Colorectal endometriosis: benefits of long-term follow-up in patients who underwent laparoscopic surgery

In this retrospective cohort study, three groups of patients were included: 60 women who underwent endometriosis surgery with colorectal segmental resection, 40 women with surgical evidence of bowel endometriosis who underwent endometriosis removal without bowel resection, and 55 women affected by moderate or severe endometriosis with at least one endometrioma and deep infiltrating endometriosis but without bowel involvement. The results of a long-term ambulatory follow-up showed that if colorectal endometriosis was present, postoperative pain regression was more frequent, and among patients with bowel endometriosis the rate of recurrence was lower if segmental resection was performed. (Fertil Steril® 2010;93:2444–6. ©2010 by American Society for Reproductive Medicine.)

Key Words: Bowel segmental resection, colorectal endometriosis, laparoscopy, pelvic pain, recurrence rate

Endometriosis usually affects women of fertile age and can be responsible for pain symptoms (1, 2) and infertility (3–5). The incidence of bowel infiltration among women with endometriosis ranges from 5.9–12% (6–9). The most frequently affected sites are the rectum and rectosigmoid junction, reaching up to 93% (10–12) of all intestinal endometriotic lesions. Surgical removal of bowel endometriosis is controversial because of possible complications. Recent studies demonstrated the feasibility and safety of laparoscopic colorectal resection (10, 13–19).

For this study, we selected patients suffering from both infertility and pelvic pain caused by endometriosis, and we tried to characterize pain improvement and the risk of recurrence if a colorectal resection was performed. Only infertile patients were included, to avoid the potential influence of medical therapy on postoperative symptoms and the incidence of recurrence.

Three groups of patients were identified among infertile patients who underwent laparoscopic surgery between May 2000 and May 2005 in our specialized endometriosis unit. Indication for surgery was severe pelvic pain (dysmenorrhea, dyschezia, dyspareunia, and nonmenstrual pelvic pain) refractory to medical treatment or severe bowel stenosis owing to endometriosis.

Group A (60 women) consisted of patients who underwent surgery with colorectal segmental resection, because of strong abdominal or pelvic pain that was often associated with a significant bowel stenosis. Forty patients with surgical evidence of bowel endometriosis (group B) underwent endometriosis removal without bowel resection because of lack of the patients' consent. Group C consisted of 55 women affected by endometriosis (stage III-IV rASRM) without bowel involvement. Patients older than 40 years or those who underwent surgery for bowel endometriosis other than segmental resection (i.e., discoid resection) were not included in the study.

A thorough patient history was collected before surgery. The intensity of pain was evaluated using a visual analogue scale (VAS; 10-point rating scale: 0 = absent, 10 = unbearable) for the main symptoms: dysmenorrhea, nonmenstrual pelvic pain, dyspareunia, and dyschezia. If any hormonal therapy was given, it was stopped at least 4 months before surgery.

Complete excision of all visible endometriotic lesions was performed using 5-mm bipolar scissors working retroperitoneally in healthy tissue (15, 20, 21). The bowel resection was performed by a colorectal surgeon. To exteriorize the proximal end of the bowel, a small, mini-laparotomic incision was made, as described previously (15–18). A clinical follow-up was offered 1 month, 6 months, and yearly for 4 years after surgery. Endometriosis recurrence was checked by rectovaginal examination and transvaginal ultrasonography. Data were collected in Microsoft Excel 2001 (Redmond, WA). The institutional review board approval was not required because of the nature of the study (a retrospective cohort study). All statistical tests and confidence intervals were created with a 5% level of significance. The data analysis was performed with the use of SPSS version 14.0 (SPSS, Inc., Chicago, IL).

All groups were homogeneous for clinical data such as previous surgery, age, and previous pregnancies. Most patients (62.5%) included in the study have already had surgery for endometriosis at least once in the past, but they exhibited strong pelvic pains caused

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by moderate or severe endometriosis. The mean follow-up period was 26.9 months.

In group A, 17 of 48 who tried to conceive (35%) succeeded after surgery; in group B, 8 of 39 (21%) succeeded; and in group C, 32 of 46 (70%) succeeded, with a significant difference between groups (P=0.005).

