
Surgical Treatment of Crohn's Disease

Jong Kwan Kim, M.D., Jae Gil Lee, M.D., Chang Gyoo Byun, M.D.
Seung Kook Sohn, M.D., Nam Kyu Kim, M.D. and Jin Sik Min, M.D.

Department of Surgery, Yonsei University College of Medicine, Seoul, Korea

Purpose: This study was undertaken to investigate the preoperative diagnosis, indication for operation, postoperative complication, postoperative medical treatment and recurrence rate in patients with Crohn's disease who were treated with operation. **Methods:** Forty patients with Crohn's diseases had been operated on at the Department of Surgery, Yonsei University College of Medicine during the period from Jan 1986 to May 1999 and they were reviewed retrospectively. We studied symptoms, surgical indications, preoperative and postoperative treatments, involvement sites, types of operation and recurrence rate in Crohn's disease. **Results:** The male to female ratio was 1.5 : 1, and age distribution was from 8 to 69 years old with mean age of 33 years old. The duration of symptoms varies from within 1 day to above 10 years and most of them had within 1 month as 17 cases (42.5%). Symptoms are abdominal pain, hematochezia, anorexia, abdominal mass and diarrhea. The most frequent symptom was the abdominal pain as 85%. Crohn's disease was diagnosed only 45% before operation, less than what we expected. In another hand it surprised us find out that tuberculosis enteritis was diagnosed as much as 20%. The most common indication of operation was medical treatment failure as 13 cases, and fistula was 7 cases, intestinal obstruction with stenosis and tumor were 6 cases each other. The involvement of small bowel was most common as 40%, and the most common operative findings were ulceration and fistula for 17 cases and 12 cases respectively. Small bowel cases were treated with segmental resection and anastomosis in all 16 cases. Large bowel cases were performed right hemicolectomy in 10 cases and total colectomy in 1 case. Both small and large bowel involvement cases, right hemicolectomy was done in 4 cases, right hemicolectomy and segmental resection of small bowel was done in 6 cases. The recurrence rate of postoperative medical treatment was 16% and 28% for 5 years and 10 years respectively. The recurrence rate with no postoperative medical treatment was 13% and 26% for each 5 years and 10 years. There was no significantly difference in both groups. **Conclusion:** The major surgical indications for Crohn's disease were medical treatment failure, fistula and intestinal obstruction. Specially in Korea, differential diagnosis with tuberculosis enteritis was very important. Postoperative complication and recurrence rate has relatively low incidence. Our study suggest that postoperative medical treatment was controversial. (JKSCP 2000;16:415-422)

Key Words: Crohn's disease, Complication, Surgical indication, Postoperative treatment

1932
 Crohn¹
^{2,3}
 가 33% 88%
 15% 73%⁴
 가
⁵
^{6,7}
 가
 가
^{8,9}
 가
¹⁰
 가 가
 가 가
^{5,11-14}
 가
 가가
^{15,16}
 1986 1 1999 5 13
 40
 1986 1 1999 5

1)
 24 (60%) 16 (40%)
 1.5 : 1
 8 69 20 30
 가 20
 30 가
 가 35 가 31
 (Table 1).
 2)
 가 34 (85%)
 가 3 (7.5%), 3
 (7.5%), 가 3 (7.5%) 가 2 (5%)
 3)
 1 10
 가 2
 17
 3 (7.5%)가

Table 1. Age and sex distribution

Age (year)	Male	Female	Total (%)
1 10	1	0	1 (2.5%)
11 20	1	2	3 (7.5%)
21 30	5	8	13 (32.5%)
31 40	9	3	12 (30.0%)
41 50	6	2	8 (20.0%)
51 60	2	0	2 (5.0%)
61 70	0	1	1 (2.5%)
Total	24	16	40

Table 2. Involvement site of Crohn's disease

Site	Number of patients (%)
Small bowel	16 (40%)
Large bowel	11 (28%)
Small & large bowel	13 (32%)
Total	40

Table 3. Preoperative diagnosis

Diagnosis	Number of patients (%)
Crohn's disease	18 (45%)
Tuberculosis enteritis	8 (20%)
Colon tumor	5 (12.5%)
Intestinal Obstruction	3 (7.5%)
Panperitonitis	3 (7.5%)
Intra-abdominal abscess	1 (2.5%)
Small bowel tumor	1 (2.5%)
Sigmoid colon cancer	1 (2.5%)
Total	40

Table 4. Indications for operation

Indication	Number of patients (%)
Medical treatment failure	13 (32.5%)
Internal fistula	7 (17.5%)
Intestinal obstruction	6 (15.0%)
Tumor	6 (15.0%)
Intra-abdominal abscess	4 (10.0%)
Peritonitis	3 (7.5%)
Incidental*	1 (2.5%)
Total	40

*Sigmoid colon cancer was associated with Crohn's disease.

Table 5. Intraoperative findings of Crohn's disease related complications

Findings	Number of patients (%)
Ulceration	17 (42.5%)
Fistula	12 (30.0%)
Intestinal obstruction	9 (22.5%)
Bowel perforation	7 (17.5%)
Intra-abdominal abscess	7 (17.5%)
Abdominal mass	4 (10.0%)
Total	40

4)

가

16 (40%) , 가 13 (32%), 가 11 (28%) (Table 2).

