Sexual Function in Women After Proctocolectomy

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One hundred women who had undergone proctocolectomy with a continence-preserving procedure (50 Kock pouches, 50 ileoanal anastomoses) for ulcerative colitis or polyposis coli were interviewed regarding their preoperative and postoperative sexual function. Frequency of intercourse increased and the incidence of dyspareunia decreased after operation in both groups. Patients who had a Kock pouch had a greater incidence of persistent postoperative dyspareunia than patients who underwent an ileoanal procedure (38% *vs.* 18%, $p < 0.02$). Only one patient in each group reported a postoperative disturbance in ability to achieve orgasm. Most women reported no change in their menstrual cycle, but patients with a Kock pouch had more episodic vaginal discharge than patients with an ileoanal anastomosis (18% *vs.* 0%, $p < 0.001$). Postoperative fertility was minimally impaired. Overall, the majority of women in this study who underwent proctocolectomy for benign diseases experienced enhanced sexual function after operation, which they attributed mainly to improved health.

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THE PHYSICAL AND PHYSIOLOGIC CHANGES that occur during the human sexual response cycle are remarkably analogous in men and women.[1] This similarity suggests that the neuroanatomic basis of the sexual response in men and women may be identical. Certainly, there is no convincing evidence to the contrary.[2] Injury to the parasympathetic or sympathetic plexus supplying the pelvic organs is a well-recognized complication of proctectomy, and the resultant sexual dysfunction in men is well documented.[3–6] Sexual dysfunction in women after proctectomy is less well described,[7–9] in part because of reluctance by both physicians and patients to discuss such matters. Theoretically, sexual dysfunction in women after proctectomy could result from injury to the autonomic pelvic plexuses or from mechanical problems secondary to distortion of the pelvic anatomy produced by removal of the rectum and anus and disruption and closure of the pelvic floor.

This survey attempted to determine the incidence of sexual dysfunction in women who underwent proctocolectomy for benign disease and to determine whether any differences could be detected between those who underwent proctocolectomy with construction of a Kock pouch (complete removal of the rectum and partial disruption of the pelvic floor) and those who underwent proctocolectomy with ileoanal anastomosis (retention of outer layers of distal rectum and intact pelvic floor).

Materials and Methods

Fifty women who had undergone proctocolectomy with ileoanal anastomosis between January 1981 and May 1983 were chosen at random and contacted for telephone interviews. This group was matched as closely as possible, by age at operation, with a similar number of women who had undergone proctocolectomy with construction of a Kock pouch between November 1975 and November 1982.

All women who had a Kock pouch were within 2 years of the age of their ileoanal anastomosis counterparts at the time of operation. The mean age at operation was similar in both groups (Kock pouch, 32 years; ileoanal anastomosis, 33 years). As anticipated, changes in surgical practice during the last 5 years resulted in a greater mean current age (39 years *vs.* 35 years, respectively) and mean interval (73 months *vs.* 28 months, respectively) since operation in the patients who had a Kock pouch compared with the patients who had an ileoanal anastomosis.

The diagnosis that led to the proctocolectomy was ulcerative colitis in most of the patients (92%). A few patients

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TABLE 1. *Marital Status*

	No. of Patients	
	Ileoanal Anastomosis	Kock Pouch
Marital status before operation		
Married	36	36
Single	10	12
Divorced	4	2
Change in status after operation		
Married	2	9
Divorced	0	11
Remarried	0	8
Widowed	0	4

in each group (Kock pouch, 5; ileoanal anastomosis, 2) had polyposis coli. Fewer patients with an ileoanal anastomosis (4%) had had a previous colectomy compared with those who had a Kock pouch, of whom 30% had had a previous colectomy and conventional Brooke ileostomy.

All interviews were conducted by a female physician. (A.M.M.). Patient confidentiality was assured, and the reason for the survey explained. All patients contacted agreed to the interview and answered all questions. Specific questions concerned menstrual history, frequency of intercourse, dyspareunia, ability to achieve orgasm, and pregnancy both before and after operation. Patients were also queried about changes in marital status after the operation, and any impact of the operation on dating and self-image. Statistical analysis was performed with the chi-square test, with the Yates correction factor, and the Fisher exact probability test.

