International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Mukherjee S et al. Int J Reprod Contracept Obstet Gynecol. 2023 Nov;12(11):3313-3316
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20233300

Original Research Article

Laparoscopically assisted vaginal hysterectomy vs non-descent vaginal hysterectomy in the benign diseases of the uterus: an interventional study

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Received: 01 September 2023
Accepted: 02 October 2023

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ABSTRACT

Background: Hysterectomy is most common gynaecological surgery done for various indications varying from AUB and fibroid uterus to malignancies. There are various approaches for performing hysterectomy, ranging from laparotomy and laparoscopic to vaginal hysterectomy, in both descent and non-descent cases. Incidence of hysterectomies in India is reported to be low compared to developed countries. Most common indication for hysterectomy being excessive menstrual blood loss due to hormonal reasons or fibroids (size more often not exceeding 12 weeks). Aim of study was to compare intra-op and post-op complications between non-descent vaginal hysterectomy and laparoscopic hysterectomy and establish the better method for hysterectomy in non-descent uterus.
Methods: A prospective comparative study of 104 hysterectomies was done over a period of November 2019 to October 2020, with 52 cases each in one group of non-descent vaginal hysterectomy (NDVH) and other group of total laparoscopic hysterectomy LAVH. Demographic characteristics, indications for surgery, operative time, intra-operative blood loss, post-operative analgesia requirements, post-operative hospital stay and post-operative complications were compared between both groups.
Results: The most common age in both groups was 41-50 years. Among 104 cases undergoing NDVH and LAVH the most common indication of surgery was Fibroid and DUB. The mean operative time in NDVH group was 90.54±5.89 min while it was 127.12±12.58 min in LAVH group, and the mean blood loss in NDVH group was 108.56±7.14 ml, while it was 89.23±7.37 ml in LAVH group. The intraoperative complication rate in NDVH was more compared to LAVH.
Conclusions: The present study concludes that NDVH can be safely offered to patients with benign gynaecological conditions and this scarless approach appears to be the preferred method of hysterectomy. LAVH can be offered as a synergistic surgery in cases where difficulty in operative dissection is anticipated.

Keywords: Laparoscopic assisted vaginal hysterectomy, Non descent vaginal hysterectomy

INTRODUCTION

Hysterectomy comes next only to Caesarean section as the most common operation performed by the gynaecologists, done for various indications varying from AUB, fibroid uterus to malignancies. The highest rate being between the age of 40-49 years with an average age of 46.1 years.[1]

There are various approaches for performing hysterectomy ranging from laparotomy, laparoscopic, vaginal or even robotic hysterectomy in both descent and non-descent cases. While deciding which passage to take and which particular procedure of hysterectomy should be performed,

the physician should take note of the size and form of the uterus, accessibility to it, accompanying adenexal pathology, hospital facilities, patient preference or affordability and surgeon's expertise skills.

Laparoscopic hysterectomy is the procedure wherein the uterine vessels are ligated by the laparoscopic route but part of the operation is performed vaginally. It can be Total laparoscopic Hysterectomy or Single-port Laparoscopic Hysterectomy (SP-LH) and Mini Laparoscopic Hysterectomy (mini-LH).[2]

In this era of robotic and laparoscopic surgery, considering the advantage of minimal invasive surgery along with precision, we did a study to determine a practically better passage of hysterectomy in the management of benign diseases of the uterus, by comparing NDVH versus LAVH. This study also guides regarding the comparative outcome of LAVH and NDVH.

METHODS

It was an interventional study carried out in the obstetrics and gynaecology division of Rohilkhand Medical College and Hospital, Bareilly, over the period of one year (November 2019 to October 2020).

A total of 104 women having non-malignant gynaecological disorders, in need of hysterectomy, were studied, which were divided into two groups of 52 each by the lottery method where the first group underwent LAVH and the other had NDVH.

All the patients with Leiomyoma, adenomyosis, uterine polyp, endometriosis, DUB, iatrogenic cause of AUB and patients with DUB uterus with failed medical management were included, whereas this study excluded the patients having confirmed or suspected genital cancer, genital prolapse, undiagnosed BPV, pregnancy, patients with narrow vagina, uterine size exceeding 12 weeks, with adnexal masses, with prolapsed uterus, with restricted mobility of uterus and patients having previous pelvic surgery or having medical disorder like coagulation disorder, uncontrolled diabetes and hypertension as well as problems which may be aggravated during the procedure.

A written informed willingness was obtained from all women participants, after describing and making them understand, about the procedure and subjecting them to a thorough medical examination including PAP smear, endometrial biopsy and USG.

