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*Original Research Article.*

# Non-Descent Vaginal Hysterectomy: Safety and Feasibility

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## ABSTRACT

**Introduction:** The rate of hysterectomy has varied between 6.1 and 8.6/1000 women of all ages. NDVH (Non- Descent Vaginal Hyterectomy) means removal of uterus with physiological descent and no prolapse via the vaginal route. Objective is to assess safety, feasibility of NDVH with respect to operative time, blood loss, intra operative and post - operative complications, hospital stay and Post-operative morbidity and to compare the above-mentioned variables in non-descent vaginal hysterectomy with the other two methods (VH and TAH).

**Materials and Methods:** This study was done in tertiary care hospital in Obstetrics and Gynaecology department. The study duration was 1 and ½ years. It was a prospective interventional study comprising of 180 cases. 60 cases undergoing NDVH and 60 cases undergoing TAH for similar indications and 60 cases undergoing vaginal hysterectomy with descent. All the patients with benign indications, physiological descent and uterus less than or equal to 14 weeks size were included in study group. And time taken for surgery, complications, post-operative morbidity and stay were observed in all patients.

**Results:** In our study, we found no difference in the intraoperative complications like haemorrhage requiring blood transfusion, accidental cysytotomy in all the three groups. Post-operative complications like febrile morbidity, wound infections were high in TAH (Total Abdominal Hysterectomy) group. Post-operative complications like febrile morbidity, wound infections, re-laparotomy, vault haematoma were significantly less (p value 0.0001) in NDVH group. Time taken for NDVH was significantly shorter (p value 0.0001) than TAH and VH (with descent). There was no difference in the time taken from application of first clamp till removal of the uterus in cases of NDVH, TAH and VH (Vaginal Hysterectomy) (with descent) group (p value 0.738). The fall in HB% in TAH and VH was more when compared to NDVH group (p value 0.002). Patients in NDVH age group ambulated earlier (p value 0.036). Post-operative stay in NDVH group was significantly shorter (p value-0.0001).

**Conclusion:** From our study, it can be said that for uterus less than equal to 14 weeks size, vaginal approach of removing the uterus has got better outcomes in terms of fewer febrile morbidity and infections, faster recovery, shorter operative time, early return to normal activity and shorter hospital stay and better patient satisfaction in comparison with hysterectomy performed by abdominal route.

**Keywords:** Non-Descent Vaginal Hysterectomy, Non-Descent Uterus, Total Abdominal Hysterectomy, Vaginal Hysterectomy.

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## INTRODUCTION

The rate of hysterectomy has varied between 6.1 to 8.6 per 1000 women of all ages.[1] "Vaginal route of hysterectomy for un-descended uterus is associated with fewer morbidities, lesser hospital stays and better patient satisfaction".[2] Hence vigorous attempts are being made to reduce the number of abdominal hysterectomy and replace them with vaginal hysterectomy.

Hence to maximize the proportion of hysterectomies performed vaginally in case of non-descent of uterus it becomes essential to find out the feasibility and safety of NDVH in our set up.

### AIMS AND OBJECTIVES

- To study vaginal hysterectomy in non-descent uterus with respect to:
  - Operative time, Intra operative blood loss, Intra operative and post-operative complications, Hospital stay, Post-operative morbidity
- To compare the above variables in non-descent vaginal hysterectomy with the other two methods [VH (with descent) and TAH].

## MATERIALS AND METHODS

### Study Period

This study was done in tertiary care hospital in Obstetrics and Gynaecology department. The study duration was 1 and ½ years (February 2014- July 2015). It was a prospective interventional study comprising of 180 cases. 60 cases undergoing NDVH and 60 cases undergoing TAH for similar indications and 60 cases undergoing vaginal hysterectomy with descent. All the patients with benign indications, physiological descent and uterus less than or equal to 14 weeks size were included in study group.

### CRITERIA FOR CASES OF NDVH

**Inclusion Criteria**

- Uterine size less than 14 weeks.
- Previous pelvic surgery-excluding previous 1 or 2 LSCS.
- Good Uterine mobility on per vaginum examination.
- Pathology confined to the uterus only & absence of any adnexal pathology on clinical examination.
- Pelvic inflammatory disease.
- Endometriosis.
- DUB.

