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Impact on Sexual Life in Women Treated with LASH versus LAVH

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Abstract

Sexual life after hysterectomy remains a great concern for patients and their partners. The aim of the present study was to compare the sexual function of 102 patients who received a subtotal hysterectomy (laparoscopic assisted supracervical hysterectomy, LASH) with 49 who underwent Laparoscopic Assisted Total Vaginal Hysterectomy (LAVH). Six weeks postoperatively, libido ($p = 0.001$), coital frequency ($p = 0.001$) and masturbation frequency ($p = 0.003$) were significantly better in the LASH group. Painful intercourse was higher in the LAVH group ($p = 0.007$). At six months, masturbation frequency ($p = 0.013$) and overall quality of life ($p = 0.031$) were better in the LASH group. No differences between groups were found at 12 months, with the exception of painful intercourse, which had higher rates ($p = 0.018$) in the LAVH group. Despite the improved short-term postoperative sexual outcomes with LASH as compared to LAVH, twelve months after surgery, these differences had almost vanished, with the exception of painful intercourse which persisted one year after total uterus and cervix excision. Further evaluation of cervix preservation on the quality of patient's sexual life should also consider the role of other psycho-social factors.

Keywords: Hysterectomy; Laparoscopic; Sexual function

Introduction

Hysterectomy, dating back to old times [1], is one of the most common surgical interventions among gynecologic operations for benign conditions, such as abnormal uterine bleeding, pelvic organ prolapse, myoma or adenomyosis [2-4]. In efforts to improve patients' quality of life, many innovative laparoscopic methods have been developed. These methods have been associated with faster recovery, better cosmetic results, less blood loss and reduced postoperative pain. Nevertheless, sexual function after hysterectomy remains a great concern for both patients and their partners [5-7] and, concerning quality of life and sexual function, many controversies persist as to whether or not preserving the cervix may have some advantages [8].

Neither the ACOG (the American College of Obstetricians and Gynaecologists [9] nor the DGGG (the German Society of Gynecology and Obstetrics) [10] recommend supracervical hysterectomy as the superior surgical approach, and the only absolute indication for removal of the cervix is cervical carcinoma. Although several studies have observed no significant differences in the postoperative sexual function following Laparoscopic Assisted

Supracervical Hysterectomy (LASH) versus laparoscopic assisted total vaginal hysterectomy (LAVH) [11-14], other authors have reported some advantages of supracervical hysterectomy [8,15-17] and the results remain conflicting [11]. Therefore, we performed the present retrospective analysis of women who underwent hysterectomy for benign uterine pathologies to compare the sexual function outcomes in those who received LASH versus LAVH.

Materials and Methods

This retrospective analysis was conducted with data from 151 patients who underwent hysterectomy for the benign uterine pathology of uterus myomatosus at the Clinic of Minimally Invasive Surgery (MIC) in Berlin, between January 2007 and December 2009. The study received approval from the Ethics Committee of the Clinic of Minimally Invasive Surgery of Berlin, according to all the procedures undertaken respecting ethical requirements stated in the declaration of Helsinki [18]. Written informed consent was obtained from all patients in order to publish their respective data.

Women who were over 18 years of age and received a laparoscopic assisted subtotal or laparoscopic assisted total vaginal hysterectomy for uterus myomatosus were included in the study. None of the patients included in this study showed other pathologies. Patients were divided in two groups according to their date of birth, namely patients with an even year of birth were included in the LAVH group (n=49), patients with an odd year of birth in the LASH group (n=102), thus the latter group's surgical approach aimed to preserve the cervix during hysterectomy. Patients with cervical carcinoma or other comorbities were excluded from the study. Both LASH and LAVH surgery are well established in our institute and were performed according to the customary manner [19-21]. The colporrhaphy was performed with simple sutures using Polysorb. The same follow-up of patients in both groups (women treated with LASH vs. women treated with LAVH) was applied.

Data regarding sexual function were obtained from the derived female sexual Function Index Questionnaire (FSF) [8,22], which is routinely offered to patients during their follow-up visits. The questionnaire assesses six parameters of sexual function: desire, arousal, lubrication, orgasms, satisfaction and pain. Variables analyzed in the present study were: libido, coital frequency, coital orgasm frequency, masturbation frequency, orgasm during masturbation, multiple coital orgasms, multiple orgasms by masturbation, painful intercourse, lubrication, sexual relationship, as well as quality of life (Appendix A).

All statistical analyses were carried out with SPSS software version 25.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics methods were used. For quantitative or numerical variables, dispersion measures (standard deviation, or ranges) were used. Arithmetic mean (%) was used for qualitative variables. The significant differences between groups were tested through Wilcoxon test [23]. A p-value less than 0.05 was considered statistically significant.

Results

The difference in mean age between the groups (45.5 years old in the LASH group and 45.9 years in the LAVH group) was not statistically significant (p = 0.240). The most common symptoms described by the patients prior to surgery are shown in Table 1. Uterine myoma and abnormal bleeding were the most frequent indications for surgery.

