ABSTRACT

Objective: We report and review herein our 10-year experience with classic intrafascial supracervical hysterectomy focusing on our long-term experience, evolution of the operative technique, and increased use of this technique.

Method: We performed a parallel, observational study with retrospective data to evaluate classic intrafascial supracervical hysterectomy, a laparoscopic hysterectomy technique, at Fayette Medical Center, a community hospital in Northwestern Alabama, USA. Patients comprised a consecutive series of 579 over a 10-year period from November 1992 through November 2002.

Results: The classic intrafascial supracervical hysterectomy technique, similar to standard supracervical hysterectomy, leaves the cardinal ligament, uterosacral ligament, vascular supply, and innervation to the upper vagina and cervix intact, but unlike supracervical hysterectomy removes the transition zone and endocervical canal. For 579 patients, the average age was 45.4 years (range, 22 to 92), follow-up was 75.3 months (range, 17 to 137), operating room time was 69 minutes (range, 44 to 370), blood loss was 72 mL (range, 10 to 765), length of hospital stay was 23.2 hours (range, 14 hours to 5 days), time to return to work was 13.2 days (range, 3 to 28). Complications include 11 cervical bleedings, 1 uterine artery bleeding, 1 pelvic hematoma, 1 postoperative ileus, and 16 mucoceles of the cervical stump. Three patients were converted from a laparoscopic to an open procedure (0.52%). Long-term follow-up of up to 137 months shows no adverse events thus far.

Conclusions: Classic intrafascial supracervical hysterectomy is a safe procedure with a low short- and long-term complication rate. It has a short recuperation period and high patient satisfaction. It is the procedure of choice when hysterectomy is indicated for benign disease.

Key Words: CISH, Hysterectomy, Laparoscopy, Complications, Long-term experience.

INTRODUCTION

Since the introduction of the Classic Intrafascial Supracervical Hysterectomy (CISH), known as the CISH technique, by laparoscopy innovator Kurt Semm from Kiel, Germany, in 1991, this technique has been performed worldwide as previously described; however, the adoption of this operative technique and remarkable success in the last decade in many countries throughout the world is not adequately reflected in the medical literature. Since publication of the largest worldwide series of CISH in 2001, only 3 more papers mentioning the CISH technique have been published worldwide and listed as of July 2005 in MEDLINE's database, one in Chinese and only 2 in English.

Since the introduction of the CISH technique at Fayette Medical Center in Alabama in November 1992, after a 2-week training course at Prof. Semm’s OB/GYN University Clinic in Kiel, Germany, 579 CISH procedures have been performed as of November 30, 2002. This is the most comprehensive experience and the largest number of CISH hysterectomies performed by a single physician reported so far. Although the CISH hysterectomy was initially a true OB/GYN procedure, in rural areas of the US, it is a necessity that such a procedure can be and is performed on a routine base by a general surgeon.

Herein, we present our >10 years experience and long-term results of performing CISH, discuss different aspects of underutilization of this technique, and decrease the threshold to encourage colleagues to embrace this well-established operational technique.
METHODS

The CISH operative method and its indications and contraindications have been comprehensively described previously.\textsuperscript{1,2} Although the CISH technique was performed in the beginning as described by Semm,\textsuperscript{1} it has gone through a kind of evolutionary process over the ensuing years. Operative modifications have been successfully instituted, resulting in a decrease in operative instrument costs\textsuperscript{6} and a more cost-effective outpatient laparoscopic hysterectomy.\textsuperscript{7} However, at Fayette Medical Center, CISH is still performed according to Semm’s original technique.\textsuperscript{1} We retrospectively evaluated data from medical records. All records were complete regarding all parameters evaluated. Due to the rural nature of this part of Alabama, follow-up for long-term results of all patients was easy and complete.

RESULTS

From November 1992 to November 2002, 579 CISH procedures were performed, adding another 142 procedures to the previously published series of 437, leading to the cumulative results as shown in Table 1.

