Sexual Function Following Restorative Proctocolectomy in Women

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PURPOSE: This study was undertaken to identify the incidence and type of sexual dysfunction experienced by women after undergoing restorative proctocolectomy. METHODS: A questionnaire was sent to 262 females who underwent restorative proctocolectomy by a single surgeon from 1984 to 1993. The response rate was 35 percent (92/262). Additional information was gained from our pelvic pouch data base. Mean follow-up was 43 (6–130) months. RESULTS: Following surgery, a significant increase was found in vaginal dryness, dyspareunia, pain interfering with sexual pleasure, and limiting of sexual activity because of concerns of stool leakage. There was no significant change in sexual desire, arousal, sensitivity, frequency of intercourse, or satisfaction with sexual relationship. CONCLUSION: Potential sexual dysfunction following restorative proctocolectomy in women merits discussion in preoperative counseling with the patient. [Key words: Pelvic pouch surgery; Sexual dysfunction; Complications; Females; Dyspareunia]

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Total proctocolectomy and ileal pouch-anal anastomosis (IPAA) has become the surgical procedure of choice for ulcerative colitis. Many patients with familial adenomatous polyposis are also offered this procedure.

Sexual dysfunction following proctocolectomy is a well-recognized complication. Traditional reporting of this problem has been related to male sexual function, in particular, the reporting of impotence and retrograde ejaculation, whereas relatively few details and little reporting on female sexual function has been done. Moreover, such reporting commonly emanates from global questionnaires that include few questions relating to sexual function but for which the majority of responses solicited relate to other aspects of pelvic pouch surgery. Few questionnaires and reports have focused solely on female sexual function after IPAA. The purpose of this study was to do an in-depth evaluation of female sexual function following restorative proctocolectomy with IPAA.

MATERIALS AND METHODS

A questionnaire was devised using the Sexual Function Questionnaire that is used in the Cleveland Clinic's Department of Urology, Sexual Function Center.[1] Assistance in modification of the questionnaire for this patient population was provided by a psychologist in that department who has also done other studies evaluating female sexual function after radical gynecologic and urologic surgery.

The questionnaire was mailed to 262 women. This represented all women who had undergone restorative proctocolectomy by one surgeon from 1983 to 1993. Women were provided a self-addressed envelope in which to return their questionnaires, and all information was confidential. Ninety-two women (35 percent) returned the questionnaire.

The following information was abstracted from the pouch data base. The pathologic diagnosis of these 92 women included ulcerative colitis (n = 69), indeterminate colitis (n = 14), familial polyposis (n = 6), Crohn's disease (n = 2), and extensive colorectal hemangiomas (n = 1). Average duration of disease was nine (range, 1–38) years. Mean age of patients was 38 (range, 19–70) years. Seventy patients underwent stapled anastomosis, and 22 had mucosectomy with handsewn IPAA. Thirty-two patients initially had subtotal colectomy, and 60 patients had total proctocolectomy and IPAA at the initial surgery. Median follow-up was 37.3 (range, 4.6–118.9) months. Statistical analysis consisted of the chi-squared goodness of fit test, with significance being set at $P < 0.05$.

Ninety-two women responded to 21 multiple choice questions (postal questionnaire) dealing with sexual practice and function both preoperatively and postoperatively. The questions gave a choice of six possible answers and allowed responses relating to change in status following surgery. Table 1 is an example of one of the questions. Table 2 lists the

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Table 1.
Sample of Questions

Do you feel pain in your genitalia (sexual parts) during sexual intercourse?
1) Never
2) Rarely, less than 10% of the time
3) Seldom, less than 25% of the time
4) Sometimes, 50% of the time
5) Usually, 75% of the time
6) Nearly always, more than 90% of the time
Has this changed since surgery?
1) More often
2) Less often
3) No change

