higher in the c-ICR group (20 vs. 24). However, there is no significant difference in the rate of D3 dissection.
- In this study, there was no significant difference in the postoperative complication rate itself between the SILS-ICR and c-ICR groups.

CONCLUSION

- The single-incision laparoscopic ileocecal resection for obese patients in our department was performed safely without increasing the complications compared with conventional laparoscopic ileocecal resection.