

# Comparative Study of Non-descent Vaginal Hysterectomy with Total Abdominal Hysterectomy

Rubina Shrestha,<sup>1</sup> Subha Shrestha,<sup>1</sup> Satindar Ray<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynaecology, College of Medical Sciences-Teaching Hospital, Bharatpur, Chitwan, Nepal

## ABSTRACT

### Introduction

Hysterectomy is the most common operation performed by gynecologist worldwide. In the present era emphasis is given on minimal invasive surgery so Non-Descent Vaginal Hysterectomy (NDVH) has gained more interest over Total Abdominal Hysterectomy (TAH). NDVH has several benefits over TAH in terms of blood loss, operating time, post-operative complications, recovery and hospital stays.

The objective of the study was to compare the clinical outcome of NDVH over TAH with respect to operating time, blood loss, hospital stays, intraoperative and early postoperative complication and to find out the most efficient route for hysterectomy.

### Methods

The study was conducted at College of Medical Science-Teaching Hospital, Bharatpur, Chitwan, Nepal between May 2017- May 2020. Fifty cases each of NDVH and TAH group fulfilling the selection criteria were included in the study. Outcome was measured on the basis of operating time, blood loss, hospital stay and intra and post-operative complications.

### Results

Baseline characteristics were similar between both the groups. The most common indication for hysterectomy in both the group was fibroid uterus. There was no intra-operative complication in NDVH group but in TAH group bowel injury was encountered in 3 cases. The operating time, blood loss, hospital stay and post-operative complications were less in NDVH as compare to TAH

### Conclusions

NDVH is the better choice of surgery than TAH for the non-prolapsed uterus, size less than 12 weeks with benign pathology.

**Keywords:** non-descent vaginal hysterectomy; total abdominal hysterectomy.

**Correspondence:** Dr. Rubina Shrestha, College of Medical Sciences- teaching Hospital, Bharatpur-10, Chitwan, Nepal.  
Email: rubinashrestha2@gmail.com, Phone: + 977- 9849982644.

## INTRODUCTION

Hysterectomy is one of the most common surgeries performed by gynecologist worldwide next to cesarean section.<sup>1,2</sup> Abdominal route is preferred over vaginal route for non-prolapsed uterus even though multiple studies stating that the vaginal route is preferred to abdominal route.<sup>3</sup> The ease and convenience offered by a large abdominal incision and better operative field vision have led to preference of abdominal route over vaginal route. But, now as emphasis is on minimal invasive surgery so vaginal and laparoscopic route has gained interest even for non- prolapsed uterus.<sup>4,5</sup> NDVH is less invasive, scar less operation and cost effective for patient but it has its own limitation like difficult to approach through narrow vagina, adnexal pathology and in scarred uterus.<sup>6</sup> However, proper selection of the patient is a key factor to determine the success of NDVH. So, this study is done to know the clinical outcome between NDVH and TAH.

## METHODS

This study was retrospective study and was carried out to compare vaginal hysterectomy and abdominal hysterectomy in non-descent uterus. The main objective of this study was to compare the clinical outcome between NDVH and TAH with respect to operating time, blood loss, intra-operative and early post-operative complication and find out which is the most efficient route for hysterectomy in women with mobile non-prolapsed uterus of 12 weeks or less. The study was carried out at College of Medical Sciences, Bharatpur, Nepal, a tertiary care institute. The ethical clearance was taken from College of Medical Sciences and Teaching Hospital – Institutional Review Committee (COMSTH-IRC) with the reference number-COMSTH-IRC/2020-10024. Total 100 cases that underwent hysterectomy in between January

2018 to December 2019 who met the inclusion criteria were randomly selected out of which 50 cases underwent TAH and 50 cases underwent NDVH. Patient who underwent hysterectomy for benign lesion of uterus, completed family, gynecologic symptoms that justified hysterectomy and uterus size less than 12 weeks of gravid uterus were included in the study. Patients with uterine size more than 12 weeks, restricted mobility, pelvic organ prolapsed, and patient with complex adnexal mass were excluded from the study.

The patients detail history, clinical evaluation, investigation and pre-anesthetic check-up details were taken from history sheet. The patients detail operation notes were taken from case sheet and operative notes. Operating time for NDVH was calculated after incision of cervico-vaginal junction to closure of vault. Operating time for TAH was calculated from incision of skin to closure of skin incision. Data regarding age, parity, uterine size, indication of operation, estimated blood loss during intra-operative period was calculated using Gauze Visual Analogue,<sup>7</sup> any intra-operative complication, length of operation, time taken by patient to ambulate voluntarily, any complication, blood transfusion and duration of hospital stay was also recorded.

