

Clinical Trial of Laparoscopically Assisted Vaginal Hysterectomy Versus Total Abdominal Hysterectomy

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Abstract

Laparoscopically Assisted Vaginal Hysterectomy (LAVH) is a safe alternative to abdominal hysterectomy. The study was undertaken on 20 women scheduled for abdominal hysterectomy for benign diseases in the Department of Gynaecology and Obstetrics at S.M.G.S hospital Jammu, out of which ten opted for LAVH in lieu of abdominal hysterectomy. The main variables compared were operative time, length of hospital stay, postoperative recovery, return to work and costs for women undergoing LAVH or abdominal hysterectomy. The LAVH group had longer operative time (120-240 minutes) vs abdominal hysterectomy (90-120) minutes, lower requirement for post operative intravenous analgesia, shorter length of hospital stay, met early discharge criteria and quicker return to work.

Key words

Hysterectomy, Laparoscopically assisted vaginal hysterectomy (LAVH).

Introduction

Laparoscopic Assisted Vaginal Hysterectomy (LAVH) has become increasingly popular as a definite alternative to abdominal hysterectomy. Approximately 6,00,000 hysterectomies are performed annually in the United States, (1) of which 70% are performed by the abdominal route (2). In some countries the rate is as high as 95% (3). However, the vaginal approach is clearly superior to laparotomy (2-4). Patients undergoing vaginal hysterectomy have fewer overall complications, shorter hospital stay, and shorter convalescence period than those undergoing abdominal hysterectomy. LAVH is a safe alternative to abdominal hysterectomy. The advantages of laparoscopically assisted vaginal hysterectomy over abdominal hysterectomy have been reported to be less postoperative pain, shorter hospital stays and more rapid return to normal activities and work.(5).

The first case report of laparoscopic hysterectomy was done by Reich *et al* in 1989 (6). Johns and Diamond (1994) proposed staging of laparoscopic hysterectomy to indicate how much of the procedure is to be performed laparoscopically (7).

LAVH is a hybrid procedure in which the laparoscope is used to perform an intraabdominal portion of the hysterectomy and vaginal route is used to complete the removal of the uterus. The term Laparoscopic hysterectomy seems to imply that the hysterectomy is performed entirely by the laparoscopic route only.

The rationale for LH is to convert an abdominal hysterectomy into a laparoscopic/ vaginal procedure and thereby reduce trauma and morbidity. The study was undertaken to assess the impact of LAVH on various variables like operative time, hospital stay, complications and convalescence in our setup of patients.

Material and Methods

The study was conducted on 20 patients admitted in SMGS Hospital, Jammu, with an indication for abdominal hysterectomy, of whom 10 underwent LAVH and 10 abdominal hysterectomy. Patient's characteristics and primary indications for hysterectomy are shown in (Table 1). All patients had relative contraindications for vaginal hysterectomy according to

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traditional criteria (e. g. absence of vaginal prolapse, uterine enlargement, previous pelvic surgery, endometriosis, need for oophorectomy). All patients gave informed consent and were told about the possibility of laparotomy.

Surgical technique

Surgery was carried out under general anaesthesia. The laparoscope was inserted through a sub-umbilical incision, and usually two 5mm secondary portals were used for the laparoscopic instruments. The principal method of haemostasis was bipolar electrosurgical desiccation, though linear staplers were tried in 2 women.

After inspection of the pelvis and upper abdomen, any distortion of the pelvic anatomy was corrected by adhesiolysis. The pelvic portion of the ureters was identified but the ureters were not routinely dissected out. When the ovaries were conserved, bipolar diathermy was used medially to desiccate the round and ovarian ligaments and the fallopian tube. The approach to the ovarian pedicle during oophorectomy depended on whether the uterine vessels were to be divided laparoscopically or vaginally. If they were to be divided vaginally, we coagulated and divided the ovarian vessels but not the round ligaments. Dissection then proceeded towards the uterine origin of the round ligament, after which the hysterectomy was completed vaginally (stage 2LH) or after laparoscopic mobilization of the bladder (stage 3LH). If the uterine vessels were treated laparoscopically (stage 4LH) the round ligament were always divided, together with the ovarian vessels and fallopian tubes, and the dissection continued to the level of the uterine arteries which were then desiccated and cut close to the uterus. The vaginal component of LH procedure was performed with a modified Heaney technique. Laparoscopy was repeated at the end of vaginal surgery to ensure haemostasis and for peritoneal lavage. The time of surgery i.e. from the introduction of Veress needle to the time of vaginal vault closure was recorded. Blood loss was estimated by quantity in the suction bottle and subjectively by the number of swabs and gauze pieces soaked. All the difficulties encountered during the surgery were noted. Postoperative fever was considered as body temperature equal to or higher than

38°C in 2 consecutive measurements at least 6 hrs. apart excluding the first 24 hrs.

The incidence of intra operative and postoperative complications, febrile morbidity, analgesic requirements and postoperative hospital stay were recorded in all cases. The patient was eligible for discharge from the hospital when her pain was controlled with oral medication; she tolerated a clear liquid diet, ambulated on her own, and voided without difficulty. Patients were reviewed 6 weeks after surgery.

