

The Safety of Intraoperative Colonic Irrigation for Single Stage Procedure in Emergency Based Left Colonic Pathology

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Staged procedures are preferred to single stage procedure in emergency based left colonic obstruction or perforation because of the safety.

Purpose: To evaluate whether the single stage procedure in emergency based left colonic pathology is not safe.

Methods: We compared medical records of single stage procedure (SP, n=22 male; 10, mean age: 60±17, range: 26-82 Yrs) with Hartmanns procedure (HP, n=23 male; 13, mean age: 58±16, range: 18-90 Yrs) and diverting loop colostomy (DC, n=19, male; 12, mean age: 59±11, range: 19-80 Yrs) in these 4 years. All the patients admitted via emergency room. Intraoperative colonic irrigation method with newly developed irrigation device (MTech co., Ltd, Seoul, Korea) was used for SP. APACHE III scoring system was applied to evaluate the physical status of the patients. Preoperative data were compared with the 1st and 3rd postoperative day (POD).

Results: There were no statistically significant differences in patient demographics and preoperative APACHE III scores. The improvement of APACHE III score was significant in SP and DC on the 3rd POD from 29.6±20.9 to 22.9±10.2 and 25.7±13.3 to 21.4±14.8 (P<0.05). There was also a significant improvement in DC (25.1±13.3 to 21.9±12.9, P<0.05) on the 1st POD, however there was only a tendency of improvement in SP (29.2±20.9 to 26.1±12.3) without statistical significance. Scores in HP showed no improvement on the 1st and 3rd

POD. There were 3 operative mortalities in HP and one in DC.

Conclusions: Our results suggest that the safety of single stage procedure with newly developed colonic irrigation device is comparable to palliative diverting loop colostomy and better than Hartmanns procedure in emergency based left colonic pathology. *J Korean Coloproctol* 2001;17:309-315

Key Words: Intraoperative antegrade colonic irrigation, stage operation, Left colon cancer, Obstruction, Perforation

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2001

가

2

2

3

6-8

1967 Muir⁹가

1980 Dudley 10

11-14

APACHE III

1 3

2)

(NICI, MITech co.,

Ltd, Seoul, Korea)

SPSS 10.0 for Window

APACHE III

1 3 가

가

가 Paired t-test

ANOVA test

, POST HOC

1)

1999 9 2001 1 17

1)

SP 22 (10) 60.32 ± 17.19

(single-stage procedure, SP) 22

(: 26 82) , APACHE III

, 1996 9 1999 8 36

29.55 ± 20.87 (: 3 101) , DC 19 (

(Defunctioning Colostomy,

10) 58.95 ± 19.07 (: 18 90) ,

DC) 19 (Hartmann Proce-

APACHE III 25.71 ± 13.27 (:

dure, HP) 23

0 55) , HP 23 (13)

58.18 ± 16.49 (: 19 80) , APACHE

III 24.45 ± 13.47 (: 1 51)

(Table 1).

SP 17

SP

(77.2%), 5 (22.8%) , DC 12

(NICI, MITech co., Ltd, Seoul,

(63.2%), 7 (36.8%) HP

Korea)

12 (52.2%), 11 (47.8%)

(Table 2).

. DC HP

Table 1. Comparison of age, sex, preop APACHE III score between groups

	SP	DC	HP	P-value
Age	60.32 ± 17.19	58.95 ± 19.07	58.18 ± 16.49	NS (0.503)
Sex (M : F)	10 : 12	12 : 7	13 : 10	NS (0.055)
Preop APACHE score	29.55 ± 20.87	25.71 ± 13.27	24.45 ± 13.47	NS (0.311)

SP = single stage procedure; DC = defunctioning colostomy; HP = Hartmann procedure

Table 2. Distribution of patients

Etiology	SP (%)	DC (%)	HP (%)
Obstruction	17 (77.3)	12 (63.2)	12 (52.2)
Ca	16 (72.7)	12 (63.2)	12 (52.2)
Bezoar	1 (4.5)	0	0
Perforation	5 (22.7)	7 (36.8)	11 (47.8)
Ca	4 (18.2)	1 (5.2)	5 (21.7)
Trauma	1 (4.5)	6 (31.6)	6 (26.1)
Total	22	19	23

SP = single stage procedure; DC = defunctioning colostomy; HP = Hartmann procedure

Table 3. Comparison of APACHE III score in each groups

OP	Preop	POD1	POD3	P-value
SP	29.55±20.87	26.09±12.92	22.91±10.02*	<0.05
DC	25.71±13.27	21.95±12.95 [†]	21.43±14.79 [‡]	<0.05
HC	24.45±13.47	27.68±16.41	29.50±22.68	NS

SP = single stage procedure; DC = defunctioning colostomy, HP = Hartmann procedure

*P=0.044 between preoperative and post operative 3rd day; [†] P=0.031 between preoperative and post operative 1st day; [‡] P=0.048 between preoperative and post operative 3rd day

2) APACHE III

(1) : DC APACHE III
 가 29.55±20.87 1 21.95±12.95
 (P<0.05). SP

HP 가 . SP
 3 DC APACHE III
 가 . SP 29.55±
 20.87, 3 22.91±10.02 , DC
 25.71±13.27 21.43±14.79

(Table 3)(P<0.05).