Results

Marital Status

Preoperative marital status was similar in both groups, but more patients with a Kock pouch had changed marital status during the postoperative interval (Table 1). Of those who had dated after the operation, most patients (ileoanal anastomosis, 9 of 12; Kock pouch, 12 of 17) reported that the procedure had enhanced their ability to date. All such patients had experience with a conventional ileostomy, and the enhancement was usually ascribed to not having to use an external appliance. The remaining eight patients reported that dating ability was unchanged.

Menstrual Cycle

Although more women in the ileoanal anastomosis group described changes in the menstrual cycle after operation compared with women with a Kock pouch, the majority of women in both groups noted no change. In general, such changes noted were toward a more regular cycle (Table 2). Nine of 50 (18%) patients with a Kock pouch complained of intermittent profuse vaginal discharge after operation, whereas none of the patients who had an ileoanal anastomosis had such complaints ($p < 0.001$). This discharge occurred with changes in body position (*e.g.*, when bending over), and several women had documented vaginal stenosis. One woman with a Kock pouch had toxic shock syndrome after operation.

TABLE 2. *Postoperative Changes in Menstruation**

	Ileoanal Anastomosis (N = 46)		Kock Pouch (N = 44)	
	No. of Patients	%	No. of Patients	%
No change	29	63	36	82
Regularity				
Increased	12	26	5	11
Decreased	5	11	3	7
Cycle length				
Increased	3	7	0	0
Decreased	6	13	3	7
Amount of flow				
Increased	7	15	3	7
Decreased	3	7	1	2
Increased dysmenorrhea	7	15	3	7
Menopause	4	9	6	14

* Includes only women menstruating before operation.

Intercourse

The majority of patients in both groups reported that their disease had resulted in a decreased frequency of intercourse before operation, and they noted an increased frequency of intercourse after operation (Table 3). Poor health was the most common reason given for decreased frequency of intercourse before operation, and improved health was the most common reason given for an increased frequency of intercourse after operation (Table 4).

TABLE 3. *Frequency of Intercourse**

	Ileoanal Anastomosis		Kock Pouch	
	No. of Patients	%	No. of Patients	%
Before operation				
Increased	0		0	
Decreased	37	86	40	93
Unchanged	6	14	3	7
After operation				
Increased	35	78†	40	80‡
Decreased	2	4	1	2
Unchanged	8	18	9	18

* Includes only those sexually active prior to the onset of disease.
† $p < 0.02$.
‡ $p < 0.001$.

TABLE 4. *Factors Affecting Frequency of Intercourse**

	Patients (%)	
	Ileoanal Anastomosis	Kock Pouch
Preoperative decrease		
Health	84	88
Dyspareunia	14	3
Stool frequency	14	10
Postoperative increase		
Health	84	90
Self-image	8	5
Postoperative decrease		
Dyspareunia	8†	5
Incontinence	3	0

* Of those who were sexually active who had noted a change in sexual activity. Some patients gave more than one response.
† Decreased dyspareunia in one patient and increased or unchanged dyspareunia in three.

TABLE 6. *Pregnancy*

	No. of Patients	
	Ileoanal Anastomosis	Kock Pouch
Before operation	32	32
After operation		
Attempted	8	12
Successful	6	10*
Delivery		
Vaginal	4	7
Cesarean	2	3
Procedure-related complications	1†	7‡

* Two women had therapeutic abortions; 1 had 2 spontaneous miscarriages, 4 have had 2 pregnancies after operation.
† Transient minor incontinence.
‡ Torsion of pouch (2), difficult intubation (2), valve incontinence (2), and external prolapse alone (1).

Dyspareunia

The majority of women had dyspareunia before operation, although this was seldom the reason given for a decreased frequency of sexual intercourse. The incidence of dyspareunia decreased after operation in both groups, although the patients with a Kock pouch had significantly more persistent dyspareunia after operation than the patients who had an ileoanal anastomosis. In only a minority of patients was the problem severe enough to interfere with the frequency of sexual intercourse (Table 5).

Orgasm

Most sexually active women were able to achieve orgasm both before and after operation (78% and 89%, respectively). Of women who were orgasmic before operation, one woman in each group noted a change after operation: one patient with an ileoanal anastomosis was unable to achieve climax, and one patient with a Kock pouch reported that her climax was less intense. Neither had postoperative dyspareunia.

TABLE 5. *Dyspareunia*

	Patients (%)	
	Ileoanal Anastomosis	Kock Pouch
Before operation	46	62
After operation		
Transient	20	10
Persistent	13	32*
Severe†	5	6

* Between-group comparison, $p < 0.02$.
† Resulted in decreased sexual activity.

