

# Evaluation of morbidity after vaginal hysterectomy and abdominal hysterectomy in non-descent cases

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## Abstract

**Background:** Vaginal hysterectomy has been found to be associated with less morbidity, less blood loss necessitating transfusion, shorter hospitalization and faster postoperative recovery than total abdominal hysterectomy. **Aim:** To evaluate morbidity after vaginal hysterectomy and abdominal hysterectomy in non-descent cases. **Material and Methods:** In this prospective observational study, a total of 100 cases requiring hysterectomy for enlarged uteri were randomly selected. Out of which, 50 cases underwent NDVH and 50 cases underwent total abdominal hysterectomy for same indications. **Results:** Mean operative time for NDVH group was 48.68 min and for abdominal group was 92.52 min. Only 2% of NDVH cases required blood transfusion postoperatively whereas, 46% cases of TAH required blood transfusion postoperatively. Mean duration of hospital stay for NDVH group was 5.96 days whereas for abdominal group was 9.10 days. All cases of NDVH were ambulated after 24 hrs whereas all cases of abdominal hysterectomy group were ambulated after 48 hrs. **Conclusion:** NDVH is associated with less blood loss during surgery and decreased postoperative morbidity. It also allows the patient to ambulate faster and patient's comfort is better as compared to abdominal hysterectomy. Thus, vaginal hysterectomy is a better option whenever it is feasible.

**Key Words:** Vaginal hysterectomy, abdominal hysterectomy, blood transfusion, hospital stay, ambulation

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## INTRODUCTION

Hysterectomy is the most commonly performed elective gynaecological surgery.<sup>1</sup> Although vaginal hysterectomy is associated with fewer complications and a faster recovery more than two thirds of the hysterectomies are done abdominally.<sup>2-4</sup> The obvious advantage of vaginal route over abdominal and laparoscopic in terms of

operative time, morbidity, duration of hospital stay, and cost has been examined by a number of authors in their studies.<sup>1,5</sup> The emphasis on minimally invasive surgery has led to resurgence of interest and importance of vaginal hysterectomy for non-prolapse indication that is non-descent vaginal hysterectomy (NDVH). Vaginal surgery is least invasive and results better postoperative quality of life. The last few years have seen growing indications for vaginal hysterectomy which is now preferred over abdominal hysterectomy. Vaginal hysterectomy has been found to be associated with less morbidity, less blood loss necessitating transfusion, shorter hospitalization and faster postoperative recovery than total abdominal hysterectomy (TAH). This study was conducted to evaluate morbidity after vaginal hysterectomy and abdominal hysterectomy in non-descent cases.

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## MATERIAL AND METHODS

In this prospective observational study, a total of 100 cases requiring hysterectomy for enlarged uteri were randomly selected. Out of which, 50 cases underwent NDVH and 50 cases underwent total abdominal hysterectomy for same indications.

### Sampling method

Simple random sampling method

### Inclusion criteria

- Uterine size not exceeding 12 weeks of gravid uterus
- Adequate uterine mobility
- Fibroid uterus
- Dysfunctional uterine bleeding
- Chronic cervicitis
- Adenomyosis
- Laparoscopic assisted vaginal hysterectomy
- Patients with previous 2 or more LSCS

### Exclusion criteria

- Uterine size more than 12 weeks of gravid uterus
- Restricted uterine mobility
- Pelvic organ prolapsed
- Patients with complex adnexal mass

### Sample size

It was calculated by considering allowable error of 20%.6 Using the formula,  $N=4pq/L^2$  where, p=proportion, q=100-p, L=allowable error and N= sample size. Thus,  $4 \times 50 \times 50 / (20 \times 50 / 100)^2 = 100$ . Thus, 50 in each group.