Significant differences between the three groups were found also in terms of changes in symptomatology after surgery. Figure 1 represents the percentage of patients with pain that improved, aggravated, unchanged, or disappeared after surgery, and symptom recurrence after some period of wellness. Every symptom (dysmenorrhea, dyspareunia, dyschezia, nonmenstrual pelvic pain) was evaluated separately and it was analyzed only in patients who reported that before surgery. The percentage of asymptomatic patients and the percentage of women who experienced an improvement was higher after bowel resection (group A) than those of the group B. The percentage of patients who reported complete regression of pain after surgery in groups A and B was 81% and 46% for dyspareunia (P=0.002), 81% and 46% for dyschezia (P=0.010), 87% and 33% for nonmenstrual pelvic pain (P=0), and 76% and 41% for dysmenorrhea (P=0), respectively. The difference in the median VAS score for all symptoms before and after surgery was also different between the three groups, with better results after bowel resection. In group C, 94% of women with dyspareunia were completely asymptomatic after surgery, 83% for dyschezia, 89% for nonmenstrual pelvic pain, and 67% for dysmenorrhea.

The pain recurrence was diagnosed if a strong pain (VAS $>$ 5) disappeared after surgery for at least 6 months and subsequently became aggravated again. Recurrences were more frequent in group B than in group A, as expected. The strumental recurrence was supposed if endometriosis was detected by ultrasound or magnetic resonance imaging after surgery. The surgical evidence of recurrence was reported if another laparoscopy for severe symptom recurrence was performed during the follow-up period. The incidence of strumental or surgical recurrence was 13% in group A and 38% in group B (P=0.005). The recurrence rate was low in group C (5%). The difference between group A and B was evident for the strumental recurrence of the disease (7 vs. 23%; $P < 0.05$) and the recurrence of symptoms (10 vs. 35%; P=0.002), whereas it was nonsignificant for the surgical evidence of recurrence (7 vs. 15%; P=0.17) perhaps owing to small numbers.

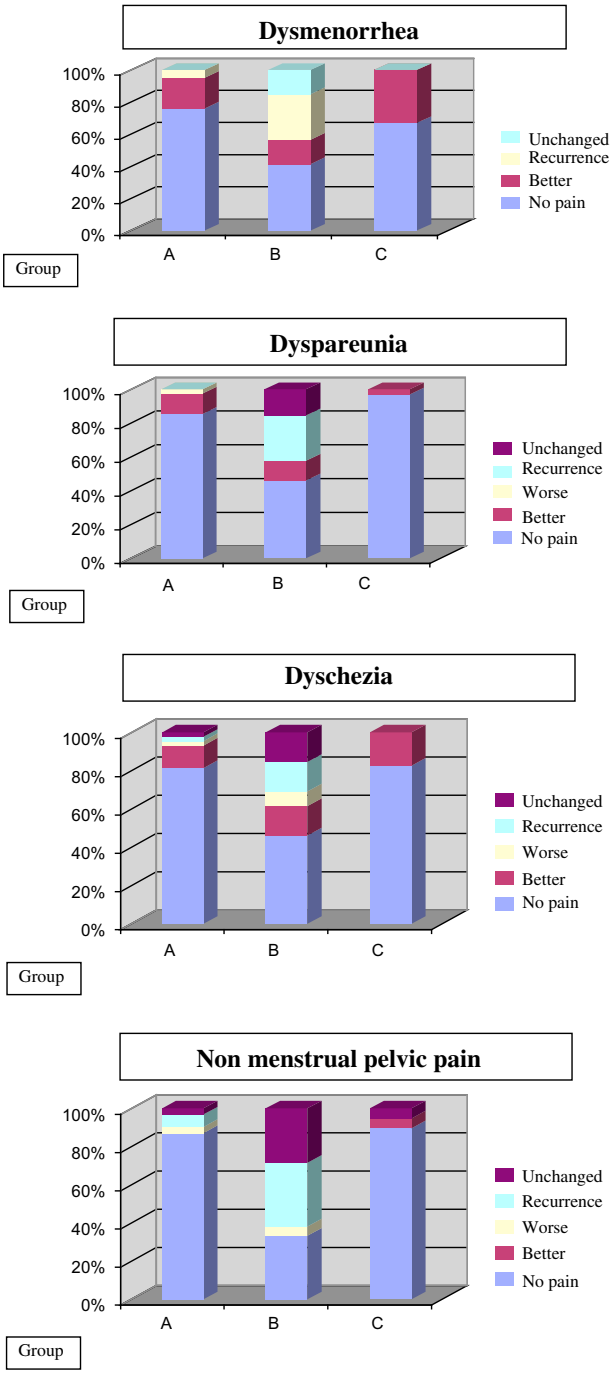
There was no surgical evidence of recurrence in group C. The median time from surgery to recurrence was not different (P=0.84) between groups A and B, being 26 (range, 14–46 months) and 24 months (range, 8–46 months), respectively.