Symptom /Indication of surgery*	**Total hysterectomy group (LAVH)** (n=49) n (%)	**Subtotal hysterectomy group (LASH)** (n=102) n **(%)**
Dysmenorrhea	25 (51.02%)	43 (42.15%)
Metrorrhagia	14 (28.5%)	28 (27.45%)
Heavy bleeding	32 (65.3%)	65 (63.72%)
Uterine fibroids	41 (83.67%)	75 (73.5%)
Endometriosis related symptoms	5 (10.2%)	8 (7.8%)
*One or more symptoms; LASH: laparoscopic assisted subtotal hysterectomy; LAVH: laparoscopic assisted total vaginal hysterectomy		

Table 1: Clinical symptomatology of patients undergoing hysterectomy.

Up to 95% (144/151) of women responded the sexual function questionnaire six weeks after the operation, 82% (124/151) afer six months and 52% (79/151) after twelve months. Sexual function at six weeks postoperatively was found to be statistically better in the LASH group. Libido (p = 0.001), coital frequency (p = 0.001), masturbation frequency (p = 0.003), and pain during intercourse (p = 0.007) were found to differ between the groups. There were no significant differences between groups (p > 0.05) regarding the other sexual parameters (Table 2).

Female sexual function index variables*	Total hysterectomy group (LAVH) (n=49) n	score	Subtotal hysterectomy group (LASH) (n=102) n	score	Total number of respondents n	p value[a]
A. Libido	45	87.08	98	65.08	143	0.001*
B. Coital frequency	45	86.5	99	66.14	144	0.001*
C. Coital orgasm frequency	45	78.58	98	68.98	143	0.135
D. Masturbation frequency	42	79.17	98	66. 79	140	0.003*
E. Orgasm during masturbation	44	73.23	94	67.76	138	0.414
F. Multiple coital orgasm	45	71.06	97	71.71	142	0.92
G. Multiple orgasm by masturbation	43	73.7	93	66.1	136	0.23
H. Painful intercourse	45	60.71	98	77.18	143	0.007*
I. Lubrication	45	77.23	98	69.6	143	0.088
J. Sexual relationship	44	68.02	94	70.19	138	0.619
K. Life quality	45	72.66	98	71.7	143	0.897

Based on Rosen, et al [19]. a: Wilcoxon test. A p-value less than 0.05 was considered statistically significant; LASH: laparoscopic assisted subtotal hysterectomy; LAVH: laparoscopic assisted total vaginal hysterectomy

Table 2: Female sexual function 6 weeks after hysterectomy.

Six months postoperatively, masturbation frequency (p = 0.013) and quality of life (p = 0.031) were also better in the LASH group. Statistical analysis of the other sexual parameters showed no significant differences between groups (p > 0.05) (Table 3).

Female sexual function index variables*	**Total hysterectomy group (LAVH)** (n=49) **n**	**score**	**Subtotal hysterectomy group (LASH)** (n=102) **score**	**score**	**Total number of respondents** **n**	**p value[a]**
A. Libido	39	69.74	85	59.18	124	0.079
B. Coital frequency	39	65.47	82	58.87	121	0.257
C. Coital orgasm frequency	39	62.96	81	59.31	120	0.526
D. Masturbation frequency	37	68.35	84	57.76	121	0.013*
E. Orgasm during masturbation	37	64.89	79	55.51	116	0.127
F. Multiple coital orgasm	39	58.44	80	60.76	119	0.701
G. Multiple orgasm by masturbation	37	63.93	79	55.96	116	0.175
H. Painful intercourse	39	64.91	82	59.14	121	0.16
I. Lubrication	39	62.85	81	59.37	120	0.396
J. Sexual relationship	39	54.12	77	60.72	116	0.111
K. Life quality	39	52	84	66.64	123	0.031*

Based on Rosen et al [19]. a: Wilcoxon test. A p-value less than 0.05 was considered; statistically significant. LASH: laparoscopic assisted subtotal hysterectomy; LAVH: laparoscopic assisted total vaginal hysterectomy

Table 3: Female sexual function 6 months after hysterectomy.

At twelve months, there were no statistically significant differences between groups ($p > 0.05$), except for painful intercourse which was reported more often in the LAVH group ($p = 0.018$) (Table 4).

Female sexual function index variables*	Total hysterectomy group (LAVH) (n=49) n	score	Subtotal hysterectomy group (LASH) (n=102) n	score	Total number of respondents n	p value[a]
A. Libido	43	41.38	36	38.35	79	0.495
B. Coital frequency	43	42.21	36	37.36	79	0.278
C. Coital orgasm frequency	43	41.8	36	37.85	79	0.372
D. Masturbation frequency	43	42.07	35	36.34	78	0.085
E. Orgasm during masturbation	43	37.6	32	38.53	75	0.844
F. Multiple coital orgasm	43	39.05	36	41.14	79	0.66
G. Multiple orgasm by masturbation	43	38.03	32	37.95	75	0.986
H. Painful intercourse	43	43.6	36	35.69	79	0.018*
I. Lubrication	43	40.33	36	39.61	79	0.792
J. Sexual relationship	43	36.65	34	41.97	77	0.131
K. Life quality	43	36.7	35	42.94	78	0.22
Based on Rosen et al [19]; a: Wilcoxon test. A p-value less than 0.05 was considered statistically significant. LASH: Laparoscopic Assisted Subtotal Hysterectomy; LAVH: Laparoscopic Assisted Total Vaginal Hysterectomy						

Table 4: Female sexual function 12 months after hysterectomy.

