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Ileus and Perforation in Colon and Rectal Cancer

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INTRODUCTION

An early sugical operation is indicated to ileus and perforation in colon and rectal cancer, wherein the time and mode of operation must be appropriately selected to meet postoperative conditions of the patients and extent of cancer in development. The authors made a series of the study on the lesion and progerss of cancer as well as mode of operation, age at the time of operation, early postoperative course, etc., referring to 44 patients with ileus and 6 patients with perforation of colon and rectal cancer operated at the surgical department of the Emergency Medical Center, and the result is reported below.

Out of 184 patients with large bowel cancer surgically operated at this clinic, 44 patients (23%) had ileus. Their age ranged from 26 to 92 years, 67 years on the average, and the ratio of male to female was 2:3. Cancer was noted with two cases in the cecum, eight cases in the asceding colon, six cases in the transverse colon, four cases in the descending colon, 19 cases in the sigmoid colon and five cases in the rectal colon, dominative in the sigmoid colon; while incidence of ileus in the whole large bowel cancer was in the decending, ascending and transverse colon, in the increasing order (Fig. 1). Macroscopically advanced cancer was noted in 33 cases (75%) at Stage III or further, including eight cases (18%) associated with hepatic and peritoneal disseminatied metastases. Grossly, there were many of the type 2 and 3 resections, nearly all of them being circumferential, and histological development was s(a_2) or more in 16 cases (36%). Furthermore, ileus of the colon and rectal cancer occurred within the range from the cecum to the transverse colon, there were many more cases of highly advanced cancer at Stages IV and V than that cancer in the left large bowel (Table 1).

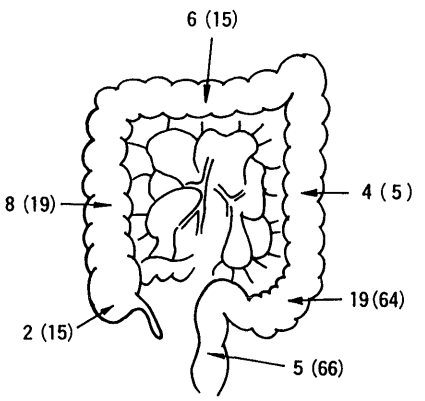

Fig. 1. Location of tumors in ileus cases (No. of total operative cases)

The mode of operation was selected upon determination of preoperative conditions of the patient and progress of cancer wherein 25 cases (57%) had curative resection and 13 cases (29%) had noncurative resection, 80% as a whole. All of six unresected cases were of Stage V and the

Table 1. Macroscopic progress and Histological development

Area occluded	No.of cases	Macroscopic progress (stage) I	II	III	IV	V	Liver metastasis H(+)	Peritoneal dissemination P(+)	Histological development <ss(a_1)	>s(a_2)	unknown
Caecum	2	0	0	0	0	2	0	2	0	2	0
Ascending colon	8	0	1	2	4	1	0	0	4	4	0
Transverse colon	6	0	1	1	0	4	3	2	3	1	2
Descending colon	4	0	1	3	0	0	0	0	3	1	0
Sigmoid colon	19	1	5	5	4	3	2	1	12	6	1
Rectum	5	0	1	1	0	3	1	0	1	2	2
Total	44	1	9	12	8	13	8	5	23	16	5

operations were limited to bypass operation or colostomy. Thirty-two out of 38 cases with resection had the primary operation, while the secondary operation was given to six cases (all of them having sigmoid colon cancer) (Table 2).

Table 2. Operative method and Macroscopic progress (stage)

Operative method	No.of	Macroscopic progress (stage) I	II	III	IV	V	Secondary operation
Curative resection	25	1	10	10	4	0	4
Noncurative rsection	13	0	0	1	5	7	2
By-pass operation	3	0	0	0	0	3	0
Colostomy	44	1	10	11	9	13	6
Total	44	1	10	11	9	13	6

Perforated large bowel cancer was noted in six cases, 2:1 in male to female, with their age at the time of operation ranging from 53 to 92, 71 years on the average. On the X-ray film free gas was noted in 83%, that was higher compared with 63% in gastric cancer perforation and 42% in small intestinal perforation treated in this clinic. Perforation was located in tumor necrosis in two cases and at the oral side of dilatated intestinal tract being occluded by tumor in four cases. Colostomy was performed for all of them, and the radical operation was given secondarily to four cases excluding two that had Hartmann's operation.

Macroscopically, tumor was noted as type 2 or 3 being circumferen advanced to Stage III or further. The poorly differential type was noted often in gastric cancer perforations, while in casesof large bowel cancer perforation it was moderately or highly differential adenocarcinoma in histology. Only 1 patient died immediately after the operation (Table 3).

