ORIGINAL RESEARCH PAPER

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COMPARISION BETWEEN LAPAROSCOPIC AND VAGINAL HYSTERECTOMY

KEY WORDS: hysterectomy, vaginal, laparoscopic, surgery, abdominal

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ABSTRACT

Hysterectomy is the most commonly performed major abdominal surgery among gynecologic surgeons and the decision is generally based on indications for surgery, surgeon's training and preference, uterine size, presence and absence of any associated pelvic pathologies and patient's choice. Laparoscopic procedures are associated with less post-operative pain, shorter hospitalization, and with lower infectious morbidity rate than laparotomy. **Materials and Methods:** Patients undergoing both the types of hysterectomy i.e. LH (Laparoscopic hysterectomy) and NDVH (Non descent vaginal hysterectomy) were included in the study. Those patients having malignancy as diagnosed by Pap smear or by Dilatation &Curettage were excluded from the study. All the patients were investigated thoroughly for their cardio respiratory status, fitness for surgery and other medical conditions. **Results:** In this study majority of patients belongs to age group 40-49 years in both the groups. Fibroid and adenomyosis were the most common indications of hysterectomy in both LH group & NDVH group. Average amount of blood loss in NDVH was 163±149 ml and it was 123.3±132 ml in LH group. Blood loss in LH group was less. The duration in the hospital stay of LH was less than that of NDVH. **Conclusion:** LH can be considered an alternative to NDVH for those in whom NDVH is not feasible or patient wants to be at work early.

INTRODUCTION

Hysterectomy is the most commonly performed major abdominal surgery among gynecologic surgeons and the type of surgery is generally based on indications for surgery, surgeon's training & preference, uterine size, presence and absence of any associated pelvic pathologies and patient's choice.[1] Laparoscopic procedures are associated with less post-operative pain, shorter hospitalization, and with lower infectious morbidity rate than laparotomy. Present study was done at our institute to compare vaginal hysterectomy with laparoscopic hysterectomy. People undergoing laparoscopic hysterectomy experience shorter hospitalization, a smaller wound, more rapid recovery, and shorter absence from work compared to patients undergoing NDVH. The disadvantages of LH are longer operating time, higher costs and experience required for laparoscopy including a learning curve. [2-6] Most of the surgeons do not feel comfortable enough with the vaginal approach, especially in the presence of dense adhesions, need for oophorectomy, narrow vaginal access, and lack of pelvic relaxation.[4-6]

The vaginal approach (NDVH; non descent vaginal hysterectomy) was chosen predominantly in the past, while some gynecologists preferred abdominal Hysterectomy (TAH) in selected cases. Recently, an increasing number of minimally invasive approaches, such as laparoscopic and robotic hysterectomy, have been applied. Only recently have several reports been published in which NDVH and TLH have been compared directly [7]. In our facility, NDVH had also been performed for benign lesions routinely. However, with the growing prevalence of laparoscopic surgery, we have started doing LH also. The aim of our study was to examine whether introduction of LH in a centre where NDVH has been performed predominantly has any risks in respect to complication rates and hospital stay.

MATERIALS AND METHODS

This is a prospective study aimed to compare non descent vaginal hysterectomy (NDVH) and laparoscopic hysterectomy (LH) from all angles. For that cases of both types of hysterectomies were scrutinized thoroughly. Selection Criteria for non-descent vaginal hysterectomy are adequate lateral space in fornices, size of uterus ≤ 12 wks; Cases with previous surgery were included after proper clinical evaluation. Criteria for laparoscopic hysterectomy were same as that of NDVH plus: (i) No umbilical hernia; (ii) No local abdominal skin infection. All cases were investigated thoroughly for their cardio respiratory status and fitness for surgery. All patients were operated under spinal and epidural or general anesthesia as decided by anesthetist whichever was best for individual case. Total follow up was 6 months period.

The aims and objectives were as follows: (1) To compare duration of surgery, blood loss and complications during surgery and post-operative pain in each type of hysterectomy. (2) To evaluate the safety, simplicity and acceptability of each type of hysterectomy both to the patient as well as the surgeon.

All these patients were admitted after proper examination, investigations and fulfilling selection criteria and Pap smear examination to rule out malignancy. The age of the patient, reproductive history, medical history, BMI, patient background, operative time, estimated blood loss during operation and duration of hospital stay were compared between the two groups. Calculation of blood loss was done by subtracting supplied saline from total aspirated fluid. Calculation of blood loss and operation time were routinely performed by the operative nurse and checked by the anesthesiologist. The study was approved by the ethical committee, and performed with an informed consent to the patients.