Table 2.
Gynecologic Problems After Surgery

	Questions Used in Assessment Related to
1.	Frequency of sexual intercourse
2.	Frequency of desire
3.	Frequency of arousal during sexual activity
4.	Ability/frequency to reach orgasm through masturbation-self
5.	Same with partner
6.	Ability/frequency to reach orgasm through intercourse
7.	Change in intensity of orgasm
8.	Increased vaginal dryness interfering with intercourse
9.	Pain in genitalia during intercourse
10.	Pain, genital or nongenital, interfering with ability to feel pleasure
11.	Change in sensitivity to touch of genitalia
12.	Overall satisfaction with sexual relationship
13.	Problems using tampons postoperatively
14.	Fear of harming pouch by having intercourse
15.	Menopause
16.	Medical problems interfering with sex life
17.	Medications that may interfere with sex life
18.	Physical appearance (scars) affecting feelings of attractiveness in the nude
19.	Concerns about stool leakage causing avoidance of sexual activity
20.	Gynecologic problems since surgery; pelvic pain, ovarian cysts, infertility, dyspareunia, others
21.	Overall, how pouch surgery has affected sex life

subject matter of the questions used relating to changes preoperatively and postoperatively.

RESULTS

Ten questions were examined in detail, and a summary of data on these ten questions is listed in Table 3. Results of the various statistical comparisons of the alterations in behavior and frequencies are listed in Table 4. In the statistical analysis, there is an acknowledgment that 50 percent or more of patients had no change in a particular behavior or frequency. Therefore, comparisons were derived from more *vs.* less responses with *P* values and confidence intervals listed.

The only significant differences in sexual function pre-IPAA and post-IPAA identified in this study were vaginal dryness postoperatively, dyspareunia, pain interfering with ability to feel sexual pleasure, and fear of stool leakage limiting sexual activity (Table 4).

Twenty-two patients stated that they had increased vaginal dryness postoperatively (Table 3). Encouragingly, 81 percent of the women who complained of vaginal dryness stated it was seldom or never, 11 percent felt it was sometimes, and only 7 percent felt they had dryness 75 percent or more of the time.

We found 26.5 percent of patients with dyspareunia after undergoing IPAA (Table 3). Although 26.5 percent noted an increase in dyspareunia, 75 percent of these women stated it was seldom or never, 13 percent indicated sometimes, and 11 percent reported usually or nearly always. The 52 patients who had no change includes 24 patients who stated they never had painful intercourse. None of the patients complaining of dyspareunia had pelvic sepsis.

Twenty-five (30.5 percent) women felt that pain, genital or nongenital, during intercourse interfered with their ability to feel sexual pleasure (Table 3). Eighty-three percent of those claiming an increase said it was seldom or never, and only 6 percent stated it was 75 percent or more of the time. The 48 with no change, in Table 3, includes 24 women who stated they never had pain with intercourse.

Seventeen women in this study stated they altered their sexual activities because of concerns about stool leakage (Table 3). Five of these women stated that the leakage resolved within the first year.

Despite the resultant dysfunction, 22.5 percent of women felt their sexual relationship with their partner was more satisfactory, and 51.3 percent noted no change (Table 3). Although 26 percent felt their relationship less satisfactory, 86 percent felt their relationships were moderately to extremely satisfactory. In other words, the patient may have dropped from an extremely satisfying to a moderately satisfying relationship. Only one woman felt her outcome after IPAA limited her sexual activity to such an extent that