A series of comparisons by age and development of cancer was made as to death immediately after surgery between ileus and perforation indicated for emergency or subemergency operation and palliative operation. Death after surgery was noted in 11.4%, 16.7% and 4.9% for ileus, perforation and palliative operation respectively, showing the higher rate in the emergency operation,

Out of 171 patients who died unoperated, 112 cases (65%) were of Stage III or further, while out of 13 cases who died after the operation 12 cases (92%) were of highly advanced cancer of Stage III or further. Furthermore, in those who had palliative operations no difference in age was noted between the operated and the unoperated, but in caseswith ileus and perforation significantly high mortality was noted

Table 3. Perforated cases in colon and Rectal cancer

Case No.	Age. Sex	Diag-nosis	Free gas	Location of tumor and perforation	Operative method	Macroscopic progress	Histological development	Prognosis (Died of)
1	64・M	SK	(−)		Hartmann's operation	Type 3. Circ. $H_0 P_0 S_2 N_t(+)$	Modelately diff. adenocarcinoma (SS)	Cancer (10th month)
2	84・F	SK	(+)		①Colostomy and Simple closure ②Sigmoidectomy	Type 2. Circ $H_0 P_0 S_2 N_t(+)$	Well diff. adenocarcinoma (S)	Surviving (23rd month)
3	58・M	SK	(+)		①Colostomy and Simple closure ②Left hemicslectomy	Type 2. Circ $H_0 P_0 S_2 N_t$	Well diff. adenocarcinoma (S)	Cancer (46th month)
4	92・F	RK	(+)		①Colostomy and Simple closure ②Hartmann's operation	Type 2. Circ $H_0 P_0 S_2 N_t(+)$	Moderately diff. adenocarcinoma (SS)	After (9 days)
5	65・M	RK	(+)		②Colostomy and Simple closure ②Mil's operation	Type 2. Circ $H_0 P_0 S_2 N_t(+)$	Well diff. adenocarcinoma (SS)	Surviving (10th month)
6	63・M	SK	(+)		Hartmann's operation	Type 3. Semi-circ $H(-)P_0 S_2 N_t(+)$	Moderately diff. adenocarcinoma (S)	Surviving (22nd month)

Table 4. Comparison between Non operative death and Death after surgery

		Ileus (44)	Perforation (6)	Palliative operation (134)
Non operational death	No. of cases	39	5	127
	Age at operation	64.4±12.1*	71.0±13.6	62.9±13.1
	Macroscopic progress (>stage Ⅲ)	29	5	79
	Initial colostomy	1	5	7
Death after Surgery	No. of cases	5	1	7
	Age at operation	83.8± 3.1*	92	59.7±12.0
	Macroscopic progress (>stage Ⅲ)	4	1	7
	Initial colostomy	2	1	0

*$p<0.01$

in the older persons of the operated cases (Table 4).

DISCUSSION

According to the reports in 1985, incidence of large bowel cancer ileus was 11.3 - 25.2%[1; 2] which was very close to 23% experienced in this clinic.

Nearly all of large bowel cancer with ileus being circumferential, advanced cancer is noted, but generally in the colon the right side has the larger lumen than the left side, that is why highly advanced cancer is often found in right colon cancer ileus. The authors also experienced many Stage V cases incuding those associated with hepatic metastasis and peritoneal disseminated metastasis in the right colon cancer. In large bowel cancer ileus many of the patients indicate anemia, abnormal balance of body fluid and electrolyte as cancer advances, which obliges to select a mode of operation to meet preopera-

tive conditions of the patient. In case of right colon cancer, (1) the content is liquid, thus preoperative decompression is useful in many cases. (2) The primary operation is sufficiently feasible, because anastomosis with the small bowel under favorable blood circulation is expected frequently, but in case of left colon cancer a severe occlusion by solid contents as well as dilatation of the intestinal tract at the oral side and poor blood circulation are expected frequently. Therefore, it is considered better to give the secondary operation after colostomy is conducted regardless of the primary operation.

According to various reports, large bowel perforation is noted in 2.4% - 7.8%[3, 4] which is nearly the same as 3.3% experienced in this clinic. Incidence of large bowel cancer perforation is higher compared with 0.15% - 2.89%[5, 6] of gastric cancer perforation, because (1) wall thickness of gastrointestinal tracts differs, and (2) obstructive colitis is easily induced, etc. Perforation occurs in three tumor inside of tumor, in the oral side and the anal side of the lesion, three areas, Compared with that in the lesion, the anal side perforation occurs rarely, and almost all the time perforation is induced by large bowel endoscopy, contrast enema, etc.

When cancer is a subject of treatment, the radical treatment is important. In many cases they are (1) advanced cancer, (2) highly contami nated inside due to prolonged ileus, and (3) anemic or abnomarl in water and electrolyte balance, in addition to emergency operation. The authors as a rule conduct the secondary radical operation after recovery from the postoperative course, but limited to those in whom the radical operation is obviously applicable after the primary operation for resection of tumor, and added construction of an artificial anus. Furthermore, in case of emergency operation for large bowel cancer, it was considered that sufficient care must be taken for postoperative management since most of deathsis expected immediately after surgery in the aged patients, specially in those older than 80 years.

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