Both groups were closely watched during and after operation period and observations were recorded. The Intraoperative period was assessed for the type of anesthesia, surgery duration, amount of blood loss, uterine weight post procedure, surgical complications and conversion rate of the surgery. Similarly, the postoperative period was assessed for the average period of bladder catheter, vaginal drain and for hospital stay in days as well as post-operative complications and pain.

RESULTS

Overall, 104 cases were studied. Amongst 52 women for LAVH, one case belonged to LAVH + left salpingo-oophorectomy and one for LAVH + bilateral salpingo-oophorectomy whereas two were of LAVH + right salpingo-oophorectomy. The abdominal surgery or any other alternative sort of hysterectomy was not required for any of the operative procedures that had been performed before.

Mean age of patient was 48.5±9.48 years in LAVH whereas in NDVH it was 47.8±8.37 years (Table 1).

Table 1: Comparative demographic details of patients.

Procedure	LAVH (group A) (%)	NDVH (group B) (%)	Total
Number of patients	52 (50)	52 (50)	104
Age group (years)			0.838* (non significant)
31-40	8 (15.4)	13 (25)	
41-50	25 (48.1)	26 (50)	
51-60	12 (23.1)	10 (19.2)	
61-70	5 (9.6)	3 (5.8)	
>70	2 (3.8)	0 (0)	
Parity			0.986* (non significant)
2	21 (40.4)	18 (34.6)	
3	16 (30.8)	17 (32.7)	
4	12 (23.1)	11 (21.2)	
5	1 (1.9)	3 (5.8)	
6	2 (3.8)	3 (5.8)	

*P value; Not significant p>0.05

Fibroid and dysfunctional uterine bleeding were the dominant causes for hysterectomy in LAVH patients whereas in NDVH patients it was leiomyoma and dysfunctional uterine bleeding (Figure 1 and 2).

The average duration of surgery was 127.12 minutes (SD 12.58) in LAVH group, and 90.54 minutes (SD 5.89) in NDVH patients. Surgery in NDVH patients didn't took as much time as in LAVH, whereas the amount of blood loss was significantly lower in LAVH group.

The difference in duration of surgery in LAVH and NDVH appeared sufficiently great numberwise, with p <0.001.

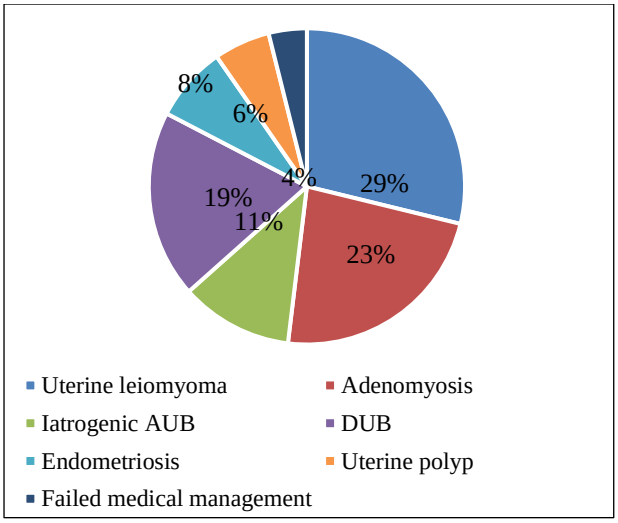

Figure 1: Indications- LAVH (group A).

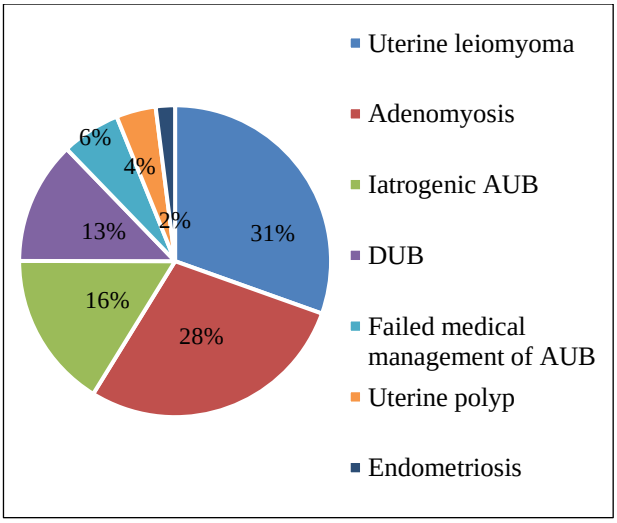

Figure 2: Indications- NDVH (group B).