Results

10 Patients awaiting abdominal hysterectomy opted for laparoscopically assisted vaginal hysterectomy. 6 patients had stage 3LH. Laparoscopic transection of uterine vessels (stage 4LH) was attempted in 4 patients but was successful in 2 patients. In the other 2 patients, uterine artery was religated vaginally. Intraoperative variables are depicted in (Table-2). Postoperative complications are depicted in (Table-3). As depicted in Table-3, there were no major complications. Only one patient had urinary tract infection and one had respiratory tract infection, which responded to antibiotics. The blood loss was 450-600 ml and none of the patients required blood transfusion. Patients required less postoperative analgesia and met early discharge criteria and were discharged on 3rd postoperative day. LAVH had operative time, which ranged from 120-240 minutes. Postoperative day 1 Hb% drop was lower in LAVH group.

Discussion

Table-1
Baseline Characteristics of hysterectomy patients

	Abdominal Hysterectomy N=10	LAVH N=10
Mean Age (Yrs.)	48.8	46.8
Parity (Mean)	4.2	3.6
Any medical illness (%)	60	40
Previous Surgery (%)	80	60
Indications for surgery (%)		
Endometriosis	20	40
Adnexal mass	40	20
Fibroids/ Menorrhagia	40	40

Table 2
Intraoperative variables

	Abdominal Hysterectomy	LAVH
Operative time (min)	90-120	120-240
Post operative day 1 Hb drop (gm/100ml)	1-1.6	.9-1.0

Table-3
Postoperative complications

	Abdominal Hysterectomy	LAVH
Post operative pain	More	Minimal
Ambulation	Delayed	Within 5-6 hours
Fever	1	0
Urinary tract infection	2	1
Wound infection	3	0
Vaginal cuff infection	0	0
Lower respiratory tract infection	0	1
Postoperative recovery	Delayed	Rapid
Hospitalization	7-8 days	3 days
Return to work	4-8 weeks	2-3 weeks

The major advantages of the laparoscopic procedure, as demonstrated in the present study were reduced postoperative pain, shorter hospital stay, rapid convalescence and patient's satisfaction about the absence of scar. Our results are in line with the experience of other investigators. (8-10). Operative time ranged between 120-240 minutes. However, as the experience with LAVH grew over time, minimum operative time in our study came to 120 minutes. Operating time was significantly longer for LAVH than TAH. Similar results have been shown previously by some authors (LAVH 120 minutes v/s VH 65 minutes) (11, 12) and LAVH operating time 152.2±32.4 v/s TAH 96.5±29.6 (13, 14). Tommaso Falcane (5) had shown similar results by comparing operative time between two groups. LAVH group had longer operative time; lower requirements for postoperative intravenous analgesia, and shorter length of hospital stay (1.5 days for LAVH, 2.5 days for abdominal hysterectomy and quicker return to work. Endostaplers were tried in 2 cases but were not successful. Similar results have been shown by Shen *et al* (14) and Tsai *et al* (15).

In the study by Tommaso (5) LAVH group had longer operating times 180 minutes v/s TAH 130 minutes, shorter length of hospital stay LAVH 1.5 days v/s AH 2.5 days and quicker return to work.

Patients in the LAVH group required less postoperative analgesia, met early discharge criteria and were discharged on 3rd post operative day. No patient required readmission after discharge. There were no major complications. Patients who had a laparoscopically assisted vaginal hysterectomy returned to work sooner than patients who had a total abdominal hysterectomy.

Shen & Tsai *et al* (14, 15) in their study revealed statistically significant difference between LAVH and TAH in terms of short term clinical results i.e. blood loss during surgery, narcotic analgesic consumption, duration of hospital stay and convalescence time (higher for TAH than for LAVH p<0.05).

Hidlebaugh and Ransom SB *et al* (16, 17) performed cost analysis of endometrial ablation, abdominal hysterectomy, vaginal hysterectomy and LAVH in the treatment of primary menorrhagia. VH is least costly of all hysterectomy techniques. Average inpatient charges for LAVH were greater (\$ 7623) than those for TAH (\$ 4550). The use of non-disposable supplies with LAVH and its increased operative time compared with TAH or VH are the main reasons for their difference in charges. The indirect cost of LAVH is significantly less because of the more rapid convalescence. Since this study has been conducted in S.M.G.S hospital which is a Government run hospital and all the services were provided to the patients free of cost, only comparable parameters in this study was shorter length of hospital stay as compared to abdominal hysterectomy.

As shown by this study, endoscopes surgery provides the gynaecologist with many advantages compared to conventional laparotomy procedures. These include a magnified and improved view of the operating field, observation of the pelvic organs in a more natural state, less tissue handling, smaller incisions that reduce pain, shorter length of hospital stay, improved cosmesis and earlier return to work. The operative time has been found to be more with the laparoscopic approach than that with abdominal hysterectomy. However, the advantages offered by laparoscopic surgery in terms of shorten period



of hospitalization, quicker introduction of normal diet, lesser complication and over all a better quality of life index are not debatable and have been proved time and again (18). Thus given adequate training of the surgeon in laparoscopic surgery, most of the patients who require a hysterectomy and have contraindications to vaginal hysterectomy may be offered laparoscopically assisted vaginal hysterectomy with all the benefits associated with the vaginal route. The procedure requires special equipment and may only be carried out by experienced gynaecological laparoscopic surgeon. Thus, it is safely possible for a gynaecological surgeon to add laparoscopically assisted vaginal hysterectomy to his/her surgical armamentarium on condition that he or she is well conversant with the performance of the procedure.

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