Post-operatively all the patients were prescribed an identical regime of analgesia and prophylactic antibiotics for 7 days. Febrile morbidity and any other post-operative complications such as haemorrhage, urinary tract infection, wound infection, vault infection, secondary suturing and any other complications were recorded. Statistical analysis was done by descriptive and inferential statistics using student unpaired 't' test, Chi square test. Data entry was done in excel and data analysis was done using software, SPSS. Data were analysed as graphs and charts.

## RESULTS

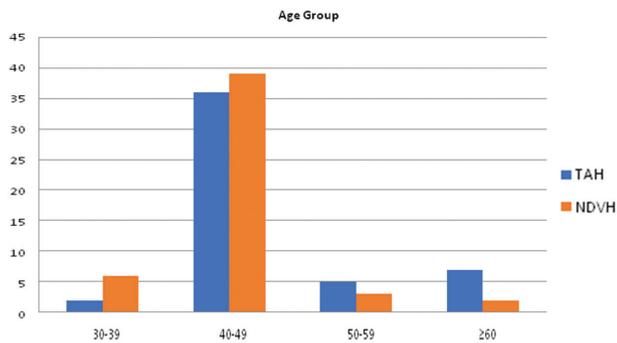


Fig 1: Distribution of cases according to age group.

Majority of the patients were in age group 40-49 years i.e 72% in TAH group and 78% in NDVH group. Most of the cases were multiparae with no significant differences in two groups.

Size of the uterus (in weeks)	TAH	NDVH	Total no of cases
6	6 (12%)	8(16%)	14(14%)
8	14 (28%)	16(32%)	30(30%)
10	19 (38%)	14(28%)	33(33%)
12	11 (11%)	12(24%)	23(23%)
Total	50(100%)	50(100%)	100(100%)

Most common indication for hysterectomy in both the groups was fibroid uterus, 52% in TAH group and 35% in NDVH group. Second most common indication was AUB followed by adenomyosis.

Indication of surgery	No of Cases in TAH(%)	No of cases in NDVH(%)
Fibroid	26(52%)	35(70%)
AUB	9(18%)	7(14%)
Adenomyosis	7(14%)	7(14%)
Endometriosis	4(8%)	0(0%)
Chronic cervicitis	0(0%)	1(2%)
Benign ovarian tumour	4(8%)	0(0%)
Total	50(100%)	50(100%)

Entire uterus was removed in 44 cases of NDVH without any difficulty, 5(10%) patients required bissection of uterus and 1(2%) cases required myomectomy for easy removal of uterus during NDVH.

Operative time (min)	Mean	SD	t-value	p-value
TAH	93	27.27	5.01	<0.0001 Highly significant
NDVH	69.28	19.4		

Blood loss(ml)	Mean	SD	t-test	p value
TAH	199.5	77.83	3.98	0.0001 Highly significant
NDVH	123.9	109.12		

In our study 12 % cases in TAH required blood transfusion and 6% cases of NDVH required blood transfusion post-operatively. There was no intra-operative complication in NDVH group whereas in TAH group 3 patients out of 50 had bowel injury due to dense adhesion during intra-operative period.

In this study majority of cases 82% had ambulated before 24 hours but in NDVH only 52% cases had ambulated before 24 hours and 24% had ambulated after 24 hours, p value is 0.0004 which was statistically significant.

In this study post operative complications was seen in 26% of patient in TAH group and in 14% in NDVH group. Urinary tract infection (UTI) was most commonly seen in NDVH group than TAH. Other complications were higher on TAH than NDVH group.

