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Management of the Perineal Wound after Rectal Excision for Ulcerative Colitis

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A retrospective review was conducted of 326 patients undergoing intersphincteric rectal excision for ulcerative colitis. Seventy-five patients (Group A) had rectal excision with closure of the pelvic peritoneum and packing of the pelvic space via an open perineal wound. One hundred sixty-nine patients (Group B) had excision without pelvic peritoneal closure, but with the levators and subcutaneous tissue closed and with transabdominal sump suction drainage of the pelvic space. Complete healing for Groups A and B occurred by three months in 42 and 79 percent, respectively, and by six months in 56 and 89 percent. Thirty-one percent of Group A and 9 percent of Group B were unhealed at one year, and/or required further surgery. When all 326 patients were considered, healing was achieved at three, six, and 12 months, for packed and for closed wounds, in 42 percent and 79 percent, 55 percent and 89 percent, 66 percent and 91 percent, respectively. All these differences are highly significant ($P < 0.0001$). The incidence of small-bowel obstruction requiring surgery during follow-up was similar whether the pelvic peritoneum was closed (15.5 percent) or left open (15.7 percent). Other factors which adversely affected perineal wound healing were younger age, a short history of disease, a two-stage proctocolectomy especially for persistent severe rectal disease, and the presence of perianal disease. [Key words: Proctocolectomy; Perineal wound; Ulcerative colitis]

THE PERINEAL WOUND has been a major source of morbidity in patients undergoing rectal excision for ulcerative colitis.¹⁻³ Modifications in the technique of rectal dissection, with more frequent use of an intersphincteric excision,⁴⁻⁶ and the use of primary closure of the resulting perineal wound,⁷⁻¹⁰ are reported to have produced faster healing and reduced the percentage of unhealed wounds, but the incidence of healing problems

remains high.¹¹ This paper reports the experience with perineal wound healing at the Cleveland Clinic, and evaluates some of the factors which have influenced the healing of these wounds.

Patients and Methods

A retrospective study was conducted of perineal wound healing in patients who had undergone one-stage proctocolectomy or delayed proctectomy for mucosal ulcerative colitis between 1960 and 1982. Ten patients who had extensive perineal dissections because of rectal cancer, and four patients who were lost to follow-up before perineal healing was achieved were excluded. The remaining 326 patients had intersphincteric rectal excisions. The internal sphincter was removed with the rectum, and the external sphincter and levator muscles were left intact. The abdominal phase of the rectal dissection was conducted in a plane close to the muscle wall of the rectum, thereby avoiding injury to the pelvic autonomic nerves and leaving the fatty mesorectum to partially fill the presacral space.

The technique of managing the perineal wound was recorded for all patients, together with the number and nature of any drains or packs employed. Data were also collected to assess the effect on healing of age, sex, preoperative steroid treatment, duration of symptoms, severity of disease, and the presence of perineal sepsis at the time of surgery. Early and late complications relating to the perineal wound were analyzed, and the time required for

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TABLE 1. Operations Performed (326 Patients)

Operation	Number of Patients
Total proctocolectomy, end ileostomy	136
Total proctocolectomy, continent ileostomy	34
Proctectomy, end ileostomy	123
Proctectomy, continent ileostomy	6
Takedown IRA, end ileostomy	25
Takedown IRA, continent ileostomy	2
TOTAL	326

complete perineal wound healing (when achieved) was recorded, along with details of further surgery when this was necessary.

The statistical analysis system (SAS)¹² was used for data-base management and all statistical tests. Chi-square analyses were used to determine the significance of differences between independent groups.

Results

There were 326 patients, 187 males and 139 females, ranging from ten to 75 years old (mean, 39.0 years). Surgery had been performed electively in 293 (89 percent), and under urgent or emergency conditions in 33 (10.1 percent). Table 1 lists the operations performed. One hundred seventy patients had one-stage proctocolectomies and in 156, a delayed proctectomy was performed after a previous colectomy. Table 2 indicates the number of patients in whom complete healing was achieved at one, three, six, and 12 months for each of these subgroups, and for the total number of patients.

Results of Further Surgery: Fifty-nine patients (18.1 percent) remained unhealed at 12 months and/or required further surgery. The additional operations performed in 35 patients, and the healing achieved are indicated in Table 3. Sixteen patients did not heal despite further surgery, and 11 others remained unhealed without further surgery, thus, 27 patients (7.9 percent) never achieved perineal wound healing.

