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Patient Satisfaction, Vaginal Bleeding, Sexual Function following Laparoscopic Supracervical Hysterectomy

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Purpose: This study was done to evaluate postoperative patient satisfaction, vaginal bleeding, and sexual function in women after laparoscopic supracervical hysterectomy (LSH). **Methods:** A retrospective study was conducted using a questionnaire mailed to 131 women who underwent LSH between 2008 and 2011at the Department of Obstetrics &Gynecology, D University Hospital in Chungnam province. Indication for LSH was uterine myoma. The questionnaire contained questions on overall postoperative satisfaction, influence on quality of life of vaginal bleeding, and sexual satisfaction following surgery. Data were collected from March to July 2013 and 109 (83.2%) patients returned the questionnaire. **Results:** Most women reported being very satisfied (90.8%) or satisfied (7.3%), but 2 women (1.8%) were not satisfied with LSH. Four patients (3.4%) reported experiencing vaginal bleeding but with no negative influence on quality of life. Of sexually active women, 82 patients (90.1%) reported improvements in sexual function, 8 patients (8.8%) reported "no change", and one patient (1.1%) reported a deterioration **Conclusion:** Results of this study indicate that LSH is associated with a high degree of patient satisfaction, no negative influence on quality of life from vaginal bleeding, and improvement in sexual function to a minimum 2 years after the procedure.

Key Words: Laparoscopic supracervical hysterectomy, Patient satisfaction, Vaginal bleeding, Sexual function

INTRODUCTION

In the 1940s, supracervical hysterectomy, which was then performed by laparotomy, was largely replaced by total hysterectomy. In 1989, Reich[1] performed the first laparoscopic-assisted vaginal hysterectomy (LAVH).The benefits of laparoscopic hysterectomy compared with an abdominal approach are documented; less postoperative pain, better cosmetic results, fewer wound infections, and earlier discharge from hospital[2].

Laparoscopic supracervical hysterectomy (LSH) is a minimally invasive procedure that was developed during the 1990s as a treatment for uterine bleeding. LSH represents a reliable option for a number of benign gynecological conditions with less morbidity, reconvalescence, shorter hospital stay, and subsequent reduced economic burden. The literature suggests that LSH results in reduced operating time andblood loss and a quicker return to normal activity, compared with LAVH[3]. The safety, effectiveness, and reproducibility of this procedure have been documented[4,5]. Sparing of the cervix has several advantages, this might result in sexual satisfaction, as well as urinary and bowel functions are believed to be better preserved[6]. However, a recent review reported that the urinary, bowel, and sexual functions have shown to have no evidence of a benefit in women undergoing subtotal hysterectomy[7].

Minimally invasive surgery involves the utilization of small incisions to perform surgical procedures. In most cases, the use of this minimal approach helps to minimize patient discomfort and ensures a faster recovery. The application of minimally invasive procedures has led to the development of various techniques in which laparoscopy is used as an aid to hysterectomy. These variations have a potential impact on intraoperative and postoperative complication rates and patient satisfaction.

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Despite the proven efficacy and safety of LSH, several issues, including the postoperative incidence of cyclical bleeding and the possibility of cervical stump carcinoma development, continue to generate much about this procedure [8].The risk of cervical stump symptoms, such as vaginal bleeding and pelvic pain following the supracervical hysterectomy, causes patient distress and eventually surgery[9].The other reported that although vaginal bleeding and pelvic pain are frequently observed following LSH, the patient satisfaction following procedure was high[5].

Postoperative satisfaction, operation-related quality of life and sexual function are important issues. The aim of this study was to investigate the impact of LSH on patient satisfaction, evaluated with questionnaire assessment of overall postoperative satisfaction, influence on quality of life with the vaginal bleeding, and sexual satisfaction.

METHODS

1. Study Design

This study was a retrospective research design to evaluate patient satisfaction, vaginal bleeding, sexual function of women who underwent LSH.

