

Choosing the Route of Hysterectomy

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About the Author



Sandhyasri Panda has been trained and functioning as Laparoscopic Surgeon for the last five years. She is very good in Academics, a good teacher and Researcher in her field. She not only participates in Conference, but, presents papers and received Awards for best papers. She has five National and one international publication. She is an awardee of National Scholarship in her Higher Secondary and Intermediate Class, Topper in her batch of JEE, stood fourth in her batch of MBBS; an Awardee by National Eclampsia Registry. She participated as guest faculty in P.G.CMEs in different medical colleges

Abstract

Purpose To compare the clinical results of three techniques of hysterectomy- abdominal hysterectomy (AH), non-descent vaginal hysterectomy (NDVH), and laparoscopic-assisted vaginal hysterectomy (LAVH).

Methods A simple prospective randomized study was performed in a tertiary care centre between June 2011 and Dec 2012, among 150 consecutive women indicated to undergo hysterectomy for benign and mobile uterine conditions. They were randomly assigned 50 each to three routes of hysterectomy; (abdominal, vaginal, and

laparoscopic-assisted vaginal). Outcome measures including operating time, blood loss, rate of complications, consumption of analgesics, and length of hospital stay were assessed and compared between groups.

Results As far as duration of operation, mean blood loss, analgesic requirement, length of hospital stay, P value was significant. Incidence of complications is least among VH group.

Conclusion Vaginal hysterectomy is the gold standard in the era of minimal access surgery. Some of the contraindications to VH can be overcome by assistance of laparoscope and a potential abdominal hysterectomy can be converted to a vaginal procedure.

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Introduction

While hysterectomy is one of the most frequently performed operations in gynecology, how to perform it

Table 1 Patient profile

Total no of patients	AH		VH		LAVH	
	50	%	49	%	46	%
Age						
Range	25–55		28–55		34–56	
Mean	40.84		41.44		44.57	
Parity						
Nullipara	2	4	1	2.1	2	4.4
Multipara	48	96	48	97.9	44	95.6
Mode of Delivery						
CS	10	20	2	4.08	5	10.86
VD	40	80	47	95.9	41	89.1
Tubectomy status	38	76	44	89.7	44	95.6

abdominally, vaginally, or laparoscopically is a controversy. Though numerous studies have been published in an attempt to throw some light into this issue, guidelines are not yet set to assign a particular technique.

Traditionally, the uterus has been removed by either abdominal or vaginal route. The vaginal operation is preferable when there is no contraindication because of lower morbidity and quicker recovery [1]. Since the introduction of laparoscopy, the method of hysterectomy is a subject of debate. Prior to introduction of the laparoscopic-assisted vaginal hysterectomy (LAVH) by Harry Reich et al. [2] in 1989, several large studies were published that compared abdominal and vaginal routes for hysterectomy. The largest was the Collaborative Review of Sterilization (CREST) study conducted by the Centres for Disease Control (CDC) [3]. This report included 1,856 women aged 15–44 who underwent non-emergency, non-radical hysterectomy at 9 institutions between 1978 and 1981. Fewer complications were associated with vaginal hysterectomy (VH) than abdominal hysterectomy (AH).

Since the introduction of LAVH, there is a growth in the number of hysterectomies performed. Recently, the eVALuate study [4] concluded that LAVH was associated with a significantly higher rate of major complications than abdominal total hysterectomy (TAH). LAVH took longer to perform but associated with less pain and quicker recovery.

The aim of our study was to compare VH with AH and LAVH on outcome measures such as operating time, hematocrit fall, consumption of analgesia, length of hospital stay, and rate of complications.

Materials and Methods

A simple randomized prospective comparative study was performed between June 2011 and Dec 2012 among 150 consecutive women requiring hysterectomy for benign

uterine conditions. Fifty patients in each group were assigned to abdominal, vaginal, and laparoscopic-assisted vaginal route for hysterectomy. Women were included in the study only when uterine size was ≤ 14 weeks and operation was performed for a benign uterine condition. Women were excluded if their primary diagnosis was related to malignancy, pelvic endometriosis, and prolapse.

The analysis was done on the basis of the following: route of hysterectomy, age and parity, pathological diagnosis, operating time, additional procedure, hematocrit fall, analgesic requirement, length of hospital stay, and complications. Major complications were compared to one of these categories: hemorrhage requiring blood transfusion, injury to urinary or gastrointestinal tract, and any emergency laparotomy in the immediate post-op period. Minor complications were analyzed under following headings: secondary hemorrhage, wound sepsis, and vault hematoma.

Operative observations and complications were tabulated for each woman (data were analyzed statistically using Chi square test and z test and P value was determined).

A literature review was made using Medline & Pubmed and our results were compared with similar studies.

Table 2 Indications for hysterectomy

Indications	AH(50)		VH(49)		LAVH(46)	
	No.	%	No.	%	No.	%
Fibroid uterus	18	36	14	28.57	11	23.91
Adenomyosis	6	12	8	16.32	7	15.21
DUB	14	28	18	36.73	17	36.95
CIN & Severe dysplasia	7	14	5	10.20	5	10.87
CPP	1	2	0	0	2	4.34
PMB	4	8	4	8.16	4	8.69