Effect of Wound Management Techniques on Healing, Infection, and Postoperative Bowel Obstruction: Largely because of the personal preferences of the individual surgeons, one of two quite different techniques of perineal wound management was used in the majority of patients. Seventy-five patients (Group A) had rectal excision with closure of the pelvic peritoneum and packing of the pelvic space via an unclosed perineal wound (Technique A). One hundred sixty-nine patients (Group B) had rectal excision without pelvic peritoneal closure, but with the levators and subcutaneous tissue closed, and with transabdominal sump suction drainage of the pelvic space (Technique B). No significant difference existed in the groups with respect to age, sex, severity of proctitis, presence of perianal disease, or the urgency and indications for surgery. Table 4 compares the healing achieved

TABLE 2. Perineal Wound Healing (326 Patients)

	Healed by by One Month	Healed by Three Months	Healed by Six Months	Unhealed at One Year or Further Surgery
One-stage proctocolectomy (170 patients)	69 (40.6)	117 (68.8)	142 (83.5)	23 (13.5)
Delayed proctectomy (156 patients)	42 (26.9)	98 (62.8)	109 (69.9)	36 (23.1)
All patients (326 patients)	111 (34.0)	215 (66.0)	251 (77.0)	59 (18.1)

() = percent.

in Groups A and B. The differences at one, three, six and 12 months all are highly significant ($P < 0.0001$). Two patients (2.7 percent) in Group A and 14 patients (8.3 percent) in Group B required postoperative drainage of a pelvic abscess. During a period of follow-up from one to 22 years (average 7.8 years), 15 patients (20 percent) in Group A, and 25 patients (14.8 percent) in Group B required laparotomy for small-bowel obstruction. This difference is not statistically significant.

Eighty-two patients (Group C) did not belong to either Group A or Group B because alternative methods of drainage or combinations of management of the peritoneum or levators were used, but all patients had either packing or closure of the perineal wound. When Groups A, B and C are considered together, there were 114 patients in whom the perineal wound was packed and 212 in whom the wound was closed primarily (with various combinations of peritoneal management and methods of drainage). Healing was achieved at one, three, six, and 12 months for packed and closed wounds in 12 percent and 46 percent, 42 percent and 79 percent, 55 percent and 89 percent, and 66 percent and 91 percent, respectively. These differences are also highly significant ($P < 0.001$).

A pelvic abscess required drainage in three patients, (2.5 percent) in whom wounds were packed; and in 16 patients (7.5 percent) after wounds were closed primarily. Laparotomy for small-bowel obstruction was required in 20 patients (17.5 percent) after pelvic packing, and in 31 patients (14.6 percent) after primary closure. Of 116 patients in whom the pelvic peritoneum was closed, 18 (15.5 percent) later required laparotomy for bowel obstruction, compared with 33 of 210 patients (15.7 percent) when the pelvic peritoneum was left open. None of the above differences were statistically significant. However, small-bowel obstruction was more common after two-stage proctocolectomy, occurring in 31 of 110 patients (28.2 percent), compared with 20 of 140 (14.3 percent) after one-stage proctocolectomy ($P < 0.007$).

TABLE 3. Further Surgery Required (35 Patients)

Operation	Number of Patients	Number Obtaining Healing
Curettage alone	16	8
Excision and primary closure	3	2
Skin grafting	12*	9

*Six had one or more prior attempts at curettage ± excision and suture.

Other Factors Affecting Healing: Men had a slightly higher proportion of unhealed wounds after six months (24.1 percent vs. 21.6 percent for women), but the difference was not statistically significant. In patients younger than 30 years of age, 36.3 percent of wounds were unhealed at six months, compared with 21.4 percent in those older than 30 ($P < 0.005$). When the duration of symptoms before surgery was three years or less, 32.1 percent were not healed after six months, whereas 21.2 percent with more than three years of disease were not healed ($P < 0.09$). Patients taking steroids before surgery had a slightly lower incidence (21.0 percent) of unhealed wounds at six months, compared with the remainder (25.1 percent), but these differences were not significant.

When a delayed proctectomy was performed, the incidence of unhealed wounds at six months was 30.1 percent, considerably higher than the 16.5 percent after one-stage proctocolectomy ($P < 0.004$). When the principal indication for proctectomy was severe, residual proctitis following previous colectomy, there was a 34.1 percent incidence of poor healing at six months, compared with 18.9 percent for the remainder ($P < 0.004$). When perianal disease was an indication for surgery, seven of 16 (43.8 percent) had poor healing, compared with 68 of 310 (21.9 percent) for the remainder ($P < 0.04$). Healing was not affected significantly when the principal indication for surgery was anything other than residual proctitis or perianal disease, and there was no difference whether surgery was performed under elective, urgent, or emergency conditions.

