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Gynaecological problems related to anatomical changes after conventional proctocolectomy and ileostomy

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Abstract. Seventy-one women who had a proctocolectomy for ulcerative colitis ($n=41$) or Crohn's disease ($n=30$) were interviewed in the follow-up clinic about gynaecological problems and fertility. All women were examined by an independent gynaecologist and abnormalities of the internal genital tract were registered. Forty-nine per cent (35/71) of the women had a distressing vaginal discharge after proctocolectomy, compared with 9% (6/71) before surgery. At the gynaecological examination 45% (32/71) had a heavy vaginal secretion with- out any signs of an acute vaginal infection. In 68% (30/44) fluid retention in the vagina was associated with a caudally firmly fixed and dilatated posterior vaginal fornix. Twelve per cent (8/66) of the women reported dyspareunia before surgery. After surgery, 27% (18/66) complained of this symptom. Fertility was significantly reduced after surgery since only 37% (10/27) of the women who attempted to become pregnant succeeded within 5 years follow-up. The corresponding figure before surgery was 72% (39/54). Those who conceived went through pregnancy and parturition without any incident, 6 of 21 delivered by caesarean incision. In conclusion, conventional proctocolectomy in women will result in distressing vaginal discharge, and dyspareunia in a considerable proportion of the patients. The operation also seems to decrease their chances of becoming pregnant.

Introduction

Disturbance of sexual function in the male after conventional proctocolectomy is a well recognized complication and its relationship to damage of the pelvic autonomic nerves fairly well understood [1–5]. By comparison with studies on men, there have been fewer investigations on gynaecological dysfunction after such an operation, however. The main difficulty encountered by women in previous studies appears to be dyspareunia and orgasmic failure [4–6], but information on other possible disturbances such as menstrual disorders and vaginal discharge is superficial and scant. Surprisingly little effort has been made to study how surgery and subsequent postoperative adhesion formation may change pelvic anatomy and affect the function of vagina, uterus, the fallopian tubes and ovaries.

The aim of this study was to identify any gynaecological problems and their possible relationship to postoperative anatomical changes of the genital tract in a series of women subjected to conventional proctocolectomy. An attempt was also made to assess the relative chances of these women becoming pregnant.

Material and methods

Seventy-one women who had a proctocolectomy for ulcerative colitis ($n=41$) or Crohn's disease ($n=31$) were interviewed at the follow-up clinic about their gynaecological history before and after surgery according to a standard form. The age distribution is shown in Fig. 1. Eleven of the 71 women were postmenopausal at the time of the investigation. They were asked about menstrual disorders, problems of vaginal discharge, sexual disorders such as dyspareunia and fertility problems. This latter detail was assessed on the basis of the number of pregnancies achieved after attempts to become pregnant for at least one year. All women were then examined by an independent gynaecologist. Vaginal secretion was arbitrarily graded as *no secretion, moderate secretion* (posterior fornix filled with fluid but as cervix identified without prior wash out) or *heavy secretion* (upper third of vagina filled with fluid, cervix identified after washout). Anatomical changes of the vagina were classified as a = none, b = caudal fixation of the posterior vaginal fornix but no dilatation, c = dilatation of posterior vaginal fornix but no caudal fixation and d = caudal firm fixation and dilatation of the posterior vaginal fornix (see Table 1).

Bacterial culture from the cervical canal was performed for Chlamydia trachomatis in 33 women. Cytological evaluation of the cervical epithelium was performed in 37 women.

Statistics: For comparison between groups, Chi square analysis was used.