Table 3.
Summary of Data for Ten Questions of Interest

Question	All Data (%)			Changes Only (%)	
	More	Less	No Change	More	Less
Frequency of sexual intercourse or activity	19 (21.8)	16 (18.4)	52 (59.8)	19 (54.3)	16 (45.7)
Frequency of feelings of sexual desire	25 (28.7)	16 (18.4)	46 (52.9)	25 (61.0)	16 (39.0)
Feelings of sexual arousal when having sex with partner	18 (21.4)	13 (15.5)	53 (63.1)	18 (58.1)	13 (41.9)
Reach orgasm through sexual intercourse	15 (17.9)	13 (15.5)	56 (66.7)	15 (53.6)	13 (46.4)
Vagina too dry or tight for intercourse	22 (26.8)	5 (6.1)	55 (67.1)	22 (81.5)	5 (18.5)
Pain in genitalia during intercourse	22 (26.5)	9 (10.8)	52 (62.7)	22 (71.0)	9 (29.0)
How often pain interferes with ability to feel sexual pleasure	25 (30.5)	9 (11.0)	48 (58.5)	25 (73.5)	9 (26.5)
Change in sensitivity to touch of genitalia since surgery	16 (18.8)	9 (10.6)	60 (70.6)	16 (64.0)	9 (36.0)
Overall satisfaction with sexual relationship with partner	18 (22.5)	21 (26.3)	41 (51.3)	18 (46.2)	21 (53.8)
Avoid sexual activity because of concerns about stool leakage	17 (20.2) (Yes)	67 (79.8) (No)			

Table 4.
Results of Various Statistical Comparisons

Question	*P* Values from Various Tests	95% CI	
		More	Less
Frequency of sexual intercourse or activity	0.61	13.2–30.5	10.3–26.5
Frequency of feelings of sexual desire	0.16	19.2–38.2	10.3–26.5
Feelings of sexual arousal when having sex with partner	0.37	12.7–30.2	7.7–23.2
Reach orgasm through sexual intercourse	0.71	9.7–26.0	7.7–23.2
Vagina too dry or tight for intercourse	0.001*	17.2–36.4	0.9–11.3
Pain in genitalia during intercourse	0.020*	17.0–36.0	4.2–17.5
How often pain interferes with ability to feel sexual pleasure	0.006*	20.5–40.5	4.2–17.7
Change in sensitivity to touch of genitalia since surgery	0.16	10.5–27.1	4.0–17.1
Overall satisfaction with sexual relationship with partner	0.63	13.3–31.7	16.6–35.9
Avoid sexual activity because of concerns about stool leakage	<0.001* (Yes *vs.* no)	11.6–28.8 (Yes)	71.2–88.4 (No)

CI = confidence interval.
* Significant ($P < 0.05$).

she wished she had not undergone the surgery.

We questioned patients on gynecologic problems after surgery (Table 2). Although pregnancy was not specifically addressed, patients volunteered the data of four pregnancies and five births. Three patients commented that they had increased severity of dysmenorrhea, ten patients reported ovarian cysts, and ten patients reported infertility. Two of the patients reporting infertility were eventually able to conceive, and one had been trying to conceive for one year at the time the questionnaire was returned.

DISCUSSION

Sexual dysfunction in women appears to be less studied and far less understood following total proctocolectomy and IPAA. We attempted to identify the incidence and type of sexual dysfunction experienced. Although the number of women experiencing vaginal dryness, dyspareunia, and concerns about leakage was small, the individual impact was clinically significant. Recent studies of 21 Swedish[2] and 23 Danish[3] patients examined sexual dysfunction in detail, focusing on fertility, physical changes in the pelvis, frequency of intercourse, orgasm, masturbation, vaginal discharge, and dyspareunia.

The Swedish study found that five women experienced occasional dyspareunia, three had concerns and took special precautions to avoid stool leakage during intercourse, one had vaginal discharge, and two had increased dysmenorrhea. They found that five women experienced decreased sexual interest, two with an increased and one with a decreased ability to achieve orgasm and two with reduced vaginal sensitivity. This study found the fallopian tubes adhering to the pelvic floor in one-half of the patients and occlusion of one or both tubes in 11 patients. The Denmark study showed increased frequency of intercourse, increased quality of orgasm, no dyspareunia, no vaginal discharge or changes in menstrual cycle, and no fecal leakage during intercourse.