Factors examined include demographic details, indication for operation, intra-operative details & post-operative review findings. Number of patients included in this study was 130, of which 43 patients underwent NDVH and 87 underwent LH. Patients with malignancies and planned vaginal or abdominal hysterectomies were excluded. In present study, the distribution of patient characteristics and indications of hysterectomy is listed in Table 1. Intra and post-operative results were listed in Table 2.

OBSERVATIONS AND RESULT

Table 1: distribution of patient characteristics and indications of hysterectomy

	NDVH (n=43)	LH (n=87)
Age (years)	47±7.2	46.9±6.9
BMI	27.7±5.5	26±4.7
Parity	1.95±0.7	1.56±0.7
Caesarean delivery	0.2±0.6	0.55±0.8
Sterilization	32	12
Myomectomy	0	2
Adnexectomy	1	0

Total	33 (33.5)	14 (25.4)
Indication of surgery		
Fibroid	52 (56)	37 (67)
Adenomyosis	22 (23)	12 (21)
Endometriosis	2 (0.2)	3 (5.5)
Ovarian cyst	7 (0.8)	1 (1.8)
DUB	19 (20)	2 (3.7)

Table 2: Intra and post-operative results

	NDVH (n=43)	LH (n=87)
Duration of surgery, min	76.9±25	124±39.7
Blood losses, ml	163±149	123.3±132
Hospital stays (days)	2.63±1.2	3.21±0.69
Uterine size, cm	11.45±8.2	11.16±2.9
Hemoglobin change, gm%	1.12±0.7	0.70±0.73
Vault hematoma	4 (4.3)	1 (1.8)
Fever	4 (4.3)	2 (3.6)
Bowel injury	0	1 (1.8)
Bladder injury	0	1 (1.8)
Ureteric injury	0	1 (1.8)
Wound infection	1 (1.1)	0

DISCUSSION:

The results of our study indicate that although the length of operation was significantly higher in the LH group, reduced complications make LH a safer and more comfortable approach for both patients and health care providers. Other studies showed that although the operation time is longer, hospital stay and analgesic use are lower in LH than NDVH but blood loss was higher in NDVH surgery [8-11]. While hemoglobin drop was higher in NDVH, blood transfusions were not common in either of the group in the present study. However, one study by Lowell and Kessler showed the operation time, the mean blood loss and need for transfusion was higher in the NDVH group [12]. In Carter's study, there were no significant differences between estimated blood loss and change in hemoglobin from preoperative to postoperative day 1 levels between NDVH and TLH groups [13]. Another study showed blood transfusion was similar in NDVH (three cases from 47) and TLH (three cases from 45) groups [14]. Intra-operative and postoperative complications were lower in the NDVH group and NDVH patients returned better to normal activity after two weeks. This result supports the findings of a new study [15]. However, a review article demonstrated although LH involves a shorter hospital stay, speedier postoperative recovery, and less analgesia use, there is also a higher rate of bladder injury (1.8% for TLH versus 0.4% for NDVH) and longer operation time [16]. Lowell et al also showed the NDVH increased the risk of intraoperative complications [12]. Given the benefits of LH in this study, we believe it should be offered as a first-line procedure to women undergoing hysterectomy for benign diseases and for whom abdominal hysterectomy is contraindicated. However, based on disadvantages that manifested in other studies we plan to explore the relative merits and demerits of these procedures in a larger-scale study incorporating a larger number of samples.

CONCLUSION

NDVH is associated with less handling of intestines, less exposure to general anesthesia, no need of any specialized instruments, as compared to LH. On the other hand LH is associated with small scar of surgery, less morbidity and less post-operative pain. LH can be a better route of surgery in obese patients in whom NDVH may be difficult. LH can be considered an alternative to AH (abdominal hysterectomy) for those in whom VH (vaginal hysterectomy) is not feasible. LH may be comparable to NDVH in terms of post-operative parameters and satisfaction, but it has significantly longer operated time and requires laparoscopic surgical skills. Recent advances in equipment, surgical techniques and training have made LH a well-tolerated and efficient technique. The future place of LH will be determined by the increased familiarity and skill of surgeons with vaginal procedure, stimulated by doing the difficult part of NDVH. Hence in normal uncomplicated uterus NDVH or even AH has no disadvantages and remain an excellent option. There are many good indications of LH in patients with previous abdominal surgery, multiple fibroids, limited vaginal access, nulliparity or broad ligament myoma. In other words, LH should be considered a better option because of less hospital stay and reduced post op pain after surgery.