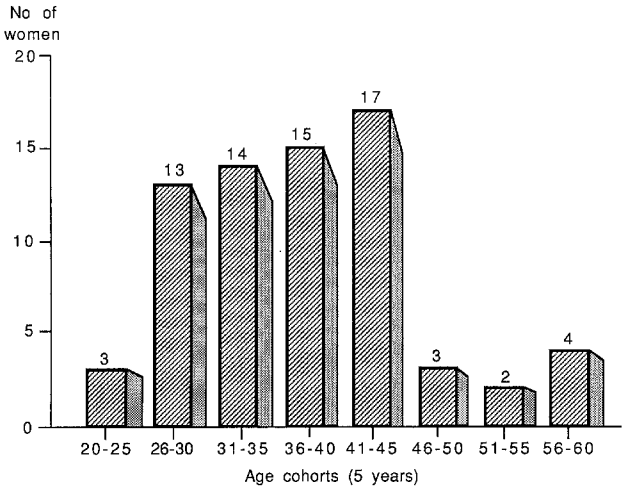

Fig. 1. Number of women in each 5 years age cohorts

Results

Interviews

There were no significant differences in the menstrual cycle before and after surgery (Table 2). However, 90% (54/60) of the patients stated that menstrual bleeding lasted on average one day longer than before the operation.

The main gynaecological problem was vaginal discharge. Before surgery, 9% (6/71) of women had this problem regularly while 49% (35/71) of the women claimed that they had constant problems with vaginal discharge after surgery (Table 3). The degree of vaginal discharge was related to the position of the body in that the symptom was more pronounced when the women rose from sitting or lying.

Dyspareunia was reported by 12% (8/66) of the women before surgery and by 27% (18/66) after surgery (Table 3). Sexual activity as judged from frequency of intercourse (≥ 1 coitus/week) did not differ before (44/66) and after surgery (44/66), however.

Fifty-four women did not take any contraceptive measures before surgery and 72% (39/54) became pregnant. Twenty-seven women attempted to become pregnant after surgery but only 37% (10/27) succeeded. None of the women in this group had any history of gynaecological infection or abdominal surgery except the proctocolectomy. The decrease in pregnancy rate was statistically significant ($p < 0.001$). There were no differences in pregnancy rate before or after surgery with respect to type of intestinal disease (Table 4). Furthermore, among 10 women who had been pregnant before but attempted to become pregnant after surgery, only 3 succeeded.

There were no major problems during pregnancy or delivery. Twenty-one were delivered vaginally and 6 by caesarean section.

Contraception was used by 23 of the 60 menstruating women. The methods used are listed in Table 5.

Table 1. Vaginal discharge related to change in vaginal anatomy

Anatomical changes	Amount of vaginal secretion			
	No	Moderate	Heavy	Total
None	8	5	0	13
Caudal fixation of the post vag. fornix but no dilatation	4	2	0	6
Dilatation of the post vag. fornix but no caudal fixation	2	4	2	8
Caudal firm fixation and dilatation of post vag. fornix	1	13	30	44
Total	15	24	32 (45%)	71

Table 2. Menstrual pattern before and after surgery

Characterization of menstruation	Before surgery no. of women	After surgery no. of women
Regular	52	48
Irregular	8	12
Dysmenorrhoea	18	22

Table 3. Gynaecological symptoms before and after surgery

Symptom	Before surgery no. of women	After surgery no. of women
Vaginal discharge	6/71 (9%)	35/71 (49%)*
Dyspareunia	8[a]/66 (12%)	18/66 (27%)**

[a] Four of these women did not have any dyspareunia after surgery; *$p < 0.001$, **$p < 0.05$

Table 4. Fertility before and after surgery

Fertility	Before surgery no. of women		After surgery no. of women	
	UC	CD	UC	CD
Pregnant	19	20 (72%)*	6	4 (27%)*
Not pregnant	8	7 (28%)	8	9 (73%)
Total	54		27	

*$p < 0.001$; UC = ulcerative colitis; CD = Crohn's disease

Table 5. Contraceptive methods used

Method	No. of women
Sterilized	1
Barrier method	1
Husband sterilized	1
Oral contraceptives	10
Intrauterine device	10
Total	23

Gynaecological examination

The most frequent change in vaginal anatomy observed in 61% (44/71) of the patients was caudal fixation of the posterior vaginal fornix which was dilated into a pouch (Table 1). Heavy secretion was demonstrated in 68% (30/44) of the women with combined caudal fixation and pouch formation of the posterior vaginal fornix, while this symptom was significantly less common ($p < 0.05$) in the other subgroups (Table 1).

The uterus could be palpated in 78% (54/69) (two women were hysterectomized). It was firmly fixed in a retroverted position in 57% (31/54) of the women.