In group A, we observed two cases of anastomotic fistulae (3.2%), both after very low bowel resections. Other early postoperative complications in group A were: ureteral lesion (1.6%), bladder lesion (1.6%), bowel occlusion (1.6%), or severe blood loss (12.8%) treated by hemotransfusion (6.4%) or autotransfusion (6.4%). Urine retention for $<$1 month was present in 15 patients (25%), and the mean time of autocatheterization was 2.4 days. The late complications in group A were: urine retention for $>$1 month in three patients (5%), constipation (1.6%), and one case of premature ovarian failure (1.6%).

Some authors reported good results in terms of symptomatology and a quality of life with low recurrence rates after bowel resection for endometriosis (22–26), although the procedure is not free of possible complications (27–30). In our series, we report no complications in women who underwent laparoscopy without

FIGURE 1

Evaluation of postoperative pain symptomatology at last follow-up in different groups. Every symptom was analyzed only if present before surgery. Group A: segmental bowel resection for endometriosis.Group B: residual bowel endometriosis. Group C: no bowel endometriosis.



Stepniewska. Laparoscopy for bowel endometriosis. Fertil Steril 2010.

bowel resection (groups B and C). The main complication of bowel resection, anastomotic fistulae, occured in two cases (3.2%) when a very low bowel resection was performed. The incidence of bowel fistulae reported by some authors was higher: in the study by Darai et al. (22), fistulae occurrence was 9%, whereas Dubernard et al. (24) and Jerby et al. (9) reported 10% and 14%, respectively. In the study by Redwine and Wright (13), there were no fistulae after 6 bowel resections, whereas Possover et al. (31) describes 2 cases (in 34 patients) of anastomotic dehiscence that did not need reintervention. The risk of complications depends on the clinical conditions, such as the level of the bowel stenosis, opening of the vaginal wall, the extension of endometriosis infiltration, and the surgeon's experience. The incidence of fistula in our study is low, probably because of the routine positioning of an omental flap between the vaginal and colorectal suture in cases of vaginal resection as well as the long experience of operators (15, 17, 18).

The surgical evidence of recurrence was slightly increased after ovarian stimulation in group B (4 cases of recurrence in 16 patients who underwent ovarian stimulation vs. 2 of patients who did not undergo ovarian stimulation 24), but these results are not informative because of the small number of patients. The strumental recurrence was not significantly different if successive ovarian stimulation was performed (4/16 vs. 5/24). A recent study reported that ovarian stimulation treatments do not enhance the recurrence rate (28).

However, the decision to perform segmental bowel resection in young women desiring to conceive is controversial because of possible complications, although reduced with expert surgeons. The decision should be evaluated and discussed openly with the patient. Our data suggest that bowel resection is not completely free of recurrence of endometriosis, but the incidence of recurrence is significantly lower.

Our study has undoubtedly some limitation, although it has the advantage of patients who all received surgery and follow-up longitudinally for 4 years in the same center. The data in this study might be important when a decision about bowel resection is discussed, thus providing some evidence that bowel resection improves symptomatology and reduces the risk of recurrence for a long time.

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