Post operative complication	No of cases in TAH(%)	NO of cases in NDVH(%)	Total no of cases (%)	P Value
None	37(74%)	43(86%)	80(80%)	0.008 Significant
Pyrexia	3(6%)	2(4%)	5(5%)	
Paralytic ileus	0	0(0%)	0(0%)	
UTI	1(2%)	5(10%)	6(6%)	
Wound Infection	4(8%)	0(0%)	4(4%)	
Resuturing	1(2%)	0(0%)	1(1%)	
Vault infection	4(4%)	0(0%)	4(4%)	

Hospital stay (days)	Mean	SD	t-test	p value
TAH	8.28	3.77	7.9	<0.0001 Highly significant
NDVH	4.06	0.23		

## DISCUSSION

Hysterectomy is the one of the major gynaecological surgeries performed worldwide. Around 70-80% of hysterectomies done for benign condition are through abdominal route, despite the evidence has showed the abdominal route have higher incidence of complication, longer length of hospital stay and greater hospital charges as compared to vaginal route.<sup>8</sup> Vaginal hysterectomy were usually performed for prolapsed uterus in past, but with introduction of hemisection, morcellation, increase enthusiasm and technical skills among gynaecologist, vaginal hysterectomy has also become a choice of surgery for benign non-prolapsed cases. The main support of uterus, the uterosacral and cardinal ligaments situated in close proximity to vaginal vault, can be easily divided to produce uterine descent.<sup>9</sup> In this era of minimal invasive surgery, patients are desperate to avoid large abdominal incision which has lead increase the interest and importance of NDVH as the scar less hysterectomy for benign condition. The

advantages of NDVH over TAH have prompted numerous investigations to recommend NDVH for women whose conditions permit the approach. This study of comparison between NDVH and TAH is also done with same interest.

In the present study, most of the patient were in age group 40-49 years of age and were multiparae, which were compatible to study done by Abrol S et al.<sup>10</sup> In present study most common indications for hysterectomy in both the group was fibroid uterus, followed by AUB and adenomyosis which was similar to study done by Mehta K. et al.<sup>11</sup> In present study mean uterine size in TAH group was 9.4 weeks and in NDVH group was 8.82 weeks. In a study done by Miskry T et al. the mean uterine size in TAH group was 6.9 weeks which was smaller than the NDVH group 7.8 weeks.<sup>12</sup> In present study 3 patients has bowel injury due to dense adhesion during intra-operative period in TAH group whereas no intra-operative complication was noted in NDVH group. In a study conducted by Somjita C et al. equal bladder injury was reported in both the groups and there was no ureteric and bladder injury.<sup>13</sup>

In present study mean blood loss in TAH group was 199.5 ml which was more than the NDVH group which was 123.9 ml. Even in the NDVH which required debulking for easy removal of uterus, mean blood was 147.5ml which is still

less than in TAH group. This is comparable to study done by Modi K et al.<sup>14</sup>

The mean operation time in our study was more in TAH group compared to NDVH group (93min vs 69.28min) and this was comparable to studies done by Benassi et al, Hwang et al.<sup>15,16</sup> Even in NDVH group which required debulking the mean operating time 84.5 min was less than in TAH.

In our study during post-operative period UTI was encountered in 10% in NDVH group which was more than in TAH group which was 4%. The incidence of pyrexia, wound infection, vault infection and secondary suturing was high in TAH as compared to NDVH which is similar to study done by Mehta K et al, Goswami et al, Chen B et al and .<sup>11,17,18</sup> In this study resuturing was needed in 2 % cases of TAH which was similar to study done by Bharatnur S.<sup>19</sup> Mc Cracken et al. in their study also concluded that intra-operative and post-operative morbidity were lesser in vaginal hysterectomy compared to abdominal hysterectomy and that vaginal hysterectomy is an acceptable method of hysterectomy despite previous belief that it is contraindication in certain conditions.<sup>20</sup>

In the present study most of the cases in NDVH, 82% were ambulatory in <24 hours while in TAH group most cases 52% were ambulatory in >24 hours. It is comparable to study done by Mehta K et al. where 66% were ambulatory in <24 hrs in NDVH group and most cases about 50 % were ambulatory after 48 hours in TAH group.<sup>11</sup> In our study mean duration of hospital stay in NDVH was 4.06 days while in TAH group mean duration of hospital stay was 8.28 days, which is similar to study done by Chuvan et al and Balakrishnan D et al.<sup>21,22</sup> A Cochrane review of 34 randomized trials of vaginal, abdominal and laparoscopic hysterectomy, in which 4,495 patient were included concluded that vaginal hysterectomy has the best outcomes among these routes.

## CONCLUSIONS

From the present study it is concluded that NDVH has less post operative morbidity, less operating time, blood loss, shorter length of hospital stay and early post-operative mobilization as compared to TAH. So, with proper selection of cases and trained gynecologist NDVH is better choice than TAH.

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