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Original Article

Pelvic Pain and Patient Satisfaction After Laparoscopic Supracervical Hysterectomy: Prospective Trial

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ABSTRACT **Study Objective:** To evaluate the occurrence and intensity of cyclic pelvic pain and patient satisfaction after laparoscopic supracervical hysterectomy and to explore the effect of the procedure on pelvic pain relief in women with perioperative detection of endometriosis and in women with histologic confirmation of adenomyosis.

Design: Prospective observational study with 12-month follow-up after laparoscopic supracervical hysterectomy (Canadian Task Force classification II-2).

Setting: University teaching hospital in Norway.

Patients: One hundred thirteen premenopausal women with preoperative cyclic pelvic pain treated via laparoscopic supracervical hysterectomy.

Interventions: Study participants underwent laparoscopic supracervical hysterectomy and were followed up at the outpatient clinic at 12 months after the procedure.

Measurements and Main Results: The main outcomes were occurrence, intensity, and reduction of cyclic pelvic pain and patient satisfaction measured using an ordinal and a visual analog scale at 12 months after the procedure. Of the 113 women included in the study, 8 were lost to follow-up. Consequently, 105 women (92.9%) were followed up at 12 months after surgery. All women had cyclic pelvic pain preoperatively, but only 34 (32.4%) experienced this pain at 12 months after the procedure. The intensity of pelvic pain was reduced from a mean (SD) of 5.5 (2.4) preoperatively to 0.7 (1.5) at 12 months after the procedure on a visual analog scale of 0 to 10 ($p < .01$). Endometriosis was diagnosed perioperatively in 14 women (12.4 %), and adenomyosis was confirmed at histologic analysis in 19 (18.1%). In women with perioperative detection of endometriosis or histologic confirmation of adenomyosis, there were no significant differences in main outcomes at 12 months after laparoscopic supracervical hysterectomy when compared with women without these diagnoses.

Conclusion: Laparoscopic supracervical hysterectomy is associated with high patient satisfaction and reduces cyclic pelvic pain to a minimum by 12 months after the procedure. Journal of Minimally Invasive Gynecology (2014) 21, 406–411 © 2014 AAGL. All rights reserved.

Keywords: Adenomyosis; Cervical stump symptoms; Endometriosis; Laparoscopic hysterectomy; Laparoscopic supracervical hysterectomy; Minimally invasive hysterectomy; Patient satisfaction; Pelvic pain

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Abdominal hysterectomy is the predominant hysterectomy technique worldwide, although minimally invasive techniques such as the vaginal or laparoscopic approaches are the recommended routes for hysterectomy [1–11]. The number of supracervical hysterectomies has increased in the past few decades, probably related to the introduction of laparoscopic hysterectomy [10,12–14] The surgical technique of laparoscopic supracervical hysterectomy (LSH) is

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fairly easy to perform [15,16]. In contrast, total laparoscopic hysterectomy involves more advanced skills for laparoscopic dissection and suturing [16–18]. LSH is associated with a low risk of complications, and women are highly satisfied after treatment with this procedure [15–17,19–21]. Episodes of minor vaginal bleeding occur frequently after LSH but do not affect patient satisfaction [20,22,23]. Previous studies have shown that women can anticipate reduction of pelvic pain after LSH; however, there is risk of persistent pain after the procedure, in particular in women with endometriosis [15,20,24–26]. Therefore, leaving the cervix in women with pelvic pain or endometriosis is debatable [2,27]. Several authors have stated that endometriosis, pelvic pain, and dysmenorrhea should be considered contraindications to supracervical hysterectomy [18,24,26,28–30]. Other gynecologists have concluded that this should not be a hindrance to performing LSH unless leaving the cervix compromises removal of endometriosis [15,25].