It is important to mention that in the entire series, no mortalities; no ureter, bowel, bladder, major vessel or nerve injury; or cervical stump or intraperitoneal infection occurred. Within this second group of 142 CISH procedures, we had no additional operative complications. In the previously reported series, we had 5 more mucoceles of the cervical stump occurring between 2 months and 27 months postoperatively, which required intervention on an ambulatory basis. Until now, no cervical cancer has been seen in the entire CISH group of 579 patients on follow-up. Also, no conversion to laparotomy has been necessary other than the previous 3 conversions in the first series, further reducing the conversion rate to 3/579 (0.52%). In the entire series, we had no instrument failure or malfunction or any unintended damage to tissue.

DISCUSSION

Laparoscopic hysterectomy, performed with Semm’s CISH technique, is just one of many different hysterectomy techniques. Although considered a supracervical hysterectomy technique, CISH should better be called an extended supracervical hysterectomy, because a large part of the cervix—about 2/3—usually including the entire transition zone is removed during the procedure and only the outer ring of the cervix is left in situ. According to Semm’s clinical experience and strong opinion, leaving this outer ring of the cervix in situ further supports the pelvic floor.

| Outcome for 579 Classical Intrafascial Supracervical Hysterectomy Procedures at Fayette Medical Center From November 1992 Through November 2002 |
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| Patient age | Mean = 45.4 years; Range, 22 to 92 years |
| Operation time (anesthesia time) | Mean = 69 min; Range, 44 min to 370 min |
| Follow up | Mean = 75.3 months; Range 17 to 137 months |
| Blood loss | Mean = 72 mL; Range, 10 to 765 mL |
| Length of hospital stay | Mean = 21.2 hours; Range, 14 hours to 5 days |
| Return to work | Mean = 13.2 days; Range, 3 to 28 days |
| Complications | 30 (5.2%) |
| Cervical bleeding | 11 (7 within 21 days, 4 within 2 to 4 years) |
| Uterine artery bleeding | 1 |
| Pelvic hematoma | 1 |
| Postoperative ileus | 1 |
| Mucoceles from cervical stump | 16 (between 2 and 27 months postoperatively) |
| Conversion rate to laparotomy | 3 (0.52%) |
| Mortality; | 0 |
| Ureter, bowel, bladder, major vessel, and nerve injuries | 0 |
| Intraperitoneal and cervical stump infections | 0 |
| Instrument failures | 0 |
after the operation and makes the dissection and removal of other structures like the cardinal ligament, uterosacral ligament, vascular supply, and innervations to the upper vagina and the rest of the cervix unnecessary.1

The choice of hysterectomy operative technique by the physician is often based on personal opinion, experience, and training. Despite lasting controversies about laparoscopy being an adequate access technique for operating on malignancies, the physician is free to choose the hysterectomy technique. For benign disease, any laparoscopic operative technique with minimal access is undoubtedly a benefit to the patient and supports early recovery. So the criticism of CISH techniques performed over the last decade is in our point of view not justified. Our long-term experience confirms that CISH is a safe operative technique and a legitimate alternative operative technique with minimal short- and long-term complication rates.

Like any other operative technique, a learning curve is reflected by very long operation times, eg, up to 6 hours and 10 minutes. The 3 longest procedures of >5 hours were within the first 10 cases back in 1992. From our point of view, appropriate teaching and coaching from an experienced colleague could likely eliminate this, which avoids the need for finding solutions on your own. The changes in the operative results after adding the second series to the first series were minimal (Table 1). This reflects the fact that the learning curve was passed a long time ago. A CISH procedure in just 45 minutes CC-time, including a comprehensive adhesiolysis, like the procedure broadcast to a symposium at the 30th AAGL meeting in November 2001 from Fayette Medical Center to San Francisco, is now standard.

The low complication rate (30/579=5.2%) (Table 1) includes many complications that cannot be considered severe, usually resolve quickly, and are easy to handle. After having shown in a large number of patients (n=579) and over a >10-year period that the CISH technique can be performed safely and without any negative experience, the question as to why more colleagues haven’t adopted this operative technique for the benefit of their patients needs to be addressed.