REFERENCES

1. Bruhat MA, Mage G, Chapron C, Pouly JL, Canis M, Wattiez A. Presentday endoscopic surgery in gynecology. Eur J Obstet Gynecol Reprod Biol. 1991;41:4-13. 2. Ottosen C, Lingman G, Ottosen L. Three methods for hysterectomy a randomized prospective study of short term outcome. BJOG. 2000;107:1380-1385
2. Liu CY. Laparoscopic hysterectomy: A review of 72 cases. J Reprod Med. 1992; 37:351-4.
3. Kung FT, Hwang HR, Lin H, Tai MC, Hsieh CH, Chang SY. Comparison of laparoscopically assisted vaginal hysterectomy and abdominal hysterectomy in Taiwan. J Formos Med Assoc. 1996;95:769-75.
4. Phipps JH, John M, Nayak S. Comparison of laparoscopically assisted vaginal hysterectomy and bilateral salpingo-oophorectomy with conventional abdominal hysterectomy and bilateral salpingo-oophorectomy. Br J Obstet Gynaecol. 1993;100:698-700.
5. Johns DA, Carrerra B, Jones J, Deleon F, Vincent R, Safely C. The medical and economic impact of laparoscopically assisted vaginal hysterectomy in a large, metropolitan, not-forprofit hospital. Am J Obstet Gynecol. 1995; 172:1709-19.
6. Harris MB, Olive DI. Changing hysterectomy patterns after introduction of laparoscopically assisted vaginal hysterectomy. Am J Obstet Gynecol. 1994;171:340-4.
7. Drahonovsky J, Haakova L, Otcenasek M, Krofta L, Kucera E, et al. (2010) A prospective randomized comparison of vaginal hysterectomy, laparoscopically assisted vaginal hysterectomy, and total laparoscopic hysterectomy in women with benign uterine disease. Eur J Obstet Gynecol ReprodBiol 148:172-176.
8. Kulvanitchaiyanunt A. A retrospective and comparative study between laparoscopically assisted vaginal hysterectomy (LAVH) and total abdominal hysterectomy (TAH). J Med Assoc Thai 2004;87:745-9.
9. Tsaltas J, Magnus A, Mamers PM, Lawrence AS, Lolatgis N, Healy DL. Laparoscopic and abdominal hysterectomy: a cost comparison. Med J Aust 1997;166:205-7.
10. Tsai EM, Chen HS, Long CY, Yang CH, Hsu SC, Wu CH, Lee JN. Laparoscopically assisted vaginal hysterectomy versus total abdominal hysterectomy: a study of 100 cases on light-endorsed transvaginal section. Gynecol Obstet Invest 2003;55:105-9.
11. Frigerio L, Gallo A, Ghezzi F, Trezzi G, Lussana M, Franchi M. Laparoscopic-assisted vaginal hysterectomy versus abdominal hysterectomy in endometrial cancer. Int J Gynaecol Obstet 2006;93:209-13.
12. Lowell L, Kessler AA. Laparoscopically assisted vaginal hysterectomy: a suitable substitute for abdominal hysterectomy? J Reprod Med 2000; 45: 73842.
13. Carter JE, Ryoo J, Kartz A. Laparoscopic-assisted vaginal hysterectomy: a case control comparative study with total abdominal hysterectomy. J Am Assoc Gynecol Laparosc 1994; 1:116-21.
14. McCracken G, Hunter D, Morgan D, Price JH. Comparison of laparoscopic-assisted vaginal hysterectomy, total abdominal hysterectomy and vaginal hysterectomy. Ulster Med J 2006; 75:54-8.
15. Jaturasrivilai P. A comparative study between laparoscopically assisted vaginal hysterectomy and abdominal hysterectomy. J Med Assoc Thai 2007; 90:837-84.
16. Meikle SF, Nugent EW, Orleans M. Complications and recovery from laparoscopy-assisted vaginal hysterectomy compared with abdominal and vaginal hysterectomy. Obstet Gynecol 1997; 89:304-11.