In the past decade at our gynecologic department, LSH has been the preferred method for hysterectomy in women with benign conditions requiring hysterectomy and with no history of cervical dysplasia [13,20,22,31–33]. However, in recent years we have experienced a trend toward total laparoscopic hysterectomy in women with endometriosis, cyclic pelvic pain, and dysmenorrhea. This change has occurred despite, to our knowledge and according to recently published reviews, there is no evidence from randomized trials that has demonstrated superior results for total hysterectomy compared with supracervical hysterectomy in these women [1,27]. The objective of the present prospective study was to evaluate the occurrence, intensity, reduction of pelvic pain, and patient satisfaction at 12 months after LSH. In particular, we wanted to explore the outcome of LSH insofar as pelvic pain relief and patient satisfaction in women in whom endometriosis was diagnosed perioperatively and in those with histologic confirmation of adenomyosis. Adenomyosis is associated with cyclic pelvic pain and has some similarities with endometriosis insofar as pathophysiology and clinical manifestation [34–36].

Material and Methods

This prospective observational single-center trial was performed in a university gynecologic department in Norway. The study was conducted in accordance with the Declaration of Helsinki and national and local regulations. The Regional Committee for Medical Research Ethics in eastern and southern Norway, the Scientific Advisory Board, and the Personal Data Officer at Oslo University Hospital approved the study. Written informed consent was obtained from all patients. Study participants were recruited from a randomized controlled trial, registered as ClinicalTrials.gov identifier NCT00921778 [22].

Women included in this observational study were premenopausal and preoperatively had experienced cyclic pelvic pain (premenstrual pain and dysmenorrhea) treated with LSH for all types of benign indications and with at least 1 ovary remaining after the procedure. The study was conducted with the principle that cul-de-sac endometriosis was not a contraindication to LSH unless leaving the cervix compromised removal or destruction of endometriosis. Endometriosis diagnosed perioperatively was treated during the procedure via electrocoagulation or excision. Women with deep infiltrating endometriosis or preoperative symptoms dominated by noncyclic chronic pelvic pain were not included in this trial. After LSH, cyclic pelvic pain was defined as cyclic pelvic pain with or without concomitant vaginal bleeding. Other types of pain including ovulatory and intestinal pain were registered but were not included in the definition of cyclic pelvic pain in this trial.

The LSH technique at our hospital has been described earlier [22,32,33]. Study participants answered a standardized questionnaire preoperatively and at the follow-up consultation at 12 months after surgery. The occurrence and intensity of cyclic pelvic pain was registered preoperatively and at 12 months after LSH using a visual analog scale (VAS) of 0 to 10 and a 4-grade ordinal scale (no pain, weak pain, moderate pain, or severe pain). Other preoperative variables recorded were age, body mass index, number of previous births, reason for hysterectomy, any previous surgery, amount and type of bleeding, medication, and other medical conditions. Perioperative variables recorded were duration of surgery, detection of endometriosis, and weight and histologic diagnosis of the uterine specimen. Further postoperative variables registered at 12 months after LSH were length of the remaining cervix measured via transvaginal ultrasound and patient satisfaction using the VAS. Histologic examination was performed using the standard procedure at our hospital except that an additional pathologist ensured the diagnosis of adenomyosis in a second histologic examination of the specimen. Invasion of the endometrial glands to a depth of 2.0 mm below the basalis layer was used as the diagnostic cutoff for adenomyosis.

All statistical tests were 2-sided, and $p = .05$ was considered statistically significant. Statistical analyses were performed using commercially available software (SPSS version 15.0; SPSS, Inc., Chicago, IL). Normally distributed continuous data were analyzed using a 2-sided independent samples Student *t*-test, and categorical data using the Pearson χ^2 test.

Results

All 113 study participants underwent LSH between September 2008 and September 2010 and were followed up at 12 months after the procedure (Fig. 1). Preoperative demographic data are given in Table 1. Eight women were lost to follow-up; 1 moved abroad, 1 was followed up at a different hospital, and 6 were noncompliant with the follow-up consultation despite repeated reminders via letter and telephone. Thus, the follow-up rate was 92.9 % at