Table 2: The comparison of pre operative characteristics of the study patients with respect to NDVH and LAVH.

Pre-operative characteristics	Group A LAVH	Group B NDVH	P-value
Mean duration of symptoms (months) ±SD	14.46±1.83	15.20±2.12	0.0595
Mean size of uterus in weeks ±SD	10.52±1.64	11.07±1.58	0.0846

Table 3: The comparison of intra operative characteristics of the study patients with respect to NDVH versus LAVH.

Parameters	Group-A (LAVH) (%)	Group-B (NDVH) (%)	Total	P-value
Anaesthesia				
General	52 (50)	4 (3.9)	56	<0.001
Regional	0	48 (46.2)	48	
Average duration of surgery (minutes)±SD	127.12±12.58	90.54±5.89		<0.001
Average blood loss in surgery (ML)±SD	89.23±7.37	108.56±7.14		0.638
Mean uterine weight (gm)	201.37±13.83	200.21±14.34		0.678
Complications				
Bladder injury	0 (0)	1 (1.9)		
Bowel injury	0 (0)	1 (1.9)		

Table 4: The comparison of post operative characteristics of the study patients with respect to non-descent vaginal hysterectomy NDVH, and laparoscopic assisted vaginal hysterectomy LAVH.

Parameters	Group-A (LAVH)	Group-B (NDVH)	P-value
Mean duration of catheter (days) (mean±SD)	1.50±0.61	1.62±0.60	0.333
Mean duration of vaginal drain (days) (mean±SD)	1.92±0.93	2.02±0.87	0.587
Mean duration of hospital stay (days) (mean±SD)	3.58 ±0.61	3.83±0.84	0.085
Complications			
PRBC transfusion (1 unit)	0 (0%)	1 (1.9%)	<0.001
UTI	1 (1.9%)	1 (1.9%)	

There was one case of each bladder and bowel injury, was found in patients who underwent NDVH and which was managed by primary repair at the time of surgery (Table 4).

DISCUSSION

In this study most of the patients for surgery happened to be of the common age group of 41 to 50 years and similar was noticed by Chang W, Sesti et al, and Soren SN as

well.[3,4,10] The average parity happened to be 3 in LAVH group whereas in NDLH it was 2, which commensurates with the respective groups of the study conducted by Goswami et al and Shiragur et al.[6,9] In this study, most common cause to force surgery in these two groups (LAVH 28.8% and 26.9% NDVH) were fibroid uterus of size 12-14 weeks or less, followed by adenomyosis (23.1% LAVH and 26.9% NDVH) which is in sync with the study conducted by Shiragur et al.[9] Whereas Goswami et al observed leiomyoma as the most prevalent indication for LAVH (32.5%) and AUB for the NDVH group (37.9%).[7]

Despite the same team of surgeon performing both the procedures, the average period of surgery in NDVH in the absence of debulking was 90.54±5.89 min. In comparison Soren et al reported a period of 65.44 min and that of Shiragur et al was100-200 min.[10] For LAVH group the mean duration was 127.12±12.58 min which was comparatively longer than NDVH. This observation was also made by Soren et al (83.12 min) and Goswami et al (172.3 ±12.58 min).[7]

In this study, the average bleeding in NDVH was 108.56±7.14ml whereas it was 100 ml in Bhadra et al's study.[6] On the other hand there was 89.23±7.37 ml blood loss in LAVH group. In this study, recuperation period in hospital after surgery in NDVH was for 3 days which was comparable with Chakraborthy et al's study, and 3 days in LAVH group as compared with 6 days in Shiragur et al and Soren et al.[5]

CONCLUSION

Maximum women, who need to have a hysterectomy, must be proposed to go for the vaginal approach subjected to it's technically practical and medically appropriate. In case of non-prolapsed uterus, vaginal hysterectomy is secure and reasonable as long as you are well versed with it's technique. Although the procedure of LAVH has an advantage of having comparatively less operative blood loss, this study shows NDVH has two distinct advantages of less operative time and use of preferable mode of anaesthesia i.e, regional anesthesia. Therefore NDVH, which doesn't cause scars as well, feels to be the better option of hysterectomy than LAVH.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Mukherjee S, Singh P, Bedi S. Laparoscopically assisted vaginal hysterectomy vs non-descent vaginal hysterectomy in the benign diseases of the uterus: an interventional study. Int J Reprod Contracept Obstet Gynecol 2023;12:3313-6.