Pregnancy

Only a small percentage of women in either group attempted to conceive after operation (Table 6). Most who tried were successful. Two women in the Kock pouch group were unable to conceive and had tubal occlusion. Neither had a history of pelvic infection. Neither of the two patients who had an ileoanal anastomosis and have thus far been unable to conceive have undergone studies. Patients who had a Kock pouch tended to have more difficulty with procedure-related complications during pregnancy than did patients with an ileoanal anastomosis. Women in both groups delivered vaginally without complications.

Most women in both groups reported that their self-image had improved after operation (ileoanal anastomosis, 33; Kock pouch, 37). A minority of patients in the Kock pouch group (3 patients; 6%) noted a transitory worsening of self-image after operation. None of these patients had had a conventional ileostomy. The reasons most frequently given for a postoperative improvement in self-image were improved health and preference of the continence-preserving procedure to a conventional ileostomy (Table 7).

Discussion

Most patients who develop ulcerative colitis or polyposis coli do so during the reproductive years[10] and, therefore, the impact of proctocolectomy on all aspects of sexual function in men and women is an important consideration.

Our patients considered either continence-preserving procedure to be an improvement in the dating situation compared with a conventional ileostomy. This is similar to results reported by others.[11]

More women in the Kock pouch group had married

or remarried after their procedure compared with women in the ileoanal anastomosis group. This may be related, at least in part, to the longer follow-up interval in the Kock pouch group. No patient reported that the procedure had contributed to a breakdown in marital relations.

More patients in the ileoanal anastomosis group reported changes in their menstrual cycle after operation, which may, in part, be related to the longer follow-up interval in women who had a Kock pouch. In general, however, such changes were usually toward a more regular cycle.

Sexual activity increased dramatically after operation compared with preoperative levels; in almost all cases the increase was attributed primarily to improvement in general health.

Preoperative dyspareunia was common in both groups. Similar findings have been reported in women who have undergone ileorectostomy for ulcerative colitis, and they have been ascribed to inflammation in the rectal segment.[8] Dyspareunia was less frequent in both groups after operation. However, persistent postoperative dyspareunia was more frequent in the Kock pouch group than the ileoanal anastomosis group, although it rarely resulted in decreased sexual activity. This increased incidence of dyspareunia in the Kock pouch group may be related to angulation or stenosis of the vaginal vault or retroversion of the uterus, or both, after complete proctectomy and closure of the pelvic floor. These factors may also be responsible for the complaints in the Kock pouch group of excessive positional vaginal discharge, which presumably reflects poor vaginal drainage. These problems might be minimized by ensuring that closure of the pelvic floor after proctectomy has not produced a stenosis of the vaginal vault or a "ridge" in the posterior vaginal wall. The incidence of postoperative dyspareunia in patients who underwent an ileoanal procedure in this series is higher than previously reported.[12] This undoubtedly reflects the difference in response to a general question concerning changes in sexual function compared with specific questions. The incidence of dyspareunia in the previous series was similar to the incidence of dyspareunia severe enough to interfere with the frequency of intercourse in the current series.

Disturbance of the ability to achieve orgasm was rare in our series, as it was for male patients who underwent proctectomy for benign disease.[5,6] Its occurrence, however, suggests that the autonomic pelvic plexuses are important in female sexual function. The plexuses should be preserved if possible.

Pregnancy and childbearing are possible after either procedure, and although our series was small, it suggests that fertility is only minimally decreased. Complications related to the gastrointestinal tract during pregnancy tended to be more frequent in the Kock pouch group.

TABLE 7. *Factors Enhancing Self-image After Operation**

	Patients (%)	
	Ileoanal Anastomosis	Kock Pouch
Improved health	52	43
Absence of Brooke stoma	42	48
Control of bowel function	9	5
Improved sexual function	3	0

* Some patients gave more than one response.

Vaginal delivery is feasible after either procedure; therefore, the choice of the route of delivery should probably be based primarily on obstetric considerations.

In summary, sexual function was investigated in women who had proctocolectomy for ulcerative colitis or polyposis coli. Dyspareunia was greater in those who underwent procedures in which the rectum was excised and the pelvic floor closed (Kock pouch) than in those who had distal rectal and pelvic preservation (ileoanal anastomosis). Postoperative dyspareunia was seldom severe enough to interfere with sexual function in either group. Most women in both groups experienced improved sexual function after operation, and such improvement was usually attributed to better health.

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