Table 3 Operative Observation

	AH(50)	VH(49)	LAVH(46)	<i>P</i> value
Added procedure Adnexectomy, cyst puncture, adhesiolysis	15 (30 %)	7 (14.24 %)	9 (19.56 %)	
Duration of surgery Mean \pm SD	61.26 \pm 10.49	64.14 \pm 10.69	124.56 \pm 19.49	0.1745(NS) <0.0001
Hematocrit fall Mean \pm SD	0.48 \pm 0.30	0.17 \pm 0.15	0.54 \pm 0.43	<0.0001 <0.0001
Duration of hospital stay Mean \pm SD	8 \pm 1.54	5.08 \pm 1.11	4.78 \pm 0.91	<0.0001 0.8856(NS)
Need for analgesia \leq 24 h	5 (10 %)	44 (89.79 %)	37 (80.43 %)	<0.0001 extremely significant
>24 h	45 (90 %)	5 (10.21 %)	9 (19.57 %)	

Table 4 Complications

	AH(50)		VH(49)		LAVH(46)	
	No	%	No	%	No	%
Major						
Hemorrhage requiring blood transfusion	3	6	Nil		2	4.34
Urinary tract injuries	1	2	1	2.04	Nil	
Bowel injuries	Nil		Nil		1	2.17
Laparotomy	1	2	Nil		1	2.17
Minor						
Secondary hemorrhage	2	4	Nil		Nil	
Wound sepsis	6	12	Nil		Nil	
Vault hematoma	2	4	Nil		Nil	

Results

Four women in LAVH group and one in vaginal group were converted to abdominal route and considered failure of procedure.

Demographic characteristics demonstrated an increase in average age among women who underwent vaginal hysterectomy for both VH and LAVH groups. Ninety percent women were parous in all groups. Among abdominal hysterectomy, group 20 % had cesarean section, whereas it was 4 % and 10.87 % for VH and LAVH group, respectively.

Indications for hysterectomy as diagnosed by histopathology are depicted in Table 2. Average size of uterus in abdominal group was 12–14 weeks and same in vaginal group was 10–12 weeks. The surgical techniques used in vaginal group with fibroid and adenomyosis were bisection, myomectomy, and morcellation.

Some form of added procedures were performed in all routes of hysterectomy. In abdominal group, 30 % had concurrent salpingo-oophorectomy, whereas adhesiolysis, cyst aspiration, and cystectomy were additional procedure

among 19.56 % of LAVH group. Among VH group, 14.24 % underwent salpingo-oophorectomy.

There was a marginal difference in mean operating time for VH [64.14 \pm 10.69] and AH [61.26 \pm 10.49] but that for LAVH [124.56 \pm 19.49] was extremely statistically significant. Mean hematocrit fall in VH [0.17 \pm 0.15] group was significantly lower than both AH [0.48 \pm 0.30] and LAVH [0.54 \pm 0.43] groups. The mean length of hospital stay in Vaginal groups was 5.08 days and 4.78 days, while that in abdominal group was 8 days. Post-operatively vaginal groups required less analgesia than abdominal group.

No patient in VH group required blood transfusion, whereas in AH group it was 6 % and in LAVH group it was 4.34 %. None of the patients in VH group required relaparotomy in immediate post-op period, while one in each group AH (for hemorrhage) and LAVH (for bowel injury) required it.

One patient each in both VH and AH group sustained urinary tract injury which was managed without much morbidity.

All types of minor complications were noted only among abdominal group (see Tables 1, 2, 3, 4).

Discussion

Despite well-documented benefits of vaginal hysterectomy in terms of lower complication rates, shorter hospital stay and convalescence, and better quality of life, therefore, vaginal hysterectomy is preferred when either vaginal or abdominal route is clinically appropriate, the only formal guideline available is the uterine size guide line by ACOG which suggests that the vaginal route is the most appropriate in women with mobile uteri not larger than 12 weeks gestational age (approximately 280 gms) [5, 6]. ACOG also acknowledges that the choice of approach should be based on anatomical condition, informed patient preference, and the surgeon's expertise and training [7].

Since Reich described LAVH in 1989, the uptake of the procedure has been slow and subject to considerable geographical variation. It incurs high expenditure, has got a long learning curve, experience gained remains low, therefore high-complication rate and often takes considerable operation time [8], while the post-op recovery is similar to that of VH. This is reflected in high number of conversions to laparotomy in LAVH group. The eVALuate study [4] concluded that although such conversions represented prudent surgery, they represented a failure of planned procedure and considered as major complications. In our study, four cases in the LAVH group underwent conversions to laparotomy to complete hysterectomy.

In all the studies reviewed including ours, the mean operating time was significantly longer [approximately twice] for laparoscopic-assisted vaginal hysterectomy [124.56 min] versus VH [64.14 m] and AH [61.26 m]. The two-tailed *P* value (<0.0001) using *Z* test was found to be extremely statistically significant.

Results of data analysis on post-op recovery phase in our study are similar to those of others, i.e., that patients undergoing LAVH and VH benefit from quicker and less complicated recovery than TAH [9–11], with discharge from hospital more than two days earlier and significantly less requirement of analgesia. These factors reduce indirect cost of the surgery, but this must be offset against the longer operating time needed for LAVH.

Conclusion

Vaginal hysterectomy is the gold standard in the era of minimal access surgery. Some of the contraindications to VH can be overcome by assistance of laparoscope and a potential abdominal hysterectomy can be converted to a vaginal procedure. Evidence-based studies support the use of vaginal hysterectomy if possible over laparoscopic and abdominal hysterectomy.

Specific guidelines for uterine size, risk factors, and uterine and adnexal mobility and accessibility are useful in selecting the optimal approach to hysterectomy and will significantly reduce the number of abdominal operations performed. Laparoscopy is valuable in properly selected patients to determine the route of hysterectomy [12].

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Compliance with ethical requirements and Conflict of interest All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008 (5). Informed consent was obtained from all patients for being included in the study. Sandhaysri Panda, Askok K. Behera, M. Jayalaxmi, T. Narasinga Rao & G. Indira declare that they have no conflicts of interest.

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