Discussion

An intersphincteric (endoanal) rectal excision, described later by Turnbull and Fazio⁴ in 1975, and similar to the techniques of Lee and Dowling⁵ and Lyttle and Parks,⁶ was used throughout the entire study (1960–1982), effectively eliminating any potential differences in healing due to the type of proctectomy itself. Major differences did exist, however, depending on the method employed to manage the wound. The differences between Techniques A and B in healing at six months (57 percent versus 89 percent) and the incidence of unhealed wounds at one year (30.7 percent versus 8.9 percent) are highly significant, as are the differences when all packed wounds are compared with all wounds closed primarily. This was not a controlled trial, and while personal preference of the

TABLE 4. Healing According to Technique Used

Healing	Group A (75 Patients)		Group B (169 Patients)	
	Number	Percent	Number	Percent
Healed by 1 month	8	10.7	82	48.5
Healed by 3 months	32	42.7	134	79.3
Healed by 6 months	43	57.3	151	89.3
Healed by 12 months	52	69.3	154	91.1
Not healed at 12 months or further surgery	23	30.7	15	8.9

individual surgeons was the main reason for the choice of different techniques, there may have been some added bias, because the decisions to pack rather than close some wounds may have been made because of excessive fecal contamination during surgery. However, there was no clear indication in the majority of patients that this was the case, and as Groups A and B were evenly matched in other respects, it seems likely that the differences were due to the different techniques of wound management.

There was a higher incidence of pelvic abscess after primary closure (as might be expected because a packed wound should drain more freely). Most of these collections were easily drained through the perineal wound, although an unhealed wound did result in some cases, contributing to 8.9 percent of wounds unhealed at one year. Nevertheless, this figure is still lower than after perineal packing.

There was no significant difference in early and late postoperative small-bowel obstruction requiring surgery, whether the perineal wound was packed or closed, or whether the pelvic peritoneum was reconstituted or left open. Leaving the peritoneum open allows small bowel and omentum to partially fill the pelvis (and the residual mesorectum) and, as the incidence of bowel obstruction is not increased, closure of the peritoneum appears unnecessary. The consequent reduction in the pelvic “dead space” may hasten perineal wound healing. We continue to employ Technique B in the management of the perineal wound after intersphincteric excision for inflammatory bowel disease, and currently about 7 percent of wounds in mucosal ulcerative colitis patients remain unhealed at one year or require further surgery.

The incidence of delayed wound healing was higher after two-stage than after one-stage proctocolectomy, and was also higher when severe residual rectal disease was the principal indication for proctectomy. These factors may be related, in that most patients having delayed proctectomy did so because of persisting severe rectal disease in which the surgery itself, and the rectal dissection in particular, is more difficult and tedious, and there is a greater potential for contamination and infection. Similar conditions apply in the presence of perianal disease, which may partly account for the poorer healing in this group of

patients. Delayed healing after two-stage resections for ulcerative colitis was also reported by Hughes¹³ and although Corman *et al.*¹⁴ found the opposite to be the case in mucosal ulcerative colitis, this did not apply in their Crohn's disease patients. Our results, however, do support their findings of an adverse effect on healing by preexisting perianal disease.

Our younger patients healed less well than those over 30 years of age. Similar findings have been reported by Corman *et al.*¹⁴ and by Broader *et al.*⁸ Patients with shorter duration of disease also had slightly poorer healing, but the results were not statistically significant. Some of these differences may be due to the higher number of patients with acute colitis in the younger age group and in the group with a short disease history, but a full explanation is lacking. There was no apparent difference in healing in our patients taking steroids, but the details of dosage and duration of treatment were incomplete in many patients, and it would be invalid to draw any firm conclusions about the effect of steroids from these results.

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Announcements

9TH ANNUAL SAN DIEGO POSTGRADUATE ASSEMBLY IN SURGERY

The 9th Annual San Diego Postgraduate Assembly in Surgery will be held January 20-24, 1986, at the Hotel Intercontinental-San Diego, San Diego, California. This program has been approved for approximately 32 hours of AMA/CMA credit; and 32 hours of nursing credit.

For further information contact: A. R. Moossa, M.D., course director, Office of Continuing Medical Education, M-017, UC San Diego School of Medicine, La Jolla, CA 92093, (619) 452-3940.

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"The Role of Foliates and Antifoliates in Chemotherapy" will be the subject of an open symposium on Wednesday, December 11, 1985, at the Beverly Wilshire Hotel, Beverly Hills, California. There will be a registration fee of \$25. For further information, contact: Ms. Joanne Jablonski, Meetings Manager, World Health Communications Inc., 41 Madison Avenue, New York, New York 10010 (212) 679-6200.