2. Subjects

All women who underwent LSH during2008 and 2011 at the Department of Obstetrics & Gynecology, D University Hospital in Chungnam province, were recruited by mailed questionnaire. Indication for LSH was uterine myoma. Benignity was clarified by colposcopy and cytology. In the case of abnormal bleeding and suspect ultrasonographic findings, dilation and curettage was performed. Preoperative counseling emphasized the need for continued cervical screening and a possibility of cyclical bleeding in the future.

3. Surgical techniques: Laparoscopic Supracervical Hysterectomy

The LSH operation technique standardized and remained consistent throughout the observation period. For the elimination of the surgeon's individual difference, all the surgical procedures were performed by a single team with the same senior operator. Patients are placed in the dorsal lithotomy position with the bladder drained before operation, and the uterine manipulator is introduced. Pneumoperitoneum is established via the Veress needle through the umbilicus, and an11-mm port is inserted into umbilicus followed by 12-mm port on suprapubic and 5-mm port left lower quadrant ports, lateral to the inferior epigastric arteries, respectively. The round ligaments and the uterine adnexasare transected with endoscopic linear stapler & cartridges (Endo-GIA, Ethicon, Somerville, NJ, USA). After creation of a bladder flap, the parametria are dissected and the uterine arteries secured with a bipolar device. The uterus is separated from the cervix with a monopolarhook. Following meticulous hemostasis in the region of the cervical stump, the endocervical canal iscoagulated. The cervical stump is covered with peritoneum using a purse-string suture. Uterine morcellation is carried out with an electric morcellator through the 12-mm suprapubic port.

4. Measurement

The questionnaire was contained three questions. The first question about overall satisfaction, the second question about influence on the quality of life with vaginal bleeding, and the third question about sexual satisfaction following the surgery was included. The patients were sent a consent form for examination of the medical record and a short questionnaire. Three questions of the questionnaire were as follows.

- Question 1. What is your overall satisfaction of the operation? Answer: (1) very satisfied (2) satisfied (3) not satisfied
- Question 2. Do you experience menstrual bleeding after operation? Answer: (1) no (2) yes If answer is 'yes', please write at the bottom of list Menstrual patterns: (1) regular (2) irregular Menstrual amount: (1) decreased (2) same (3) increased
- Question 3. What is your sexual satisfaction after operation? Answer: (1) improved (2) not changed (3) deteriorated

5. Data collection

The data of this study were collected by mailed questionnaire from March to July 2013.The list of uterine-myoma patients who underwent LSH at D University Hospital in Chungnam province was obtained from medical record library. The addresses of the patient were collected from medical record. Finally, a letter with the objective of the study, a consent form, and the survey questionnaire to complete were sent. A total of 131 patients who underwent LSH were sent questionnaire,

109 patients returned the questionnaire, providing a response rate of 83.2%.

6. Ethical considerations

The purpose and procedure of this study, voluntary participation, guaranteed anonymity, and option to withdraw from the trial at any time were informed to the subjects and written consent was obtained. No remuneration was offered in compensation for the participation of the survey.

7. Data analysis

The collected data were analyzed using SPSS version 13.0 (SPSS Inc./IBM, Armonk, NY). Frequency analysis was done to report frequency and percent for each study question.

RESULTS

1. Subjects' characteristics

Mean age of subjects was 41.28 years old years old, ranged from 33 to 47 years at the time of operative procedure. The mean of the body mass index (kg/m^2) was 23.41±1.35, parity was 2.01±0.57, and 61 patients (56%) had a prior gynecologic surgery (Table 1).

Table 1. Patient Characteristics (*N*=109)

Characteristics	n (%) or M±SD
Age (year)	41.28±1.43
Body Mass Index (kg/m^2)	23.41±1.35
Parity	2.01±0.57
Prior gynecologic surgery	
Yes	61 (56)
No	48 (44)

2. Overall satisfaction, Vaginal bleeding, and Sexual satisfaction following LSH

Patients were asked about the overall satisfaction following LSH. As shown in Table 2, almost all women reported being very satisfied (90.8%) or satisfied (7.3%), but 2 women (1.8%) were not satisfied.

