Correlation between endometriosis-associated dysmenorrhea and the presence of typical or atypical lesions

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Objective: To evaluate the correlation between the severity of endometriosis-associated dysmenorrhea and the extent of the disease assessed both with a current classification system and with the number and type of endometriosis lesions.

Design: Prospective, blinded study.

Setting: Tertiary care, university hospital.

Patient(s): Sixty-five consecutive patients with endometriosis diagnosed at laparoscopy performed for pelvic pain, infertility, or adnexal mass.

Intervention(s): The patients were submitted preoperatively to a questionnaire including the assessment of the severity of dysmenorrhea by means of a 10-point linear analog scale.

Evaluation of all visible signs of endometriosis at laparoscopy was performed by a surgeon not aware of the patients' symptoms.

Main Outcome Measure(s): The correlation between the severity of dysmenorrhea and the total score for endometriosis and the partial scores for superficial, deep, and adhesion disease as assessed with a current classification system was evaluated. The severity of dysmenorrhea was also correlated with the total number of superficial implants and with the number of typical, pigmented versus atypical, nonpigmented lesions.

Result(s): The linear analog score for dysmenorrhea correlated significantly with the total endometriosis score, the partial score for deep endometriosis, and the partial score for adhesions. There was no correlation between the pain score for dysmenorrhea and the partial score for superficial endometriosis, nor with the total number of endometriosis implants, the number of typical implants, or the number of atypical implants.

Conclusion(s): The current classification system for endometriosis, devised primarily to formulate a prognosis in infertile patients, correlates significantly with endometriosis-associated dysmenorrhea. The present study does not support the suggested association between atypical implants and the severity of dysmenorrhea. (Fertil Steril® 1997;68:19–22. © 1997 by American Society for Reproductive Medicine.)

Key Words: Endometriosis, classification, dysmenorrhea, pelvic pain, laparoscopy

Endometriosis, characterized by the ectopic localization of the endometrium, can be present as superficial implants, deep peritoneal lesions, and ovarian endometriomas, with or without associated pelvic adhesions. In recent years, increasing emphasis has been addressed to the presence of atypical, nonpigmented lesions that can be present with a variety of morphologic appearances lacking the typical black-blue “powder-burn” aspect (1, 2).

It has been demonstrated that red petechial implants of endometriosis produce greater amounts of prostaglandin (PG) F than typical “powder-burn” implants (3). On this basis, there is a plea for further improvement of the revised American Fertility Society (AFS) classification of endometriosis (4) to include a morphologic characterization of the superficial implants, particularly in cases in which endometriosis is associated with pelvic pain (3, 5–7). The correlation between endometriosis-associated pain and the presence of typical versus atypical
endometriosis lesions has not been investigated thoroughly.

MATERIALS AND METHODS

From April 1, 1995, to June 30, 1996, 65 patients undergoing diagnostic or operative laparoscopy performed by the same surgeon (R.M.) for infertility (28 patients), pelvic pain (21 patients), or for the presence of an adnexal mass with the sonographic features of an endometrioma (16 patients) were diagnosed to have endometriosis at surgery. None of the patients included in this study had been treated previously, either medically or surgically, for the disease. All patients were experiencing menstrual cycles. The mean age of the patients was 29.5 years (range, 22 to 42 years).

The surgeon staged the disease according to the revised AFS classification of endometriosis (4), recording both the total revised AFS score and the partial revised AFS scores for superficial implants, deep endometriosis, and adhesions. In addition, the surgeon classified the superficial implants into typical powder-burn or atypical lesions. The total number of implants, the number of typical implants, and the type and number of atypical implants were also recorded. The atypical lesions were divided into categories of red flamelike lesion, red polyp, red vesicle, brown lesion, clear polyp, clear vesicle, white opacification, and peritoneal defect.

Preoperatively, the patients were submitted by the principal author (L.M.) to a questionnaire, including an evaluation of the associated dysmenorrhea with a 10-point linear analog scale (LAS), 0 representing absence of pain and 10 representing the worst possible pain. The surgeon (R.M.) was not aware of the results of the preoperative questionnaire.

