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# Total abdominal hysterectomy versus non descent vaginal hysterectomy in benign uterine disorders: A comparative study

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**Abstract**
**Introduction:** Hysterectomy is the commonest surgery performed by abdominal, vaginal or laparoscopic method. Vaginal method has distinct health and economic benefits. It is an acceptable method of hysterectomy for non descent uterus.
**Methods:** A retrospective study conducted on 100 women who underwent hysterectomy for benign uterine disorders other than prolapse uterus in the department of OBG, Tertiary hospital, Coimbatore.
**Results:** Out of 100 patients, 60 patients underwent total abdominal hysterectomy (TAH) and 40 patients underwent non descent vaginal hysterectomy (NDVH). It was observed that intraoperative blood loss, duration of hospital stay, intra and postoperative complications were less in vaginal route.
**Conclusion:** NDVH is associated with less blood loss, quicker recovery, early mobilization, less duration of hospital stay than TAH. The post operative complications were less irrespective of increased operating time in NDVH. Therefore NDVH is safe and feasible in women requiring hysterectomy for benign conditions.

**Keywords:** NDVH, TAH, complications, benign uterine disorders

## Introduction
Hysterectomy is the commonest procedure performed by the gynaecologist [1]. It can be done by abdominal, vaginal and laparoscopic method. The factors which influence the route of hysterectomy for benign disorders are size of the uterus, width of vagina, accessibility to the uterus, extent of extrauterine disease, the need for concurrent procedures, surgeon's skill, available hospital resources, emergency or scheduled cases and preference of the patient [2]. Abdominal hysterectomy is the most common surgery performed worldwide. This method is used mainly for malignancies, large sized uterus and anticipated dense adhesions where removal of uterus is not possible through vaginal route [3]. Vaginal route for non descent uterus is an acceptable method in most benign gynaecological conditions including fibroids. The vaginal route has many advantages like better intra and postoperative course, less analgesic need, improved pain score, reduced hospital stay and better patient satisfaction. The technique of NDVH is not very different from vaginal hysterectomy. Gynaecologists can easily master this surgery.

## Methods
This retrospective study was conducted in department of obstetrics and gynaecology for a period of 12 months between January 2017 to December 2017 in the government medical college and ESI hospital, Coimbatore. 100 women who underwent hysterectomy for benign uterine disorders other than prolapse uterus were included in the study. Out of 100 patients, 60 underwent abdominal hysterectomy and 40 women had vaginal hysterectomy.

### Inclusion criteria
1. Non descent uterus with benign pathology
2. (AUB, fibroid, cervical polyp, adenomyosis )
3. Uterus with good mobility
4. Uterus size <16 weeks
5. Benign adnexal pathology

**Exclusion criteria**

1. Prolapse uterus
2. Uterus size >16 weeks
3. Uterus with restricted mobility
4. Narrow vagina and rigid perineum
5. Suspected or diagnosed malignancy
6. Complex adnexal mass

Detailed history, systemic and pelvic examination findings of the 100 women were analysed from the case sheets. Preoperative investigations, Pap smear, pelvic ultrasound and endometrial biopsy were done for all cases. The route of surgery was decided by the operating surgeon with the concurrence of patient after detailed discussion about both the procedures. The operating time was calculated for NDVH from cervicovaginal incision to the vault closure whereas for TAH from abdominal incision to complete abdominal closure. Intraoperative blood loss was noted by number of pads soaked and measuring the blood suctioned during the procedure. Intraoperative complications like hemorrhage and any visceral injuries were noted. All the women included in this study were given same antibiotic prophylaxis. Postoperative complications, pain score and duration of hospital stay were documented.

**Statistics**

Statistical analysis was done using SPSS program. Categorical variables are expressed as numbers and percentage. Categorical variables were analysed using Chi square test and normally distributed continuous variables were compared by unpaired t-test. P value less than 0.05 was considered as significant.

**Results**

**Table 1:** Age wise distribution

| Age in years | Abdominal route (N=60) | Vaginal route (N=40) |
|---|---|---|
| 30-35 | 2(3.3%) | 1(2.5%) |
| 36-40 | 4(6.7%) | 2(5%) |
| 41-45 | 22(36.7%) | 15(37.5%) |
| 46-50 | 26(43.3%) | 19(47.5%) |
| >50 | 6(10%) | 3(7.5%) |

p value >0.05

**Table 2:** Parity wise distribution

| Parity | Abdominal route | Vaginal route |
|---|---|---|
| Nulligravida | 2(3.3%) | 1(2.5%) |
| P1 | 5(8.3%) | 7(17.5%) |
| P2 | 14(23.4%) | 9(22.5%) |
| P3 | 21(35%) | 11(27.5%) |
| P4 | 18(30%) | 12(30%) |

p value >0.05

**Table 3:** Size of the uterus in gestational weeks

| Weeks | Abdominal route | Vaginal route |
|---|---|---|
| <10 weeks | 3(5%) | 18(45%) |
| 10-12 weeks | 20(33.3%) | 11(27.5%) |
| 12-14 weeks | 28(46.7%) | 8(20%) |
| >14 weeks | 9(15%) | 3(7.5%) |

