

Surgical Challenge for Ulcerative Colitis at Kashiwa Hospital, The Jikei University School of Medicine

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ABSTRACT

Introduction : The results of surgical treatment for ulcerative colitis at Kashiwa Hospital, The Jikei University School of Medicine, have not been evaluated.

Patients and methods : We reviewed 51 patients who underwent total proctocolectomy with ileal pouch anal anastomosis (IPAA), electively (34 patients) or as an emergency (17 patients) for ulcerative colitis from January 2000 through December 2012. The medical records of all patients were reviewed.

Results : The patients had a mean (\pm SD) age of 41.8 ± 16.7 years, and 34 of them were male. The operations were 2 stages in 42 patients and 1 stage in 9 patients. The laparoscopic surgery was performed electively in 34 (67%) of the 51 patients, including 2 patients with a single-incisional procedure. Conversion to open surgery was not required, and no postoperative deaths occurred. Eight patients (17%) underwent pouch resection after surgery because of severe pouchitis.

Conclusion : Total proctocolectomy with ileal-pouch anal anastomosis for ulcerative colitis by either an open or laparoscopic approach is feasible and acceptable in the absence of severe pouchitis.

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Key words : ulcerative colitis, laparoscopic surgery, total proctocolectomy

INTRODUCTION

Laparoscopic colectomy¹ has been performed for colorectal cancer since 1991. One year later² laparoscopic surgery was successfully used to treat 2 cases of ulcerative colitis (UC). Laparoscopic colorectal surgery at Kashiwa Hospital, The Jikei University School of Medicine, was introduced in 2001 by an author of this article (H.K.)³⁻⁸. Since then, the number of patients undergoing this procedure at our institution has steadily increased. On the other hand, laparoscopic surgery was introduced for UC in 2002 after having been performed many times for colorectal

cancer. Total colectomy can now be performed with clip-less laparoscopic surgery according to the development of surgical techniques and the improvement of surgical devices⁸. The aim of the present study was to evaluate the results of surgery for UC at Kashiwa Hospital, The Jikei University School of Medicine, since 2000.

PATIENTS AND METHODS

This study reviewed 51 patients who had undergone total proctocolectomy with ileal pouch anal anastomosis (IPAA), electively (34 patients) or as an emergency (17 pa-

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Table 1. Patient characteristics

Variable	Laparoscopic surgery (n = 34)	Open surgery (n = 17)	p value
Sex			
Male	20 (59%)	14 (82%)	0.172
Female	14 (41%)	3 (18%)	
Age (years)	39.9 ± 15.4*	45.8 ± 18.9*	0.131
Operative type			
Emergent operation	0 (0%)	17 (0%)	
Elective operation	34 (100%)	0 (0%)	
Operative time (minutes)	327.9 ± 42.7*	225.1 ± 35.3*	< 0.01
Intraoperative blood loss (ml)	155.3 ± 112.1*	552.4 ± 317.4*	< 0.01
Postoperative hospital stay (days)	19.0 ± 1.8*	20.9 ± 2.2*	< 0.01
Surgical procedure			0.051
2-stage operation	25 (74%)	17 (100%)	
1-stage operation	9 (26%)	0 (0%)	
Complications in hospital stay			
Bowel obstruction	0 (0%)	4 (24%)	0.004
Diarrhea	34 (100%)	17 (100%)	
Surgical site infection	3 (9%)	8 (47%)	
Complications after discharge			0.811
Pouchitis	7 (21%)	4 (24%)	

*mean ± SD

tients), for UC at Kashiwa Hospital, The Jikei University School of Medicine, from January 2000 through December 2012. The patients had a mean (\pm SD) age of 41.8 ± 16.7 years, and 34 of the patients were male. The medical records of all patients were reviewed. Thirty-four patients (67%), including 2 patients with a single-incisional procedure, underwent laparoscopic surgery electively. Forty-two patients (82%) underwent a 2-stage operation, in which IPAA is performed with ileostomy, which is later closed, and 9 patients (18%) underwent a 1-stage operation, in which IPAA is performed without ileostomy. All of 9 patients were successfully treated with laparoscopic surgery without conversion to open surgery (Table 1).

Indication for laparoscopic surgery

Laparoscopic surgery was performed in patients who had given written informed consent. Laparoscopic surgery was not performed if the patient required emergency operations, had a history of serious surgical or nonsurgical co-morbidity, or had a body mass index of 30 kg/m^2 or more.

Statistical Analysis

All data were analyzed with the software package IBM

SPSS Statistics, version 22.0 (IBM Japan Ltd., Tokyo, Japan). Statistical significance was determined with the Mann-Whitney's *U*-test and the Chi-square test. A *p*-value of less than 0.05 was considered to indicate significance.

RESULTS

Number of operations

The number of operations performed per year from 2000 through 2012 ranged from 2 to 7, but the number of operations was not related with time (Fig. 1). After being introduced in 2002, laparoscopic surgery for UC has been performed for 34 (67%) of the 51 patients, including 2 patients with single-incisional procedures.