In the same period, 15 additional patients submitted by the same surgeon to diagnostic laparoscopy for infertility were found to have normal pelvic findings. These patients had also been submitted preoperatively to the LAS evaluation of dysmenorrhea and constitute, therefore, the control group of patients. The mean age of these patients (30 years; range, 23 to 39 years) was not significantly different from the mean age of the patients with endometriosis.

Data analysis was performed with the Student’s t-test and the rank sum test for the comparison of parametric and nonparametric continuous variables, respectively. The correlation between the number of typical or atypical implants and the LAS score, and the correlation between the revised AFS scores and the LAS score, were performed with the Spearman’s rank correlation test. A P value of <0.05 was considered statistically significant.

RESULTS

The mean revised AFS score in the 65 patients with endometriosis was 28.8 ± 26.4 (mean ± SD). The partial revised AFS scores were 2.8 ± 2.0 for superficial endometriosis, 15.2 ± 13.3 for deep endometriosis, and 11.1 ± 18.3 for adhesions. Fifteen patients were in revised AFS stage I, 8 patients were in stage II, 28 in stage III, and 14 in stage IV.

In 18 patients (28%), only superficial implants, ovarian and/or peritoneal, were present. In 4 patients (6%), superficial endometriosis and ovarian endometriomas were present, with no pelvic adhesions. In 6 patients (9%), superficial endometriosis and adhesions were present, with no ovarian endometriomas. In 30 patients (46%), superficial endometriosis, ovarian endometriomas, and pelvic adhesions were present. In 7 patients (11%), ovarian endometriomas, either with (5 patients) or without (2 patients) pelvic adhesions, were present, in the absence of visible superficial implants. None of the patients included in this series had deep rectovaginal endometriosis. In fact, three patients with deep rectovaginal endometriosis who came to our observation during the study period were excluded from this series because they had been treated with GnRH analogue before surgery.

Superficial endometriotic implants were, therefore, present in a total of 58 (89%) of 65 patients. In 2 patients, only typical implants were present, whereas in 31, only atypical lesions were present. Both typical and atypical lesions were present in 25 patients. The mean number of superficial implants present in the 65 patients was 17.7 ± 17.1 (range, 0 to >100). The mean number of typical implants was 1.8 ± 3.2, whereas the mean number of atypical lesions was 15.9 ± 17.3. The most common atypical implant was the red flamelike lesion, present in 42 patients, followed by the red polypoid lesion (22 patients), the clear vesicle (22 patients), the brown lesion (19 patients), the clear polyp (12 patients), the red vesicle (10 patients), the white opacification (9 patients), and the peritoneal defect, present in only 8 patients.

At statistical analysis, the LAS scale for dysmenorrhea correlated significantly with the revised AFS total score (r = 0.521, P < 0.001), the partial score for deep endometriosis (r = 0.439, P < 0.001) and the partial score for adhesions (r = 0.478, P < 0.001). There was no correlation between the LAS scale for dysmenorrhea and the revised AFS partial score for superficial endometriosis (r = 0.087), nor between the LAS scale and the total number of endometriosis implants (r = 0.102), the number of typical implants (r = 0.172), or the number of atypical implants (r = 0.130).
The mean LAS score for dysmenorrhea in patients with ovarian endometriomas (5.6 ± 2.4) was significantly different from the LAS score in patients without endometriomas (3.5 ± 2.3; *P* < 0.005). The LAS score in patients with endometriosis was not significantly different when adhesions were present (5.8 ± 2.3) or absent (4.5 ± 2.8) or when associated superficial implants were present (5.7 ± 2.3) or absent (5.3 ± 2.8). There was no significant difference in LAS scores in patients with atypical implants only (3.8 ± 2.8) versus patients with both typical and atypical implants (3.1 ± 1.1). Typical implants only were present in two patients, both with LAS scores of 3.