5)

18 (45%) , 8 (20%) , 5 , 3 , 1 , 1 , 1 (Table 3).

6)

가 13 (32.5%) 가 , 가 7 (17.5%), 6 (15%), 4 (10%), 3 (7.5%) 1 (Table 4).

7)

가 13 (32.5%) , (42.5%) 가 , 17 (17.5%) 20 (50%) 8 7 (30%) 가 9 (22.5%), 12 가 4 (10%) (Table 5). (short bowel syndrome)

34 (85%) 가 , .
 가 (skipped lesion), (cobble stone appearance),
 10 가 가 1 , 가 13
 가 17 가 2 가 3
 가 3 가 1 (32.5%) 가 , 가 7 (17.5%), 6 ,
 가 가 가 4 , 1 , 1 S . Miche-
 가 16 lassi ²³⁻²⁵ 가 33%, 24%, 20%
 가 가 가 7,12,13,22
 가 가 가 7,13 . 1
 가 가 가 가 가 17 (42.5%) 가 ,
 가 가 가 12 (30%) . 9 ,
 가 가 가 7 , 가 4
 가 가 가 가 가 18 sulfasalazine, flagyl, corticosteroid
 (45%) 가 , sulfasalazine 가 .
 8 (20%) 가 가 가 가 1 , 1 ,
 가 5 , 가 1 . 가 immuran cyclosporine
 3 , 가 1 가 가 가
 13 (32.5%) , 20 (50%) ²⁶
 가 가 가 가 가 3 ²⁷
 가 가 가 6
 35 .
 (short bowel syndrome)

가

88%

Aeberhard ²⁸

45%, 10

33 82%

15% 10

5

26 65%

15

5

27.5%

15

10

가
가

1

가

. 1

가 4 ,

. De Jong

가 6

. 1

³⁰

25 (62.5%) ,

15

(37.5%)

5

. 3

16%(4) 10

28%(7

) .

5

13%(2) 10

5

4

26%(4)

가

1

4

1

가

가

가

가

가

^{25,28,29}

1.

4 8%

11 17%

5

가

(46%)

6

(54%)

4 (7.5%)

가 3 ,

가 1

1986 1

1999 5

13

가

가

40

가 33%

- 1971;6:97-108.
18. Burnham WR, Lennard-Jones JE, Stanford JL, Bird RG. Mycobacteria as a possible cause of inflammatory bowel disease. *Lancet* 1978;2:693-6.
 19. Chiodini RJ, Von kruinegen HJ, Thayer WR, Coutu JA, Merkal RS. Mycobacterial spheroplasts isolated from patients with Crohn's disease. *Gastroenterology* 1985;98:1348.
 20. Kangro HO, Chong SK, Hardiman A, Heath RB, Walker-Smith JA. A prospective study of viral and mycoplasma infections in chronic inflammatory bowel disease. *Gastroenterology* 1990;98:549-53.
 21. Roth MP, Peterson GM, McElree C, Vadheim CM, Panish JF, Rotter JI. Familial empiric risk estimates of inflammatory bowel disease in Ashkenazi Jews. *Gastroenterology* 1989;96:1016-20.
 22. Park IC, Kim SB, Yang KH, Choi SK, Park HO, Yoon CM. Clinical features of Crohn's disease in Korea. *The Korean Journal of Internal Medicine* 1987;2:152-7.
 23. Michelassi F, Stella M, Balestracci T, Giuliani F, Marogna P, Block GE. Incidence, diagnosis and treatment of enteric and colorectal fistulae in patients with Crohn's disease. *Ann Surg* 1993;218:660-6.
 24. Michelassi F, Balestracci T, Chappell R, Block GE. Primary and recurrent Crohn's disease; Experience with 1379 patients. *Ann Surg* 1991;214:230-40.
 25. Michelassi F, Rubin M. Prospective study of the feature, indications, and surgical treatment in 513 consecutive patients affected by Crohn's disease. *Surgery* 1997;112:661-7.
 26. Fazio VW, Wu JS. Surgical therapy for Crohn's disease of the colon and rectum. *Surg Clin N Am* 1997;77:197-210.
 27. Goligher JC. The long-term result of excisional surgery for primary and recurrent Crohn's disease of the large intestine. *Dis Colon Rectum* 1985;28:51-5.
 28. Aeberhard P, Berchtold W, Riedtmann HJ, Stedermann G. Surgical recurrence of perforating and non-perforating Crohn's disease; A study of 101 surgically treated patients. *Dis Colon Rectum* 1996;39:80-7.
 29. Raab Y, Bergstrom R, Ejerblad S, Graf W, Pahlman L. Factors influencing recurrence in Crohn's disease; An analysis of a consecutive series of 353 patients treated with primary surgery. *Dis Colon Rectum* 1996;39:918-25.
 30. De Jong E, Van Dullemen HM, Slors JFM, Dekkers P, Van Deventer SJH, Tytgat GNJ. Correlation between early recurrence and reoperation after ileocolonic resection in Crohn's disease: A prospective study. *J Am Coll Surg* 1996;182:503-8.
-