**Exclusion Criteria**

- Uterine prolapse
- Malignancy-suspected or diagnosed
- Frozen pelvis

### CRITERIA FOR CASES OF TAH

**Inclusion Criteria**

- Uterine size less than 14 weeks.
- Previous pelvic surgery-excluding previous 1 or 2 LSCS.
- Good Uterine mobility on per vaginum examination.
- Pathology confined to the uterus only & absence of any adnexal pathology.
- Pelvic inflammatory disease.
- Endometriosis.
- DUB (Dysfunctional Uterine Bleeding).

**Exclusion Criteria**

- Uterine prolapse
- Malignancy-suspected or diagnosed

### CRITERIA FOR CASES OF VH

**Inclusion Criteria**

- Uterine size less than 14 weeks.
- Previous pelvic surgery-excluding previous 1 or 2 LSCS (Lower segment Caesarean section).
- Uterine prolapse
- Pathology confined to the uterus only & absence of any adnexal pathology.

**Exclusion Criteria**

- Malignancy-suspected or diagnosed
- Frozen pelvis

### METHODS

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 closure of skin incision. Vaginal hysterectomy was done by Haeney's technique and for abdominal hysterectomy, Richardsons method was used. All the pedicles were doubly clamped. Blood loss was estimated by preoperative and postoperative (day 2) haemoglobin and haematocrit measurement. Intra operative complications such as injury to bowel/bladder or ureter and haemorrhage was noted. Any difficulty in performing hysterectomy was noted. Any method for removal of large uterus like morcellation, bisection, coring if used were noted. Post operatively all patients were followed up for complications like wound infection, vault haematoma, febrile morbidity, haemorrhage, death. The term haemorrhage was used to define those cases requiring laparotomy, laparoscopy and/or blood transfusion post operatively. Duration of hospital stay was noted and calculated as number of days in hospital after the surgery including the day of surgery. The uterus, after weighing on scale was sent for histopathological examination.

**Table 1: Size of uterus in weeks in case of NDVH and TAH**

| SIZE OF UTERUS IN WEEKS | | | | |
|---|---|---|---|---|
| **Weeks** | **NDVH** | | **TAH** | |
| | **Number** | **Percentage** | **Number** | **Percentage** |
| **4** | 10 | 16.6% | 4 | 7% |
| **6** | 16 | 26.6% | 7 | 28% |
| **8** | 10 | 16.6% | 16 | 27% |
| **10** | 11 | 18.3% | 13 | 22% |
| **12** | 9 | 13.3% | 16 | 12% |
| **14** | 4 | 6.6% | 4 | 5% |
| **Mean Size of Uterus** | 8 ± 3.1 | | 8.2 ± 2.4 | |

**Table 2: Size of uterus in weeks in VH group**

| | **VH** | |
|---|---|---|
| **Weeks /E** | **Number** | **Percentage** |
| **Atrophic** | 37 | 61.67 |
| **Menopausal** | 1 | 1.67 |
| **4 week** | 17 | 28.33 |
| **6week** | 3 | 5 |
| **8 week** | 2 | 3.33 |
| **Total** | 60 | 100.00 |

**Table 3: Size of uterus in grams**

| | NDVH | | TAH | | VH | |
|---|---|---|---|---|---|---|
| **Weight(grams)** | **Number** | **Percentage** | **Number** | **Percentage** | **Number** | **Percentage** |
| **≤ 100** | 3 | 5.00 | 4 | 7% | 45 | 75% |
| **101-150** | 21 | 35.00 | 10 | 17% | 13 | 22% |
| **151-200** | 13 | 21.67 | 20 | 33% | 2 | 3% |
| **201-250** | 12 | 20% | 14 | 23% | 0 | 0% |
| **251-300** | 11 | 18.33% | 11 | 18% | 0 | 0% |
| **301-350** | 0 | 0.00 | 1 | 2% | 0 | 0% |
| **Mean Weight of Uterus** | 186.2 ± 68.3 | | 198.7 ± 56.7 | | 73.8 ± 40 | |

**Table 4: Time Taken for surgery**

| **Time Taken In Minutes** | **NDVH** | | **TAH** | | **VH** | |
|---|---|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** | **Number** | **Percentage** |
| **<60** | 25 | 41.66% | 2 | 3.33% | 2 | 3.33% |
| **60-120** | 35 | 58.33% | 55 | 91.66% | 58 | 96.7% |
| **>120** | 0 | 0.00% | 3 | 5.00% | 0 | 0.00% |
| **Chi Square: 48.821, Dof: 4, p value: 0.0001** | | | | | | |