HP 3

(2) APACHE III

: APACHE III
 , SP 3 APACHE III
 가 HP

Table 4. Comparison of APACHE score in between group by ANOVA test

	OP	SP	DC	HP	P-value
Pre,POD1	3.45±16.43	3.76±7.43	-3.22±7.62	NS	
POD1,3	3.18±9.21	0.52±7.88	-1.81±11.48	NS	
Pre,POD3	6.63±14.49*	4.28±9.30	-5.04±14.88	0.014	

SP = single stage procedure; DC = defunctioning colostomy; HP = Hartmann procedure

*P<0.05

Table 5. Postoperative complications

Complications	SP	DC	HP
Wound infection	2	0	4
Wound disruption	1	0	2
Anastomotic leak	1	0	0
OP mortality	0	1	3

SP = single stage procedure; DC = defunctioning colostomy; HP = Hartmann procedure

(P<0.05).

DC HP APACHE III

(Table 4).

APACHE III 가 3
 가 SP 4 (19.0%), DC 4 (19.2%),
 HP 13 (59.5%) , SP
 DC HP (Fig. 1)(P<0.05).

3)

SP 2 ,
 1 가 , HP
 4 , 2 가 . DC
 HP

DC 3 1 (Table 5).

HP 3 APACHE 가 55
 75, 45 86 23 65 가 3
 , DC 45 3 68 가
 1 .

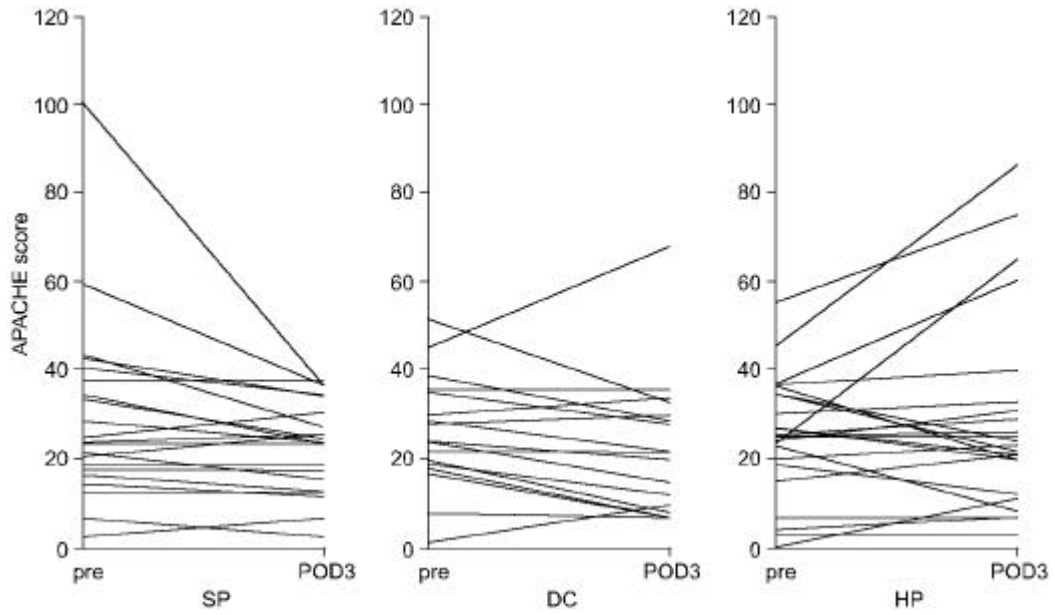


Fig. 1. Comparison of APACHE score changes between preoperative status with post operative 3rd day in SP, CD and HP

1973 Irvin⁸ Schrock³ 1980 Dudley¹⁰

2

11-14, 16-18

(Table 6).

가

2 3

3 5 48%¹⁵

3 가 2 1983 Radcliffe Dudley¹⁵ 64

2 (3.1%), 1

(1.5%), 1985 Koruth¹⁷

1967 Muir⁹ 4 (6.7%), 61

1

Table 6. Results of one-stage procedure with intraoperative colonic irrigation

Authors	No. of patients	Anastomotic leak	Wound infection	Mortality
Radicliffe and Dudley, 1983	64	3 (5%)	5 (8%)	2 (3%)
Koruth et al., 1985	61	4 (7%)	2 (3%)	5 (8%)
Foster et al., 1986	15	2 (13%)	2 (13%)	2 (13%)
Pollock et al., 1987	41	4 (10%)	15 (37%)	7 (17%)
Ambrosetti et al., 1989	23	1 (4%)	1 (4%)	2 (9%)
Tan et al., 1991	23	1 (4%)	7 (30%)	2 (9%)
Murray et al., 1991	27	0 (0%)	5 (19%)	0 (0%)
Morino et al., 1992	20	1 (5%)	3 (15%)	1 (5%)
Kressner et al., 1994	17	0 (0%)	1 (6%)	0 (0%)
Lau et al., 1995	35	1 (3%)	5 (14%)	2 (6%)
Kim et al., 2001	22	1 (5%)	2 (9%)	0 (0%)

(1.6%) Kressner,²³ Arnaud,²⁴ Lau,²⁵ Pollock,²⁰ Tan,²¹ Murray,²² Lau,²⁵,²⁶,²⁷,²⁸ APACHE III SP가 (minor procedure) DC 가 . 가

0 33%, 0 13% HP 가

1997 Forloni²⁹ 3 3³⁴ SP DC가 HP

0 7%, 0 13% 3 APACHE III 가 3

17% 3 6 18%, 0 3 APACHE III 가 3

SP 4 (19.0%), DC 4 (19.2%), HP 13 (59.5%) 가 SP DC HP

APACHE 80 Knaus³⁰ 가 DC

12 34 APACHE II 가 가 .

90 APACHE II SP . APACHE HP

APACHE III³¹ APACHE III 가 가 3³⁵

24 , , 가 13 3 가 .

24 가 APACHE III 가 65 34%,

75 44%, 85 55% APACHE III 가

APACHE ,

^{32,33} .

APACHE III 가 .

APACHE III

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