Lahey Clinic reported 110 women who answered a questionnaire that included questions about orgasm and dyspareunia and general questions on menstrual changes, pregnancy, and delivery.[4] Data were collected comparing preoperative and postoperative data. Dyspareunia was recorded in 15 percent of women, 7 percent with related fecal incontinence during intercourse, 31 percent with menstrual problems, 7.4 percent with pelvic cysts, and 18 patients with infertility.

When comparing our study with these others, our study showed the highest rate of dyspareunia, 26.5 percent. Whether this relates to something we do technically at operation or simply a higher proportion of patients with this problem returning the questionnaire is uncertain. Published rates vary from 0 to 26.5 percent in the literature.[2–6] Thoughts on etiology and rates of dyspareunia in such patients vary from institution to institution. Results in the healthy female population show that 8 percent of women have some sort of discomfort in their genitalia during intercourse at least 50 percent of the time, and 18 percent experience pain less than 10 percent of the time.[1] Our patients stated that changing position for intercourse often alleviated dyspareunia.

Vaginal dryness was not addressed in any of the previously cited studies. Our results showed a significant increase in vaginal dryness after IPAA (P = 0.001). Etiology of this is not certain; perhaps this is attributable to injury to the sexual nerves. Because only 21 of patients responding to our study stated that they were menopausal at the time of filling out the questionnaire, this probably had little impact on the issue of vaginal dryness. Additionally, of these 21 patients, only 6 noticed an increase in vaginal dryness postoperatively, with most women finding the situation manageable by the use of personal lubricants.

We found that the complaint that pain interfered with sexual pleasure was significant in our study patients (P = 0.006). This pain could be genital, incisional, or from adhesions. Preliminary indications are that it decreased over time.

Rates of stool leakage postoperatively were previously discussed. This study showed that a significant number of patients (P = 0.001) limited or altered their sexual activity because of these concerns. The "alterations" in activity varied from having a bowel movement before intercourse, not eating for varied time periods before sexual activity, or putting protection on their beds, to avoiding intercourse. Our review of the literature showed few other articles that addressed concerns about stool leakage during intercourse, two showing a rate of 9 percent and 7 percent, respectively.[2, 4]

Ninety-two of 262 women returned our questionnaire. We acknowledge that they may represent a higher proportion of patients from either end of the spectrum, *i.e.*, experiencing more problems or less problems after their surgery. In similar comprehensive studies, the response rate varied from 35 to 100 percent. Our low response rate is a concern in determining the validity of the results. This could be attributed to a variety of causes; questionnaires were only sent once, and no follow-up phone calls were made. Patients may have been reluctant to answer the questionnaire because of the sensitive nature of the questions and because they did not want to divulge the answers to the authors, who see them face to face in a clinical situation. Additionally, in 59 cases, the patient's address had changed, and there was no forwarding address. Therefore, no response was possible. Extensive time was also spent trying to track down the address of these 59 patients. When considering 92 women returned the questionnaire of a possible 203 (262–59), the actual response rate is approximately 45 percent.

Few surgeons would argue that it is mandatory to discuss with male patients preoperatively the possible postoperative complications in sexual dysfunction after IPAA. Even though the incidence of these complications is low, this discussion is imperative because of the devastating nature of these complications. Even though comparable complications in women are not as concrete (*i.e.*, impotence *vs.* dyspareunia), these discussions regarding possible sexual dysfunction postoperatively in our female patients are just as important.

CONCLUSION

In our study, women identified increased vaginal dryness, dyspareunia, pain interfering with sexual pleasure, and concerns about stool leakage as significant personal issues. However, most felt that these problems were seldom or infrequent, and, overall, sexual relationships were reported as moderately to extremely satisfactory. Generally, quality of life and health improved after IPAA. These results merit discussion in the preoperative counseling of women who are considering IPAA and are valuable in the postoperative period for advice and reassurance to those women who are experiencing problems.

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