**Table 5: Time taken from application of first clamp to removal of uterus**

| | NDVH | | TAH | | VH | |
|---|---|---|---|---|---|---|
| **Time Taken in Mins** | **Number** | **Percentage** | **Number** | **Percentage** | **Number** | **Percentage** |
| **≤30 min** | 25 | 41.66 | 22 | 36.66 | 24 | 40 |
| **31-45** | 24 | 40 | 20 | 33.33 | 22 | 36.66 |
| **46-60** | 11 | 18.33 | 15 | 25 | 13 | 21.66 |
| **61-75** | 0 | 0 | 2 | 3.33 | 1 | 1.66 |
| **76-90** | 0 | 0 | 1 | 1.66 | 0 | 0 |
| **Chi square :5.176Dof: 8 P value :0.738** | | | | | | |

**Table 6: Table showing comparison of intraoperative complications in all the three groups**

| **Intra Operative Complications** | **NDVH** | | **TAH** | | **VH** | |
|---|---|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** | **Number** | **Percentage** |
| **Haemorrhage** | 2 | 3.33% | 4 | 6.67% | 1 | 1.67% |
| **Bladder injury** | 1 | 1.67% | 0 | 0.00% | 0 | 0.00% |
| **Bowel Surgery** | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% |
| **No Complications** | 57 | 95.00% | 56 | 93.33% | 59 | 98.33% |
| **Chi Square: 10.01, Dof: 6, p value: 0.12** | | | | | | |

**Table 7: Post-Operative Complications**

| **Post-Operative Complications** | **NDVH** | | **TAH** | | **VH** | |
|---|---|---|---|---|---|---|
| | **Number** | **Percentage** | **Number** | **Percentage** | **Number** | **Percentage** |
| **Vault Haematoma** | 0 | 0.00% | 0 | 0.00% | 2 | 3.33% |
| **Wound Infection** | 1 | 1.67% | 10 | 16.67% | 0 | 0.00% |
| **Febrile morbidity** | 1 | 1.67% | 4 | 6.67% | 0 | 0.00% |
| **Haemorrhage** | 0 | 0.00% | 1 | 1.67% | 2 | 3.33% |
| **No Complications** | 58 | 96.67% | 45 | 75.00% | 56 | 93.67% |
| **Chi square: 29.95, Dof: 8, p value: 0.0002** | | | | | | |

## RESULTS

Here in this study mean size of uterus in weeks in patients undergoing NDVH was 8 +3.1 and TAH was 8.2 + 2.4. Most of the patients (61.67%) in VH group had atrophic uterus.

Mean weight of the uterus in grams in NDVH group was 186.2 ± 68.3 grams. In TAH group was 198.7 ± 56.7 grams, in VH group was 73.8 ± 40 grams.

Time taken for NDVH was significantly shorter (p value 0.0001) than TAH and VH. There were 5 cases of SUI in whom in 2 cases TOT fixation were done, in 3 cases kellys plication was done along with VH. There were 43 cases associated with cystocele and rectocele in whom anterior colporraphy and posterior colpoperineoraphy was done along with VH.

There was no difference in the time taken from application of first clamp till removal of the uterus in cases of NDVH, TAH and VH (with descent) group (p value 0.738).

There were 2(3.33%) cases of NDVH having haemorrhage and 4(6.67%) cases of TAH having haemorrhage and 1(1.67%) case of VH having haemorrhage requiring blood transfusion. There was one case of NDVH which got converted to TAH having a large fundal fibroid of 7x7 cm limiting its descent weighing 250 gm. There was 1(1.67%) case of bladder injury in NDVH group but it was not associated with previous history of surgery or LSCS. None of the cases had bowel injury. There was no difference in intraoperative complications in all the three groups (p value- 0.12).

Post-operative complications are significantly less (p value 0.0002) in NDVH group. In the present study post-operative complications like febrile morbidity, wound infection was high in TAH group. Relaprotomy was done in 1(1.67%) case in TAH group and 1(1.67%) in VH group due to haemorrhage. 10(16.67%) cases of TAH had wound infection in which 6 cases underwent resuturing.