The first reason is probably that CISH is not an easy to learn or even intuitive laparoscopic operative technique. The reason for this is that a variety of different instruments, the Calibrated Uterine Resection Tool (CURT) and Serrated Edged Marco Morcellator (SEMM), are used, which were invented by Semm, produced by his company WISAP, and are almost exclusively used for CISH. These instruments and their function have to be fully understood first. Potential fears of unintentionally cutting into relevant surrounding structures with the CURT instrument are unsubstantiated. After perforation of the uterus fundus in the midline under visual control with the guiding rod and choosing the adequate size for the CURT instrument, usually a 15-mm diameter, no structure outside the guiding rod can be accidentally damaged.

Secondly, when initiating the CISH procedure, teaching, or even better, coaching of the surgeon is necessary. Several colleagues who came to Fayette Medical Center to learn the CISH operation were offered coaching while they were doing their first procedures in their own ORs. This proved to be a successful approach compared with approaches used by other colleagues interested in CISH, who elected to start it by themselves alone. An additional disadvantage is that so far no established CISH training courses are available. Although all physicians we know of who are performing CISH offer in-hospital training, this seems to be inadequate to further increase the utilization of this operative technique.

Like any other operative procedure, CISH is evolving over time and can be and is constantly being modified and adjusted to individual and specific requirements accordingly throughout the world.6,5–8 Several successful attempts have been made at our institution alone.2,6–8

Cost of CISH-specific instrumentation needs to be discussed. In times when cost is of increasing concern, the cost and usability of the instruments cannot be ignored. The cost of a CURT is US$851 and a SEMM is US$321, which can be unaffordable when cost effectiveness is desired and can even lead to a substitution of the CURT and SEMM by old-fashioned surgical techniques as described previously.6 This becomes an even more important issue for CISH procedures in an ambulatory surgery center5 where the reimbursement rate is only 30% to 40% that of a standard fully equipped hospital. A decrease in instrument costs could increase the interest in the CISH technique. So the manufacturer should be encouraged to certify the CURT and SEMM instruments for multiple uses instead of limiting them to single-use, disposable devices.

CONCLUSION

Long-term results of this world’s largest series of CISH procedures confirm that CISH can be performed safely with a low complication rate by a general surgeon in a rural area, but further measures, eg, establishing training courses, reduction of instrument cost, and approval of
instrument multi-usability, have to be undertaken to encourage the use of CISH on a broader basis.

References:
1. Semm K. Hysterektomie per laparotomiam oder per pelviskopiam. Ein neuer Weg ohne Kolpotomie durch CASH [Hysterectomy via laparotomy or pelviscopy. A new CASH method without colpotomy]. Geburtshilfe Frauenheilkd. 1991;51(12):996–1003.

2. Morrison JE Jr., Jacobs VR. 437 Classic supracervical intrasacral hysterectomies in 8 years. J Am Assoc Gynecol Laparosc. 2001;8(4):558–567.

3. Hua K, Lin J, Liu X, et al. [Four surgical patterns of hysterectomy for uterine without prolapsis: a clinical study]. Zhonghua Yi Xue Za Zhi. 2002;82(23):1599–1603. Chinese.

4. Kim DH, Lee YS, Lee ES. Alteration of sexual function after classic intrasacral supracervical hysterectomy and total hysterectomy. J Am Assoc Gynecol Laparosc. 2003;10(1):60–64.

5. Kim DH, Lee ES, Park SD. A safer, simpler, classic intrasacral supracervical hysterectomy technique. JSLS. 2005;9(2):159–162.

6. Morrison JE Jr., Jacobs VR. Replacement of expensive, disposable instruments with cheap, old-fashioned surgical techniques for improved cost-effectiveness in laparoscopic hysterectomy. JSLS. 2004;8:201–206.

7. Morrison JE Jr., Jacobs VR. Outpatient laparoscopic hysterectomy in a rural ambulatory surgery center. J Am Assoc Gynecol Laparosc. 2004;11(3):359–365.

8. Morrison JE Jr., Jacobs VR. Operative modifications of the classic intrasacral supracervical hysterectomy (CISH) for improved cost effectiveness. JSLS. 2002;6(3):261–262.