

Closure of Terminal and Loop Colostomy*

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The clinical course after closing of a temporary colostomy was studied in 56 patients, 26 with loop colostomy and 30 with terminal colostomy. No significant difference was found in the complication rate or hospital stay between the two groups. It is concluded that terminal colostomy is preferable, as a standard procedure, because it is more acceptable to the patient and gives a complete diversion of the fecal stream. [Key words: Colostomy, terminal; Colostomy, loop; Closure]

THE ESTABLISHMENT of a temporary colostomy is a widely used procedure in various gastrointestinal conditions. The most commonly used technique is the loop colostomy¹ which is a simple and rapid procedure but has certain disadvantages. First, it leaves a rather large lump of tissue on the abdominal surface, making nursing and use of colostomy bags difficult, and second, the fecal stream is not diverted completely from the distal bowel segment. With respect to these factors, the terminal colostomy is preferable but is usually considered a major procedure with a higher risk of complications, especially in connection with closing of the colostomy.

The present study compares the two methods regarding complication rate and hospital stay after colostomy closure.

Materials and Methods

During the period 1961 to 1980, 56 patients (30 women and 26 men) had colostomy closure performed. Median age was 58 years (eight to 81).

The primary diseases are listed in Table 1, cancer of the colon and rectum being the most common. The miscellaneous group includes patients suffering from Crohn's disease, ischaemic colitis, ischiorectal abscess, ulcerative colitis, and Hirschsprung's disease. The indications for temporary colostomy are shown in Table 2.

For 26 patients, simple loop colostomy, as described by Goligher,¹ was performed. For 30 patients, terminal

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TABLE 1. Primary Diseases

Cancer of colon/rectum	24
Diverticulitis	16
Trauma	7
Miscellaneous	9

colostomy was performed by dividing the colon with a von Petz' stapling-machine. The distal end was closed intraperitoneally, and the proximal end was led out through the right rectus muscle and fixed to the peritoneum and skin with absorbable sutures and opened immediately. Both types of colostomies were completed with mucocutaneous sutures on the tenth postoperative day.

Before colostomy closure, all patients were treated with saline enemas and antibiotics (tetracycline or metronidazole) for two days.

For statistical evaluation, the Student's *t* test and χ^2 -test were used.

Results

The median time from establishing the colostomy to closure was 210 days, with no significant difference between the two groups ($P > 0.10$) (Table 3).

Complications in the two groups are listed in Table 4. The total complication rate was 34.6 per cent: 26.6

TABLE 2. Indications for Colostomy

	Patients
Obstruction	15
Perforation	15
Protection of anastomosis	11
Protection of fistula	5
Protection of diverticulitis	5
Protection of wounds	5
TOTAL	56

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TABLE 3. Time Between Primary Operation and Closure

	Terminal	Loop	Total
< 1 month	2	2	4
1-2 months	0	3	3
1-3 months	2	2	4
> 3 months	26	19	45
	30	26	56
Median (days)	243	180	210
Range (days)	16-1860	24-1915	16-1915

per cent in the group with terminal colostomy and 42.3 per cent in the group with loop colostomy ($P > 0.20$).

One patient in the latter group, in whom the colostomy closure was followed by diffuse peritonitis, died, so that the overall mortality was 1.9 per cent. The most common complication, wound sepsis, occurred with the same frequency in the two groups; *i.e.*, approximately 20 per cent of the patients had this complication.

The median hospital stay after both types of operation was ten days, but no patient with a terminal colostomy stayed in the hospital more than 30 days, whereas five patients with loop colostomy stayed for 30 to 159 days (Table 5).

Discussion

Most of the patients in this series had the colostomy closed later than three months after the primary operation, which, by some authors, is considered the optimum time interval.²⁻⁴

The total complication rate in this material (34.6 per cent) corresponds well with other series,^{2,3,5-7} although a definite lower complication rate has been reported.^{8,9}

In all studies, including the present one, wound sepsis was the most common complication in connec-

TABLE 4. Number of Complications of Colostomy Closure

Complication	Terminal*	Loop*
Fistula	2	3
Wound infection	6	6
Leakage	1	1
Cardiopulmonary	2	0
Death from peritonitis	0	1
Reoperations	2	2
Hernia	1	2
TOTAL	14	15

* Total number of patients: terminal—8, loop—11.

TABLE 5. Hospital Stay after Colostomy Closure

	Terminal	Loop
< 10 days	9	7
10-30 days	21	14
> 30 days	0	5
Median	10	10
Range	5-19	6-159

tion with colostomy closure and, as demonstrated in the present study, it seems to occur with equal frequency regardless of whether closing of a loop or a terminal colostomy is involved.

Although the preoperative bowel preparation in most studies includes use of antibiotics,^{3,4,7} this does not seem to be an important factor since the authors who reported the lowest complication rate⁸ used only mechanical cleansing, as in the present study.

The fact that a terminal colostomy always has to be closed intraperitoneally has been considered a disadvantage, but several authors have shown that there is no difference in the complication rate whether an extraperitoneal or an intraperitoneal technique is chosen for the closure.^{3,6-8,10}

Since there were no cases of leakage from the blind loop of a terminal colostomy into the peritoneal cavity, no difference in complication rate at closure of the two types of colostomy, and no difference in hospital stay, it seems that the greater acceptability to the patient of a well-fashioned terminal colostomy and the avoidance of spill-over of fecal material into the distal part of the bowel favor terminal colostomy as a standard procedure.

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