The ovaries could be identified in 48% (34/71). However, in only 8% (6/71) of the women was at least one of the ovaries mobile. None of the 33 cultures for Chlamydia trachomatis was positive. All 37 cytological evaluations of cervical epithelium were normal.

Discussion

A profuse vaginal discharge was the most common complaint in the present series of women, constituting a daily problem in almost 50% and being most marked on positional changes. A heavy retention of vaginal secretion was demonstrated more frequently in those who had the most exaggerated changes in vaginal anatomy with caudal fixation and dilatation of the posterior vaginal fornix. The observations are in accordance with those reported by Emblem and Stray-Pedersen [6]. The postoperative distortion of vaginal anatomy as demonstrated at the gynaecological examination probably interferes with vaginal drainage and appears therefore to be the principal cause of this distressing symptom. These abnormalities have been documented in a recent radiological investigation of these women where the topographic changes of the vagina and displacement of the adnexa were confirmed [7].

As regards the effect of operation on the act of intercourse information in literature is incomplete and the results varied. Apart from psychological factors which may have a considerable impact on sexual life in ileostomy patients, mechanical difficulties during intercourse with discomfort and pain due to perineal scarification or suppuration or vaginal stenosis are also reported to occur in these patients [1, 2, 6]. In the present study about one third of the women complained of dyspareunia postoperatively which is in accordance with previous reports. Nevertheless, despite the increased incidence of this complaint after surgery there was no significant change in their postoperative sexual activities. This is an interesting observation that has been noted by others. In fact even an enhancement of sexual relationships is often reported to occur postoperatively being attributed to improvement in general health [2, 4].

To what extent proctocolectomy influences fertility is not known. The disease itself and its impact on fertility increases the complexity of the problem. About ¾ of the women in the present study who attempted to become pregnant before surgery succeeded, a figure which is close to that of healthy fertile women [8]. In contrast only one third of the women who attempted to become pregnant after surgery succeeded. The pre- and postoperative pregnancy rate was similar in patients with Crohn's and ulcerative colitis. The diminished chances of women becoming pregnant after this operation is not surprising considering the gross postoperative distortion of pelvic anatomy caused by adhesion formation in the vicinity of the fallopian tubes and the ovaries. Hysterosalpingography disclosed occlusion of at least one tube in the majority of these women [7].

Infertility that seems to be present in a high proportion of the women after conventional proctocolectomy raises two important questions. Which patients are infertile and using contraception unnecessarily, and what can be done for those who prove to be infertile but wish to be pregnant? Hysterosalpingography is justified in these women. Women with occlusion of the fallopian tubes could then be spared the inconvenience and/or risks of taking contraceptive pills. As for those with tubal occlusion who have a strong wish to become pregnant, microsurgery is probably an unsuitable approach considering the likely extent of pelvic adhesions. In vitro fertilization appears therefore to be a more realistic alternative [9].

It was gratifying that all women who conceived went through pregnancy and parturition without any incident, a few delivered by caesarean section. Other authors have recorded equally reassuring experiences [10, 11].

The results of the present study show that distressing vaginal discharge, dyspareunia and infertility are common sequelae after conventional proctocolectomy, contributing greatly to long term morbidity. It appears very likely that these problems are partly or entirely related to postoperative changes in vaginal anatomy, distortion and fibrosis in the pelvis and adhesion formation. Since removal of the sphincters and the pelvic musculature is not necessary for benign disease, preservation of these structures by an intersphincteric technique has been advocated by some authors [12] while mucosal proctectomy preserving the entire sphincter apparatus and perineal area is recommended by others [13]. The advantages of such techniques with respect to gynaecological symptoms are not known. Restorative proctocolectomy with replacement of the rectum by an ileal pouch and an ileoanal anastomosis has become the first alternative for treatment of ulcerative colitis in many specialist centres. Apart from preservation of the sphincters and anus the "new" rectum prevents posterior displacement of the vagina and caudal sliding of the adnexae. Gratifying results with fewer gynaecological complaints have been reported [14], while conflicting views are presented by others [15]. To what extent the new technique might lessen the risk of infertility also remains to be shown.

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