Surgical outcome

The mean duration of surgery was significantly longer for laparoscopic surgery than for open surgery (Table 1). On the other hand, the mean intraoperative blood loss was significantly less and the mean hospital stay after surgery was significantly shorter with laparoscopic surgery than with open surgery. The number of postoperative complications was significantly greater with open sur-

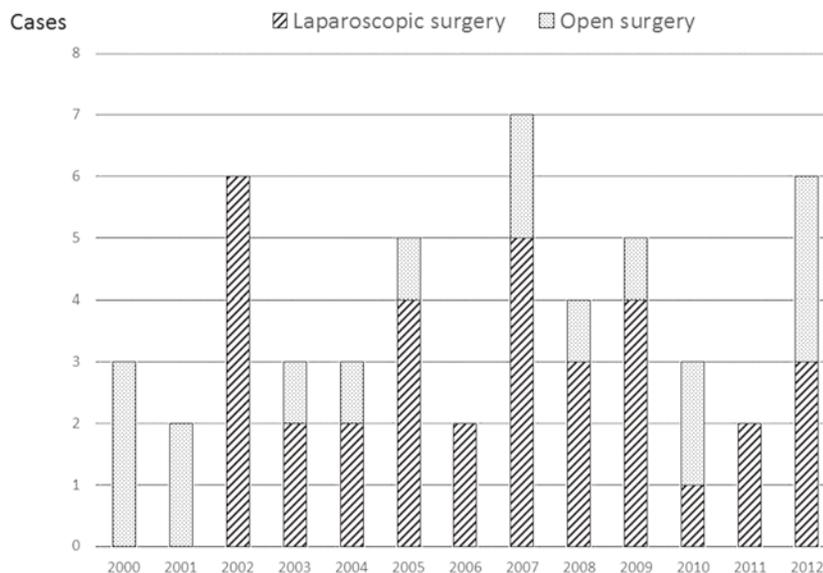


Fig. 1. Yearly number of open and laparoscopic operations for ulcerative colitis from 2000 through 2012 at our institution.

gery. In particular, the rate of surgical site infection was markedly higher with open surgery than with laparoscopic surgery. Eight of 11 patients with pouchitis after surgery (73%) underwent pouch excision with permanent ileostomy for severe pouchitis.

Comparison between 1- and 2-stage operations in all patients

No significant difference was found between the 1-stage and 2-stage operation groups in the mean duration

of surgery, the mean intraoperative blood loss, or the mean hospital stay after surgery (Table 2).

DISCUSSION

Despite new therapies, including immunosuppressants and antibodies against tumor necrosis factor alpha, being developed, many patients with UC still require surgery. Restorative proctocolectomy with IPAA was first de-

Table 2. Comparison between 1-stage and 2-stage operation in all patients

Variable	1-stage operation (n = 9)	2-stage operation (n = 42)	p value
Sex			0.156
Male	3 (33%)	31 (74%)	
Female	6 (67%)	11 (26%)	
Age (years)	41.8 ± 10.0*	39.2 ± 17.0*	0.526
Operative time (minutes)	312.2 ± 26.1*	333.6 ± 46.5*	0.300
Intraoperative blood loss (ml)	111.1 ± 93.3*	171.2 ± 115.7*	0.159
Postoperative hospital stay (days)	18.1 ± 0.8*	19.3 ± 2.0*	0.185
Complications in the hospital stay			0.528
Bowel obstruction	0 (0%)	4 (10%)	
Diarrhea	9 (100%)	42 (100%)	
Surgical site infection	1 (11%)	10 (24%)	
Mortality	0 (0%)	0 (0%)	
Complications after the discharge			0.958
Pouchitis	2 (22%)	9 (21%)	

*mean ± SD

scribed in 1978⁹ and has since become the standard treatment of choice for most patients who require surgery. Although laparoscopic surgery was applied for IPAA by many surgeons to treat UC, this technique was often negative in the 1990s because of its complexity¹⁰⁻¹². However, over the past decade, the dramatic improvements made in laparoscopic devices and the greater experiences with colorectal cancer surgery have allowed surgeons to apply laparoscopic surgery to IPAA. After laparoscopic surgery was introduced to IPAA for UC at our institution in 2002, the number of patients undergoing this procedure has steadily increased. Of all surgeries for UC in 13 years, 67% were by laparoscopic surgery, including 2 in patients with single-incisional procedure. Laparoscopic surgery is of 2 major types : hand-assisted laparoscopic surgery and laparoscopy-assisted surgery¹³. We perform only laparoscopy-assisted surgery because its surgical techniques are similar to those of laparoscopic colorectal cancer surgery.

Between 1- and 2-stage operations in laparoscopic surgery, we found no significant difference in the mean postoperative hospital stay. Anal function and reservoir function may require approximately 2 weeks to recover to suitable levels after surgery, whereas dehydration due to diarrhea after surgery made the hospital stay longer. With regard to oral intake after surgery, 2-stage operation may be more favorable than 1-stage operation.

Severe postoperative pouchitis that necessitates pouch resection and permanent ileostomy has been reported to develop early in 58% and late in 52% of IPAA patients. And performing resection rates have been reported in 3% to 15% of all patients^{14,15}. Pouchitis is characterized by higher rates of bowel movement, urgency, abdominal cramp, and discomfort. Although the exact cause of pouchitis is still unknown, the main contributing factors appear to be a history of UC and increased bacterial concentration by incomplete evacuation from the pouch¹⁶⁻¹⁸.

In conclusion, our 13-year experience with surgery for UC suggests that total proctocolectomy with IPAA by both open and laparoscopic approaches is feasible and acceptable if pouchitis does not develop after surgery.

Authors have no conflicts of interest.

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