Second question was about the occurrence of postoperative vaginal bleeding. Women who experienced vaginal bleeding asked the periodicity and amount of bleeding. Another question evaluated whether postoperative vaginal bleeding had a negative influence on quality of life. After the hysterectomy, only four (3.7%) women reported continued menstrual bleeding, all of these women experiencing regular patterns. The women experiencing persistent bleeding reported that the amount of bleeding to be minimal or less than their normal preoperative periodic bleeding, and menstrual bleeding did not cause negative influence on their quality of life (Table 3).

Another questionnaire contained question about the sexual satisfaction. Question on sexual function was classified by changes (improved, no change, and deteriorated). Out of all 109 patients, 91 patients (83.4%) were sexually active following LSH. Of the sexually active patients, 82 patients (90.1%) reported an improvement of sexual function. Eight patients (8.8%) reported "no change", and one patient (1.1%) reported sexual function deterioration (Table 4).

Table 2. Overall Patient Satisfaction following Laparoscopic Supracervical Hysterectomy (*N*=109)

Patient satisfaction	n (%)
Very satisfied	99 (90.8)
Satisfied	8 (7.3)
Not satisfied	2 (1.8)

Table 3. Postoperative Vaginal Bleeding following Laparoscopic Supracervical Hysterectomy (*N*=109)

Variables	Categories	n (%)
Vaginal bleeding	No	105 (96.3)
	Yes	4 (3.7)
Menstrual patterns	Regular	4 (100.0)
	Irregular	0 (0.0)
Menstrual amount	Decreased	4 (100.0)
	Same or increased	0 (0.0)
Does menstrual bleeding cause negative influence on your quality of life?	No	4 (100.0)
	Yes	0 (0.0)

Table 4. Postoperative Sexual Function following Laparoscopic Supracervical Hysterectomy (*N*=91)

Sexual function	n (%)
Improved	82 (90.1)
Not changed	8 (8.8)
Deteriorated	1 (1.1)

DISCUSSION

Several important long-standing questions are still being raised even today regarding the better surgical technique to remove the uterus (total or supracervical hysterectomy technique). Most authors prefer the subtotal hysterectomy because the total technique disrupts the local nerve supply and anatomical relations of the pelvic organs, and it has been thought that the function of these organs may be adversely affected. On the contrary, the other authors prefer the total technique to prevent the development of cervical cancer. In the Cochrane Review from 2006, randomized controlled trials were evaluated for outcomes in supracervical versus total hysterectomy. There was no difference in rates of urinary incontinence, constipation, or measures of sexual function. Febrile morbidity was less likely in the supracervical group, however, ongoing cyclical bleeding 1 year after surgery was more likely in the supracervical group[7].

Advocates of LSH promote the following benefits of the procedure: minimally invasive nature, improved sexual function, fewer complications, fewer urinary symptoms, and conservation of the cervix with its ligamentous attachments[3,4].Opponents of supracervical hysterectomy, however, either it is performed open or by a laparoscopic approach, often seem to be concerned with the risk of cervical stump symptoms such as vaginal bleeding and pelvic pain following the hysterectomy, causing sufficient distress in the patient to require a further operation and removal of the stump[5,10].

An important consideration is that, in general., hysterectomies are performed to improve quality of life than to cure life-threatening conditions. The most common indications are heavy or irregular vaginal bleeding, uterine myoma and pelvic pain. The satisfaction with specific outcomes may be viewed differently by physicians and patients. Physicians often focus on treatment success or surgical complication rates, whereas convenience, pain, and emotional concerns may be key issues for patients[11]. The other study reported that patient satisfaction was independent of quality of life scores or surgical outcome, or that patients were satisfied the care they received regardless of the physical outcome[12].

Patient satisfaction is emerging as an increasingly important measure of quality of life. Obviously, patient satisfaction is a very complex entity that is dependent on patient demographics, comorbidities, disease, and, to a large extent, patient expectations[13].

Most believe that patient satisfaction is inherently tied to a patient's expectations. It follows that patients would be more satisfied if they were able to help manage and shape their expectations in a more realistic manner. Thus, communication techniques, disease-specific patient information, up-to-date prognostic information, accurate reporting of complications associated with procedures and addressing patient requests are a few of the areas in which improve to manage patient's expectations and strengthen the health care delivery team-patient relationship, thus leading to increased patient satisfaction[14].

