Comparison of laparoscopic surgery with open surgery for T4b colon cancer

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COI Disclosure
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Background

Japan Clinical Oncology Group 0404 study is large-scale randomized control trial in Japan. It was designed to compare long term outcome between laparoscopic surgery and open surgery for advanced colorectal cancer.

However, a subgroup analysis of this study reported that laparoscopic surgery for T4 cases had a poor prognosis.

The validity of laparoscopic surgery for T4 colon cancer are currently unclear.

Objective

This report aimed to clarify the safety of laparoscopic surgery for T4b colon cancer by comparison with open surgery.

Methods

80 patients with T4b colon cancer who underwent primary resection at our hospital from April 2007 to July 2016

- Open Surgery (Group O) 50 patients
- Laparoscopic Surgery (Group L) 30 patients

Table 1 Infiltrated Organs

	Group O (N=50)	Group L (N=30)	P-value
Small intestine, Appendix, Cecum	21 (42%)	6 (20%)	0.053
Uterus, Adnexa, Vagina	10 (20%)	1 (3.3%)	0.046
Bladder, Prostate, Seminal vesicle and duct	19 (28%)	1 (3.3%)	<0.001
Colon, Rectum	9 (18%)	6 (20%)	0.999
Kidney, Urinary duct	3 (6%)	0	0.288
Abdominal wall, Peritoneum, Muscle	14 (28%)	12 (40%)	0.327
Stomach, Spleen	2 (4%)	0	0.525
Liver	1 (2%)	0	0.999
Pancreas, Duodenum	2 (4%)	0	0.525
Nerve, Blood vessel	2 (4%)	2 (6.6%)	0.628
Omentum	2 (4%)	8 (26.7%)	0.005

Table 2 Operative Methods

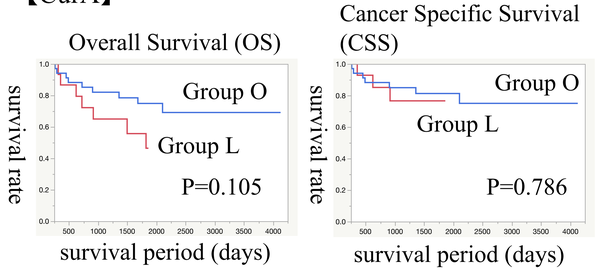
	Group O (N=50)	Group L (N=30)	P-value
ICR/RHC	18 (36%)	21 (70%)	0.010
T	2 (4%)	2 (6.7%)	
LHC/D	2 (4%)	2 (6.7%)	
S	15 (30%)	5 (16.7%)	
Hartmann	9 (18%)	0	
HAR	1 (2%)	0	
TPE	3 (6%)	0	

Table 3 Operative factors

		Group O (N=50)	Group L (N=30)	P-value
Operative Time (min)		241 (142-650)	173 (75-317)	<0.001
Bleeding (ml)		412.5 (little-4797)	little (little-869)	<0.001
Blood transfusion (U)		0 (0-2)	0 (0-18)	<0.001
Emergency operation		4 (8%)	0	0.291
Postoperative hospital days (days)		12 (6-131)	7 (3-29)	<0.001
Maximum tumor diameter (cm)		7.25 (3-25)	5.0 (2-12)	<0.001
Postoperative complications (Clavien-Dindo Classification)	0	27 (54%)	24 (80%)	0.034
	Grade 1, 2	18 (36%)	6 (20%)	
	Grade 3, 4	5 (10%)	0	

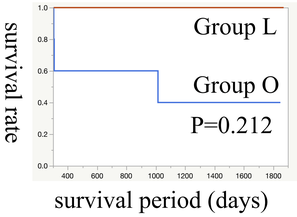
Figure 1 Long term prognosis

【CurA】

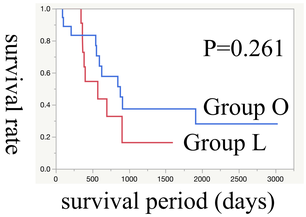


CurA: pStage 0 or I or II or III and besides no residual tumor after surgery.

【CurB】



【CurC】



CurB: 1. Cancer has been removed at the operation, but it is exposed at the margins or the circumferential resection margin of the specimen.
2. pStage IV and besides no residual tumor after surgery.

CurC: Cancer remains after surgery.

Discussion

- Operative time and blood loss were significantly lower in the laparoscopic group, and the postoperative hospital stay was also significantly shorter.
- There was no significant difference in postoperative complications between two groups.
- There was no significant difference in prognosis between the two groups in terms of overall survival, cancer-specific survival, or recurrence-free survival according to the degree of curability.

Conclusion

It was suggested that laparoscopic surgery can be safely performed for T4b colon cancer.

Further study should be performed by accumulating more cases that are selected properly.