Discussion

Whether preserving the cervix during hysterectomy has subsequent benefits for women, still remains controversial [9,24]. As maintaining normal sexual function is very important for patients and their partners, this study sought to analyze what effects cervix excision has on female sexual function. Recently, a retrospective French study reported improvement of sexual function, particularly in terms of orgasm, in women who received subtotal hysterectomy in comparison to those who underwent total hysterectomy. However, their findings were limited due to the small number of cases analyzed [25]. Similarly, other authors have stated that sexual function is less affected if the cervix is preserved [8,26], but their results are modest and somewhat conflict with further series. Several studies have reported no significant differences in the sexual function of women following hysterectomy, irrespective of the approach [12,27,28]. A Cochrane review conducted in 2012 on nine randomized control trials, which included a large number of patients (1,553) undergoing laparoscopic assisted total or subtotal hysterectomy, found no differences in sexual function outcomes between LASH and LAVH [27].

The length of the vagina after total hysterectomy has been suggested as a possible reason for decreased sexual function [29], as was reported in early studies dating back to 1953 [30]. However, there are only a few studies available which investigated the role of vaginal length in postoperative sexuality [29], and the authors have underlined the importance of a woman´s sexual satisfaction before surgical intervention in predicting postoperative sexual function [29,31]. Given that further studies, which have shown improved sexual function after hysterectomy irrespective of the cervix preservation [6,32,33], have been unable to demonstrate a direct relation between mode of hysterectomy and sexuality, women´s sexuality postoperatively should be seen as a multifactorial process, which depends on various psychological factors that should be taken into account as well [34]. Similar results were reported in a recent prospective German study [35], where the authors underlined the patient's preoperative expectations as an important factor that could account for the differences observed during long-term follow-up. In our study, the significant short-term advantages (up to six weeks) after LASH as compared to after LAVH, included increased libido, coital frequency, masturbation and reduced dyspareunia. Whether these advantages are to be attributed to less traumatization and scarring in the regions of pelvic floor and vagina because of cervix preservation or directly to the presence of the cervix, is up for debate and could be clarified by long-term follow-up.

Furthermore, with the exception of painful intercourse which persisted one year after total uterus and cervix excision, twelve months after surgery these differences did not persist. The present study was limited by its retrospective nature, sample size, and by a lack of other socio-cultural aspects not usually considered in sexual function questionnaires. Nevertheless, and considering the high proportion of women who undergo LASH, these results add to the international knowledge on the clinical outcomes of this surgical approach.

Conclusions

According to our results, subtotal hysterectomy was associated with short-term advantages in terms of postoperative sexual function, but the benefits are comparable to total hysterectomy one year after surgery. Considering the cumulative evidence, an absolute recommendation for cervix preservation in order to improve sexual function could not be implemented as a standard. Further analysis should consider the numerous psychological factors that may affect women both prior to as well as after receiving a hysterectomy, such as a lack of sexual interest, depression, and impaired body image, which could impact the quality of the patient's sexual life. Furthermore, long-term follow-up of patients are needed to clarify whether the presence of the cervix as such is contributing to better sexual life after hysterectomy or whether less scarring and traumatization due to cervix preservation are the primary cause.

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Appendix A: Female sexual function questionnaire score

A. Libido:- Desire 0/Week: 10 points

- Desire ≥ 1/Week: 20 points

B. Coital frequency:- Intercourse 0/Week: 10 points

- Intercourse ≥ 1/Week: 20 points

C. Coital orgasm frequency:- 0 /4 intercourse: 10 points

- ≥ 1 /4 intercourse: 20 points

D. Masturbation frequency:- 0/Week: 10 points

- ≥ 1/Week: 20 points

E. Orgasm during masturbation:- Never: 20 points

- Seldom: 40 points

- Every time: 60 points

F. Multiple coital orgasm:- Never: 20 points

- Seldom: 40 points

- Every time: 60 points

G. Multiple orgasm by masturbation:- Never: 20 points

- Seldom: 40 points

- Every time: 60 points

H. Painful intercourse:- No: 10 points

- Yes: 20 points

I. Lubrication:- Insufficient: 10 points

- Sufficient: 20 points

- Sexual relationship:- Inadequate: 10 points

- Adequate: 20 points

J. Life quality:- Poor: 10 points

- Very good: 100 points

Based on: R. Rosen, C. Brown, J. Heiman, S. Leiblum, C. Meston, R. Shabsigh, D. Ferguson and R. D'Agostino, "The female sexual function index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function," 2000.