The previous retrospective studies of patient satisfaction in women after LSH show that most patients are highly satisfied with their postoperative outcome[10,15]. Recent studies demonstrated high postoperative patient satisfaction after LSH. The rate of highly satisfied women might be increased by carefully choosing the right indication for LSH and improving operation techniques [5,16]. Postoperative satisfaction was constantly high after the different indications for LSH and did not depend on the duration of the observation period and the date of LSH, respectively[16].

Women who were not satisfied regarding information, reported a significantly lower degree of total patient satisfaction, which illustrates the importance of proper and adequate preoperative information[5]. The approach to evaluating outcomes of treatment with patient-based measures provides useful feedback to improve both patient satisfaction and caregiver coordination and teamwork. Patient satisfaction is an outcome measure that is gaining importance as a measure of quality health care. It is complex entity dependent on several variables that health provider plays a central role in managing. In this regard, there are mutable/modifiable processes that providers can perform to improve patient satisfaction[14]. As with previous all case-control studies, this study indicates that women are overall highly satisfied regarding the outcome following LSH.

Persistent vaginal bleeding is a recognized disadvantage of supracervical hysterectomy. There does not appear to be a consensus regarding the incidence of post LSH cyclical bleeding. The occurrence of persistent vaginal bleedings following LSH was reported in the wide range of 0% to 25%[5,17]. This discrepancy might be explained by different definition of vaginal bleeding, case numbers, operation techniques, or observation periods in the different studies[17,18]. Rates for bleeding are quoted at 5% to 20% from laparotomy data in the randomized controlled trials and 19% from a prospective observational laparoscopic trial.

Some authors have claimed that higher reported incidence of post LSH bleeding can only be accounted for by inappropriate technique, where the uterine amputation is begun above the level of internal os, leaving the endometrium in situ[4]. Although it is generally recommended that a method of endocervical coagulation be used to prevent future bleeding in LSH, this modality has not been proven to prevent future bleeding episodes[3]. After amputation of the uterus, special attention should be paid to careful coring of the endocervical canal and meticulous destruction of any remaining endometrium in the spared cervix[19].

The dilemma of residual endometrium could also have an important clinical implication.

Because of the possibility of residual endometrial tissue, it is my opinion to provide a progestin challenge test for patients who require on-going estrogen therapy for symptomatic relief after LSH. Patient who reports any degree of bleeding after progestin with drawalis treated with combined hormone therapy. The subject of hormone therapy after LSH should be carefully addressed and warranted further investigation.

Patient satisfaction correlated with postoperative vaginal bleeding occurrences. With regard to the different indications for LSH, postoperative bleeding was found to have a mostly negative influence on quality of life in women who had LSH for uterine adenomyosis or for preoperative bleeding disorders. In particular, women with bleeding disorders or dysmenorrhea should be carefully counseled that postoperative cyclic bleeding might persist[19].

All women who scheduled to undergo LSH should be informed preoperatively regarding the risk of persistent menstrual bleeding. Furthermore, the surgical technique may be modified to reduce the occurrence of menstrual bleeding after the LSH. In this study, the incidence of postoperative bleeding is relatively lower (3.4%) than other studies[10,15] and all of the women reported that menstrual bleeding causes no negative influence on their quality of life.

The effect of hysterectomy on sexual function is an issue of debate. The evidence is lacking for sexual dysfunction caused by the disruption of local nerve and blood supply, or by changing anatomical relationships. Removal of the ovaries at hysterectomy is associated with no change or even an improvement in sexual function, particularly in women on hormone therapy. Thus, overall, hysterectomy improves sexual function, regardless of surgical method or removal of the cervix. This is probably due to the amelioration of the symptoms that have previously had a negative effect on sexual function [20]. Several studies have suggested that sexual functioning following hysterectomy is a major concern of patients, yet doctors, nurses, and other health care professionals are reluctant to discuss sexual issues[21].