The fall in HB% in TAH and VH was more compared to NDVH group (p value 0.002)

Patients in NDVH group ambulated earlier (p value 0.036). 66.67% of patients in NDVH group ambulated within 24-36 hours. Whereas only 18.33% in TAH group and 15% in VH group ambulated within 24-36 hours.

Most of the patients in NDVH group (50%) were discharged on 4$^{th}$ post-operative day. In VH group, 16.66% were discharged on 4$^{th}$ post-operative day. None of the patient in TAH group was discharged on 4$^{th}$ post-operative day. Patients in NDVH group had a significantly shorter hospital stay (p value-0.0001).

**Table 8: Preoperative and Postoperative haemoglobin**

| Mean Haemoglobin | NDVH | TAH | VH |
|---|---|---|---|
| **Pre-operative Haemoglobin** | 11 | 11.5 | 11.01 |
| **Post-Operative Haemoglobin (day 1 post-operative)** | 10.1 | 10.5 | 10.2 |
| **One way ANOVA, p-value: 0.002** | | | |

**Table 9: Ambulation**

| Ambulation (in Hours) | NDVH | | TAH | | VH | |
|---|---|---|---|---|---|---|
| | Number | Percentage | Number | Percentage | Number | Percentage |
| **24-36** | 40 | 66.67% | 11 | 18.33% | 9 | 15% |
| **≥37** | 20 | 33.33% | 49 | 81.66% | 51 | 85% |
| **Total** | 60 | 100.00% | 60 | 100.00% | 60 | 100.00% |
| **Chi Square: 6.6, Dof: 2, p value: 0.036** | | | | | | |

**Table 10: Postoperative stay**

| Postoperative stay (in days) | NDVH | | TAH | | VH | |
|---|---|---|---|---|---|---|
| | Number | Percentage | Number | Percentage | Number | Percentage |
| **4** | 30 | 50.00% | 0 | 0.00% | 10 | 16.66% |
| **5-6** | 26 | 43.33% | 0 | 0.00% | 18 | 30.00% |
| **7-10** | 4 | 6.66% | 41 | 68.33% | 32 | 53.33% |
| **>10** | 0 | 0.00% | 19 | 31.67% | 0 | 0.00% |
| **Total** | 60 | 100.00% | 60 | 100.00% | 60 | 100.00% |
| **Chi Square: 171.7, Dof: 8, p value: 0.0001** | | | | | | |

## DISCUSSION

The present study was done to find out the safety of NDVH and to compare the risk and complications with TAH and VH (with descent). TAH can be performed in uterus of any size and weight but for vaginal approach of removing the uterus, there are some limitations. The greatest limitation for a surgeon to perform vaginal hysterectomy is an enlarged uterus. However, the term "ENLARGED" uterus has not been defined exactly.

The American College of Obstetricians and Gynaecologists has stated that "vaginal hysterectomy can be best performed in patients with a mobile uterus of less than 12 week's gestational size and 280 grams".[3]With increase in uterine size (more than 12 weeks size /280 grams uterus) there is increase in post-operative febrile morbidity, operative time, perioperative blood loss.[4-7] While comparing the complications, we had no complications like bowel injury, ureteric injury, rectus sheath haematomas, peritonitis, thromboembolism.

In our study, post-operative complications like febrile morbidity (6.67%) and wound infections (16.67%) were high in TAH group. In NDVH group complications like febrile morbidity (1.67%), wound infections (1.67%) were low. This is well comparable with the study conducted by Nieboer TE et al written in the committee opinion of ACOG number 444, November 2009 that when comparing vaginal hysterectomy with abdominal hysterectomy there are fewer febrile episodes and unspecified infections.[6]

The reason for the increase in febrile morbidity and wound infection could be the cause because, of the fact, that the time taken for performing hysterectomy by abdominal route(TAH) took longer time than the vaginal route(NDVH) and in abdominal hysterectomy there is more exposure of peritoneal cavity to external atmosphere in comparison to vaginal hysterectomy.