### Methodology

Institutional Ethical Committee approval was taken before commencement of the study. Written informed consent was taken from each patient. Before surgery, every patient was clinically evaluated and routine investigations were done which included complete blood count, urine analysis for albumin, sugar, microscopy, Blood sugar and blood grouping, Kidney function test, Chest x-ray, ECG, USG abdomen and pelvis and pap smear. Spinal anaesthesia was used in most cases. Vaginal hysterectomy was done by Haeney's technique. For abdominal hysterectomy, a suprapubic transverse incision was given. Operating time for vaginal

hysterectomy was calculated from incision at cervicovaginal junction to the completion of closure of vault. Operating time for abdominal hysterectomy was calculated from incision on the abdomen to the closure of skin incision. Intraoperative complications like adhesions, injury to bladder and bowel and haemorrhage were noted. The time taken for patient to ambulate voluntarily were noted. All patients were advised to ambulate early. Postoperatively, patients were noted for complications like fever, pain, bladder and bowel disturbances, bleeding and the abdomen wound was inspected in those patients who had undergone abdominal hysterectomy. The term haemorrhage was used to define those cases requiring laparotomy, laparoscopy and/or blood transfusion postoperatively. Blood loss was assessed by fall in hemoglobin postoperatively.

### Statistical analysis

Statistical analysis was done by descriptive and inferential statistics using Chi-square test and students unpaired t-test. Software used in analysis were SPSS 17.0 version and graph pad prism 5.0.  $p < 0.05$  was considered as level of significance.

## RESULTS

Majority of the patients were in the age group of 41 years to 50 years. In vaginal group, minimum age was 36 years and maximum age was 50 years, whereas, in abdominal group, minimum age was 36 years and maximum age was 55 years. Mean age in NDVH group was 43.2 years and in abdominal group was 44.28 years. The patients in both NDVH and abdominal group were having BMI in the range of 18-25 kg/m<sup>2</sup> and mean BMI for NDVH group was 24.27 kg/m<sup>2</sup>. Mean BMI for abdominal group was 24.23 kg/m<sup>2</sup>. Both NDVH and abdominal hysterectomy was common in para 3 (56% vs 46%) followed by para 4 (30% vs 36%), para 5 (6% vs 10%). Four patients were of para 2 in each group. Difference between two study groups with respect to parity was statistically not significant. 39 cases in NDVH group and 40 cases in abdominal group were without any surgical history. There was no statistical difference between two study groups.

Table 1: Baseline characteristics of patients

Characteristics	NDVH	TAH
Age years (Mean±SD)	43.20±2.74	44.28±4.13
BMI kg/m <sup>2</sup> (Mean±SD)	24.27±1.91	24.23±2.43
Parity	3.13	3.33
No. of patients with previous surgeries	11 (22%)	10 (20%)
No. of patients with medical problems	11	12

In this study, NDVH was done for 30% cases of uterine fibroid and TAH was done for 50% of cases (Table 2). Difference between two groups with respect to diagnosis was statistically not significant.

**Table 2:** Distribution of patients according to their diagnosis

Diagnosis	NDVH	TAH	X <sup>2</sup> value
Fibroid	15 (30%)	25 (50%)	9.19
Adenomyosis	13 (26%)	9 (18%)	
DUB	9 (18%)	7 (14%)	p=0.32 (>0.05)
Chronic cervicitis	9 (18%)	7 (14%)	Not Significant
Endometrial polyp with fibroid	2 (4%)	1 (2%)	
Adenomyosis with fibroid	0 (0%)	1 (2%)	
Cervical polyp with fibroid	2 (4%)	0 (0%)	

Mean operative time for NDVH group was 48.68 min and for abdominal group was 92.52 min which was significantly more as compared to NDVH group. Need for blood transfusion was significantly more in abdominal group as compared to NDVH group as blood loss was more in these cases. Only 2% of NDVH cases required blood transfusion postoperatively whereas, 46% cases of TAH required blood transfusion postoperatively ( $P < 0.00001$ ; Highly significant). Mean duration of hospital stay for NDVH group was 5.96 days whereas for abdominal group was 9.10 days. Difference between two groups with respect to hospital stay was statistically significant. All cases of NDVH were ambulated after 24 hrs whereas all cases of abdominal hysterectomy group were ambulated after 48 hrs. Difference between two groups was statistically not significant. Not a single case required exploratory laparotomy in both the groups.