There has not been a comprehensive review of the literature addressing sexual outcomes, pain outcomes, and psychological outcomes since 1990. It is unclear how sexual function is valued or prioritized in relation to pain, menstrual dysfunction, and other aspects of health among women who are candidates for treatment with hysterectomy. Thus, the extent to which sexual outcomes affect women's overall satisfaction with of recent prospective studies suggest that most women can expect unchanged or improved sexual function after hysterectomy[22-24].

However, other reports show that patients report various negative sexual functions outcomes, with detrimental effects on sexual function following hysterectomy being the main concern[25,26]. The other study show that 20% to 30% of women who undergo a hysterectomy report deterioration in some aspect of their sexuality[26]. Based on the review of the literature, concluded that, while most women seem to experience significant improvement in sexual functioning post-hysterectomy, a subgroup of 10% to 22% of women experience a post-surgical decline in sexual functioning[22].

Negative body image and relationship dissatisfaction are associated with sexual problems and dissatisfaction. Women who are depressed or anxious, women with poor body image, and women in unsatisfactory intimate relationships may be at particular risk for developing sexual dysfunction that worsens over time[27].

Some degree of risk for changes in sexual function after surgery may be outweighed by the promise of symptom relief. Regardless, it is reasonable to hypothesize that being informed of possible sexual side-effects before surgery may enhance satisfaction with hysterectomy by preparing women for the possibility of unwanted outcomes[28].

This is not surprising given that many women who undergo an elective hysterectomy do so to treat conditions such as uterine myoma, menstrual disorder, endometriosis, or pelvic inflammatory diseases. These conditions may negatively impact a woman's sexual function and satisfaction, and for many women, post-surgical resolution of unpleasant symptoms likely contributes to less pelvic pain, less dyspareunia, increased sexual desire and arousal, and greater sexual satisfaction[29]. Sexual experience was improved in most patients who

experienced preoperative sexual problems; however, the patients felt that this was mainly due to less pain and bleeding. Those patients who described no preoperative sexual dysfunction were relatively unchanged after the procedure. In regard to sexual satisfaction of this study, almost all women (98.9.%) reported improved or unchanged on sexual function. This result is in line with previous articles.

The main limitation of the study is that the data were collected retrospectively, and that we did not ask more informative global satisfaction questions. One limitation of the study is we were unable to compare the results of LSH to those of other hysterectomy procedure as would be possible with a controlled trial. Another limitation is that we did not ask participants question about physician-patient relationship. We do not know to what extent women in this study were satisfied with the care that they received from their physician, nor do we know to what extent had been informed about and understood the risks of post-discharge complications. It seems reasonable to assume that a patient's satisfaction with her physician would be related to her satisfaction with the results of the hysterectomy, but we have no information on that.

The prospective studies with prolonged follow-up are needed to evaluate the risks and benefits of LSH. And future research should include randomized controlled trials that compare LSH with regard to different operation techniques or modifications. Furthermore, the technique of LSH must be standardized to allow direct comparison. And future prospective studies are needed to address this important issue by investigating the responsiveness of the satisfaction questionnaire to modify the structure and process of the health care system and also to establish and maintain a healthy care provider-patient relationship.

CONCLUSION

This study demonstrates high postoperative patient satisfaction in women after LSH. The rate of highly satisfied women might be increased by integrated caregiver coordination and improving operation techniques. All women should be carefully counseled that postoperative vaginal bleeding and/or pelvic pain, and cervical stump symptoms are potential complications of the procedure. Furthermore, the potential for cervical cancer still exists, annual cervical cytological screening is mandatory.

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Summary Statement

■ What is already known about this topic?

Despite the proven efficacy and safety of LSH, several issues, including the postoperative incidence of cyclical bleeding and cervical stump symptoms, continue to generate concern about this procedure. Then, patient satisfaction and sexual function following LSH were issues of debate.

■ What this paper adds?

This study demonstrates high postoperative patient satisfaction, low incidence of menstrual bleeding, and improved sexual function in women after procedure.

■ Implications for practice, education and/or policy

Patient satisfaction is independent of quality of life scores or surgical outcome. Thus the rate of highly satisfied women might be increased by integrated caregiver coordination and improved operation techniques.