Post-operative complications were significantly less (p value 0.0001) in NDVH group. The difference in mean pre-operative and

post-operative haemoglobin, in present study is 0.9% in all the three groups. Our study can be compared with Emile Dorai et al,[8]where mean fall in haemoglobin was 0.8% in all the three groups. The fall in HB% in TAH and VH (with descent) was more compared to NDVH group (p value 0.002). In our study, there was no difference in patients with haemorrhage requiring blood transfusion in hysterectomies performed by abdominal or vaginal route. Hence it can be said, looking to the other benefits of NDVH, it may be the preferable technique of removal of uterus of size ≤14 weeks. In our study time taken for NDVH was significantly shorter than TAH and VH (with descent). (p value 0.0001). There was no difference in the time taken from application of first clamp till removal of the uterus in cases of NDVH, TAH and VH (with descent) group. This may be because of the fact that the time taken for opening and closure of the abdomen contribute to increase in time for abdominal hysterectomy. And for VH group (with descent), the increase in time could be because of association with other procedures like TOT fixation, Kelly's plication, anterior colporraphy, posterior colpoperineoraphy.

In our study in NDVH group, we had 4 patients of 14 weeks size of uterus and the time taken for all of them was between 60-120 mins. In NDVH group, patients have more acceptance towards early ambulation because of psychological sense of wellbeing due to scare less surgery, and there is less bowel handling and less stretching of peritoneum and thus causes less pain. Whereas patients in TAH group, ambulated late because of the abdominal discomfort and pain at the stitch site. In patients of VH (with descent) group, ambulation was late, as many of them were associated with posterior colpo-perineorraphy (71.66%).

The mean post-operative stay, in patients undergoing hysterectomy by abdominal route is more than vaginal route which makes it more troublesome for the patients. This is well compared with the study conducted by Materson et al.[9] As there are more number of wound infections in TAH group; recurrent dressings, re suturing is required which is more debilitating for the patients. As, the patients in NDVH group ambulate early, there is a greater sense of well-being. As post-operative stay, in patients undergoing hysterectomy by vaginal route is comparatively less than the abdominal group, the cost of vaginal hysterectomy would be less. There will also be more vacant beds for the needy and it would decrease the burden on the hospital.

## CONCLUSION

Hence from our study it can be said that for uterus less than equal to 14 weeks size, vaginal approach of removing the uterus has got better outcomes in terms of fewer febrile morbidity and infections, faster recovery, shorter operative time, early return to normal activity and shorter hospital stay and better patient satisfaction in comparison with abdominal approach of hysterectomy.

## REFERENCES

1. Thomas G Stovall. Hysterectomy. Berek & Novak Gynecology,14 ed. Lippincott Williams &Wilkins.2007:805.
2. Sheth S S. The scope of vaginal hysterectomy. Eur J ObstetGynecolReprodBiol 2004;115: 224-230.
3. American College of Obstetrician and Gynecologists. Quality assurance in obstetrics and gynecology. Washington (DC): The College; 1989.
4. Ozgur H. Harmanli, Sharon Byun, Vani Dandolu, John P. Gaughan, M.H. Terry Grody; Vaginal hysterectomy for the enlarged uterus; Gynecolobstet Invest 2006;61:4-8.
5. Sahin Y studied Vaginal hysterectomy and oophorectomy in women with 12-20 weeks' size uterus. Department of Obstetrics and Gynecology, Faculty of Medicine, Erciyes University, Kayseri, Turkey. ActaObstetGynecol Scand. 2007;86 (11): 1359-1369.
6. Singh Abha, Bansal Shweta; vaginal hysterectomy for non-prolapsed uterus; The Journal ofObstetrics and Gynecology of India; J ObstetGynecol India Vol. 56, No. 2 : March/April 2006 Pg.: 152-155.
7. Peter Newbold, Mathew Vithayathil, KaviFatania, Wai Yoong; Is vaginal hysterectomy is equally safe for the enlarged and normally sized non-prolapse uterus? A cohort study assessing outcomes; Eur J ObstetGynecol Reprod Biol. 2015 Feb; 185:74-7. doi: 10.1016/j.ejogrb.2014.11.031. Epub 2014 Dec2.
8. Emile Dorai, David Soriane, Kimata, C Laplace, F Lecure. Vaginal hysterectomy for enlarged uteri, with or without laparoscopic assistance: Randomized study Obstet and Gynecol 2001;97:712-716.
9. Materson BJ, Ureteral injuries. In: Manual of gynecologic survey. 2nd ed.New York; Springer-Verlag, 1996 : 339-349.

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