**Table 3:** Intraoperative and postoperative factors

Factors	NDVH	TAH
Operation duration (min)	48.68±5.04	92.52±16.77
Blood transfusion required	10 (20%)	23 (46%)
Hospital stay (days)	5.96±0.49	9.10±2.65
Postoperative ambulation after 24 hr and before 48 hrs	50 (100%)	0 (0%)
Need for exploratory laparotomy	0	0

Out of 50 cases of NDVH group, 49 (98%) cases were without any intraoperative complications. One case was complicated due to adhesion. In abdominal group, 40 (80%) cases were without any intraoperative complications, whereas, 9 (18%) cases were complicated due to adhesions. Difference between two groups with respect to intraoperative complications was statistically significant. Out of 50 cases of NDVH, 33 (66%) patients were without any postoperative complications. Febrile morbidity (24%) was common in abdominal group. Secondary suturing was required in 5 cases of abdominal group.

**Table 3:** Comparison of intraoperative and postoperative complications in both groups

Complications	NDVH	TAH	X <sup>2</sup> value	p value
Intraoperative complications				
None	49 (98%)	40 (80%)	8.31	0.016 (<0.05) Significant
Bowel injury	0 (0%)	0 (0%)		
Bladder injury	0 (0%)	1 (2%)		
Adhesion	1 (2%)	9 (18%)		
Postoperative complications				
None	33 (66%)	15 (30%)	25.92	0.000 (<0.05) Significant
Febrile morbidity	8 (16%)	12 (24%)		
Urinary tract infections	4 (8%)	2 (4%)		
Respiratory tract infections	5 (10%)	5 (10%)		
Paralytic ileus	0 (0%)	4 (8%)		
Wound infection	0 (0%)	12 (24%)		
Vault hematoma	0 (0%)	0 (0%)		

## DISCUSSION

Abdominal incision and then morbidity associated with tissue trauma and damage to neurovascular bundles, and associated factors like obesity and medical disorders like Diabetes mellitus; hypertension makes the abdominal route less favorable. Vaginal surgery allows the surgeon to operate by the least invasive route of all, utilizing an anatomical orifice. Vaginal hysterectomy is an almost

entirely extra peritoneal operation. The peritoneum is opened to only a minimal extent and little packing and handling of the intestine is required, because of less manipulation of intestine, postoperative ileus is much less common than with the abdominal hysterectomy, thus oral intake and mobilization of the patient is earlier thus reducing the number of hospital stay. Furthermore, the morbidity associated with an abdominal incision is

avoided. The avoidance of an abdominal incision also reduces the depth and length of anesthesia. Mean operative time for NDVH group was 48.68 min and for abdominal group was 92.52 min which was significantly more as compared to NDVH group. Similarly, less mean operating time of vaginal than abdominal hysterectomy was noted by Hoffman *et al* study,<sup>7</sup> Magos *et al*,<sup>8</sup> Ambiyé study,<sup>9</sup> and by Sahoo S study.<sup>10</sup> In our study, only 2% of NDVH cases required blood transfusion postoperatively whereas, 46% cases of TAH required blood transfusion postoperatively (P<0.00001; Highly significant). In comparative analysis of hysterectomies, significant higher blood loss was observed during abdominal than vaginal hysterectomy by Aniulienė, *et al*<sup>11</sup> and Hoffman *et al* study.<sup>7</sup> Mean duration of hospital stay for NDVH group was 5.96 days whereas for abdominal group was 9.10 days. Difference between two groups with respect to hospital stay was statistically significant. In a study, by Sahoo S,<sup>10</sup> vaginal hysterectomy had advantage over abdominal with respect to short operating time, lower morbidity, less postoperative stay, less cost. Aniulienė *et al*<sup>11</sup> had experience that mean hospital stay was significantly shorter for vaginal hysterectomy as compared to abdominal. In the Hoffman *et al* study,<sup>7</sup> 3.6 days (vaginal) vs 5.1 days (abdominal) were noted. In Magos *et al* study,<sup>8</sup> 3.7 days (vaginal) were noted. In Ambiyé study<sup>9</sup> 4.4 days (vaginal) were noted. In our study, all cases of NDVH were ambulated after 24 hrs whereas all cases of abdominal hysterectomy group were ambulated after 48 hrs. Patients of vaginal hysterectomy ambulate earlier, take full diet by day 2, and pass urine as well as stools earlier.

## CONCLUSION

NDVH is associated with less blood loss during surgery and decreased postoperative morbidity. It also allows the patient to ambulate faster and patient's comfort is better as compared to abdominal hysterectomy. Thus, vaginal hysterectomy is a better option whenever it is feasible.

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