p value <0.05

**Table 4:** Previous surgery

| Surgery | Abdominal route | Vaginal route |
|---|---|---|
| 1 LSCS | 5(8.3%) | 4(10%) |
| 2 LSCS | 6(10%) | 2(5%) |
| Previous pelvic surgery | 3(5%) | 1(2.5%) |

p value >0.05

**Table 5:** Indications of hysterectomy

| Indications | Abdominal route | Vaginal route |
|---|---|---|
| AUB | 15(25%) | 22(55%) |
| Fibroid | 37(61.7%) | 6(15%) |
| Adenomyosis | 2(3.3%) | 3(7.5%) |
| Adnexal mass | 3(5%) | 2(5%) |
| Endometrial hyperplasia | 2(3.3%) | 4(10%) |
| Chronic cervicitis | 1(1.7%) | 3(7.5%) |

p value <0.05

**Table 6:** Intraoperative and postoperative observation

| Factors | Abdominal route (Mean ± SD) | Vaginal route (Mean ±SD) | p Value |
|---|---|---|---|
| Duration of surgery | 59.2 ± 4.66 | 70.1±-4.92 | <0.05 |
| Blood loss | 100.6± 11.91 | 73.2±7.0 | <0.05 |
| Ambulation | 2.67± 0.18 | 1.56±0.15 | <0.05 |
| Pain score on day 3 | 2.91± 0.13 | 1.87±0.18 | <0.05 |
| Duration of hospital stay | 8.2±1.49 | 4.1±0.53 | <0.05 |

**Table 7:** Postoperative complications

| Complications | Abdominal route | Vaginal route | p Value |
|---|---|---|---|
| Fever | 9(15%) | 2(5%) | <0.05 |
| UTI | 3(5%) | 1(2.5%) | >0.05 |
| Respiratory infection | 2(3.3%) | 1(2.5%) | >0.05 |
| Wound gaping/ infection | 8(13.3%) | 1(2.5%) | <0.05 |
| DVT | 2(3.3%) | 0(0) | >0.05 |
| Blood transfusion | 10(16.7%) | 2(5%) | <0.05 |
| Vaginal discharge | 3(5%) | 1(2.5%) | >0.05 |
| Bladder injury | 2(3.3%) | 1(2.5%) | >0.05 |

Out of 100 women, 60 underwent abdominal hysterectomy and 40 underwent vaginal hysterectomy. None of the women in the vaginal group were converted to abdominal route. Age and parity were comparable in both vaginal and abdominal hysterectomy group (Table 1, 2). TAH was significantly more in women with large sized uterus. VH was significantly more in women whose uterine size less than 10 weeks (Table 3). No significant difference was observed in both groups with reference to previous surgery (Table 4). VH was significantly more in women with abnormal uterine bleeding (Table 5). Duration of surgery was significantly more in vaginal group. Blood loss was significantly more in TAH group. The mean pain score was less in vaginal group and these women were ambulated early. This was statistically significant when compared to abdominal group (Table 6). Postoperative complications like fever, wound infection or gaping and need for blood transfusion were significantly more in TAH group when compared to vaginal group (Table 7).

**Discussion**

In earlier days, most of the hysterectomies done for benign condition were through abdominal route. Vaginal hysterectomies were mostly reserved for women with prolapse uterus. Recently vaginal hysterectomies are commonly performed for non descent uterus [4, 5]. In our study, most of the patients were in the age group of 45-50 years and were multipara as comparable with the report of Kovac *et al*. [6] In present study, 45% of NDVH was performed for uterine size <10 weeks and 11% for uterine size 10-12 weeks which was comparable to the study by Chandana *et al*. [7] and Reiter *et al*. [8] We were able to remove uterus of size

>14 weeks vaginally without any difficulties. From the analysis, the common indication for NDVH was AUB followed by fibroid uterus as comparable to the study by Singh *et al*. [9] and Garg *et al*. [10] In this study operating time for NDVH was more when compared to TAH which was contrary to the observation of Goel *et al*. [11] Most of the operating surgeons were in learning process and less experienced with NDVH, so the operating time taken for NDVH was more when compared to TAH. But they were able to learn the technique of NDVH without much difficulty. In TAH group, the amount of blood loss was significantly more when compared to NDVH. Aniuliene *et al*. [12] and Chen *et al*. [13] have reported the same. The need for blood transfusion was found to be more in abdominal group when compared to vaginal group. This is similar to the report of Chandana *et al*. [7] In the present study, the intraoperative complication of bladder injury was not statistically significant in both the groups. This was contrary to the study by Dicker *et al*. [14] Dicker *et al*. [14] has observed more bladder injuries in vaginal group. According to the study, the febrile morbidity and wound infection were more in TAH group which was similar to study by Shanthini *et al*. [15] The hospital stay for NDVH was shorter than TAH group as compatible with Chen Bet *et al*. [13] study.

## Conclusion

NDVH is associated with less blood loss during surgery, less intra operative and post operative complications, early ambulation, quicker recovery and less post operative stay when compared to TAH. The advantages of NDVH are scarless surgery and less intraoperative manipulation which will prevent wound infection especially in obese patient. NDVH is safe and feasible in most of the women requiring hysterectomy for benign uterine conditions. The clinical outcome is found to be superior in NDVH when compared to TAH. The young gynaecologists should be trained in the technique of NDVH and should be encouraged to perform NDVH wherever feasible to benefit the women undergoing hysterectomy for benign pathology.

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