The mean LAS score in the 65 patients with endometriosis (4.8 ± 2.5) was not significantly different from the LAS score in 15 patients with normal pelvic findings submitted to laparoscopy for infertility (3.5 ± 2.8).

**DISCUSSION**

The revised AFS classification of endometriosis (4) has been devised primarily for infertility patients to formulate a prognosis in terms of reproductive outcome. This classification, however, is also arbitrarily used to stage the disease in noninfertility patients, such as the patients complaining of pelvic pain.

In the literature, reports on the correlation between endometriosis-associated pain and the extent of the disease as assessed with the revised AFS classification yielded conflicting results. In a study by Fedele et al. (8), no correlation was found between the revised AFS stage and the presence and severity of dysmenorrhea and pelvic pain in a series of 160 patients with endometriosis diagnosed at surgery for infertility, pelvic pain, or evidence of an adnexal mass. The same authors (9) later reported evidence at variance with the earlier study: in a series of 124 infertile patients, both endometriosis-associated dysmenorrhea and acyclic pelvic pain were reported to be significantly more severe in patients with stage III–IV versus stage I–II disease. Deep dyspareunia was present with similar frequency in stage III–IV versus stage I–II patients. An explanation for the inconsistency of the two reports was suggested by the authors to lie in the recruitment method: the inclusion of only infertile patients, as in the latter study, was believed to ensure a sample that was not biased by symptom pain. This selected population, however, may not represent the general population of patients with endometriosis.

In the latter study by Fedele et al. (9), although a significant correlation between endometriosis stage and severity of dysmenorrhea was present, the frequency of dysmenorrhea was not significantly different for endometriosis patients (stages I to IV) versus nonendometriosis patients. This observation is in some way consistent with our finding of a nonsignificant difference in pain scores for endometriosis versus control patients. In our study, however, a type II statistical error is possible because of the relatively small number of patients, particularly in the control group.

Recently, Vercellini et al. (10) reported that the revised AFS stage per se was not correlated with the frequency and severity of dysmenorrhea and noncyclic pain in 244 patients with pain symptoms. Surprisingly, the severity of deep dyspareunia was inversely correlated with endometriosis stage. The frequency of dysmenorrhea and the frequency and severity of dyspareunia were less in patients with endometriosis located only on the ovaries than in patients with lesions at other sites. This evidence contrasts with the data from Fedele et al. (9), who reported a significant association between ovarian endometriomas and severe pelvic pain and dysmenorrhea.

Perper et al. (11) recently reported that a significant correlation exists between the total number of implants and the associated dysmenorrhea in endometriosis patients. Only a relatively small number of patients with visible signs of endometriosis (39 patients), however, were regularly menstruating at the time of diagnosis, rendering these findings possibly not conclusive. No mention was made of the number of typical versus atypical implants in the study, nor was the description of other endometriotic lesions, ovarian endometriotic cysts in particular, reported.

Vernon et al. (3) reported that petechial implants of endometriosis produce twice the amount of PGF than intermediate, brown lesions, which in turn produce more PGF than typical powder-burn implants. On this basis, there is a continuing discussion for a revision of the revised AFS classification of endometriosis (4) to include a morphologic characterization of the superficial implants, particularly in cases in which endometriosis is associated with pelvic pain (3, 5–7).

In the present study, however, the revised AFS score for endometriosis, devised primarily to formulate a prognosis in infertile patients, correlated significantly with endometriosis-associated dysmenorrhea. The number of typical or atypical implants did not correlate with the severity of dysmenorrhea. This last evidence is consistent with the findings of Vercellini et al. (12), who reported a lack of correlation between typical, mixed, or atypical lesions and endometriosis-associated dysmenorrhea in a series...
of 73 patients with endometriosis diagnosed at laparoscopy for chronic pelvic pain.

In conclusion, this preliminary report does not support the suggested association between atypical implants and the severity of dysmenorrhea and does not bring evidence to support the need of improving the revised AFS classification of endometriosis.

REFERENCES