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A COMPARATIVE STUDY OF TOTAL ABDOMINAL HYSTERECTOMY WITH NON-DESCENT VAGINAL HYSTERECTOMY FOR TREATMENT OF BENIGN DISEASES

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Abstract

Background: Hysterectomy is one of the most frequently performed gynecological surgeries for benign uterine disorders. Total Abdominal Hysterectomy (TAH) has long been the standard approach, whereas Non-Descent Vaginal Hysterectomy (NDVH) offers a minimally invasive alternative.
Objective: To compare intraoperative and postoperative outcomes of TAH and NDVH in women with benign uterine diseases.
Methods: This prospective study was conducted over 18 months at Government Doon Medical College and Hospital, Dehradun, involving 122 women equally divided into TAH and NDVH groups. Parameters including operative time, blood loss, postoperative pain, ambulation, bowel activity, oral intake, and hospital stay were analyzed.
Results: NDVH showed significantly shorter operative time (63.4 vs. 89.3 min), lesser blood loss (79.5 vs. 151.8 mL), lower postoperative pain, faster ambulation, earlier bowel recovery, and shorter hospital stay (4.2 vs. 7.8 days) compared to TAH ($p < 0.001$).
Conclusion: NDVH is a safe, less invasive, and more efficient alternative to TAH for benign uterine conditions, offering faster recovery and reduced hospitalization.

Keywords: Non-descent vaginal hysterectomy, total abdominal hysterectomy, benign uterine disease.

Introduction

Hysterectomy, the surgical removal of the uterus, is one of the most frequently performed gynaecological procedures worldwide for the management of benign uterine diseases such as fibroids, adenomyosis, abnormal uterine bleeding, and endometriosis.[1] It not only provides definitive relief from symptoms but also significantly improves the quality of life in women who have completed their reproductive period. Among the various surgical techniques available, Total Abdominal Hysterectomy (TAH) and Non-Descent Vaginal Hysterectomy (NDVH) are the two most commonly practised approaches for benign uterine conditions.[2]

Total Abdominal Hysterectomy, though long regarded as the standard approach, involves an abdominal incision that allows direct visualisation of pelvic organs and facilitates management of associated pelvic pathology. However, it is associated with notable drawbacks such as longer

operative time, greater intraoperative blood loss, increased postoperative pain, delayed ambulation, and prolonged hospital stay.[3] These disadvantages often translate into increased morbidity and higher healthcare costs.

Non-Descent Vaginal Hysterectomy, on the other hand, involves removal of the uterus through the vaginal canal without an abdominal incision, even in non-prolapsed cases.[4] It has gained popularity as a minimally invasive procedure due to its numerous advantages—less blood loss, shorter surgical duration, minimal postoperative discomfort, early ambulation, and quicker return to normal activities.[5] The absence of an abdominal wound also minimizes wound-related complications and enhances overall patient satisfaction. However, NDVH demands adequate surgical expertise and may be technically challenging in cases of a large uterus, restricted mobility, or previous pelvic surgery.[6]

With increasing emphasis on patient-centred care, faster recovery, and cost-effective healthcare delivery, the trend is shifting towards minimally invasive techniques wherever feasible. Yet, many centres still prefer TAH due to surgeon familiarity and concerns regarding the technical demands of NDVH. Therefore, a direct comparison of intraoperative and postoperative parameters between the two methods remains clinically relevant.

The present comparative study was undertaken to evaluate and contrast the intraoperative duration, blood loss, postoperative recovery, and duration of hospital stay in patients undergoing NDVH and TAH for benign uterine diseases.

MATERIAL AND METHODS

This prospective observational study was conducted in the Department of Obstetrics and Gynaecology, Government Doon Medical College and Hospital, Dehradun, over a period of 18 months after obtaining ethical approval and informed written consent from all participants.

A total of 122 women undergoing hysterectomy for benign uterine conditions were enrolled and divided equally into two groups:

- **Group A:** Total Abdominal Hysterectomy (TAH) – 61 patients
- **Group B:** Non-Descent Vaginal Hysterectomy (NDVH) – 61 patients

The sample size was derived using standard statistical formula, taking the upper prevalence of hysterectomy in India (8.7%) and a 5% margin of error.

Inclusion criteria were women aged 40–70 years with benign uterine conditions such as fibroid, DUB, chronic cervicitis, or adenomyosis, with a uterus size <12 weeks and normal mobility. **Exclusion criteria** included uterine prolapse, genital malignancy, complex adnexal mass, restricted uterine mobility, prior major abdominal surgery or ≥1 LSCS, and bleeding disorders.

Clinical and surgical data were recorded using a structured proforma, including patient demographics, surgical indications, intraoperative parameters (duration, blood loss), and postoperative outcomes (pain, ambulation, bowel function, oral intake, complications, transfusion, and hospital stay). Data were entered in Microsoft Excel and analyzed using SPSS version 26. Quantitative variables were expressed as mean ± SD and compared using the Student's *t*-test, while qualitative data were analyzed using Chi-square or Fisher's exact test. A *p*-value <0.05 was considered statistically significant.

Results

This comparative study involved 122 women diagnosed with benign uterine diseases, equally divided into two groups: 61 patients who received Non-Descent Vaginal Hysterectomy (NDVH) and 61 who underwent Total Abdominal Hysterectomy (TAH).

Table 1: Age Distribution of Patients

Age Group (Years)	NDVH, n (%)	TAH, n (%)	Total, n (%)
≤ 40	10 (35.7)	18 (64.3)	28 (23.0)
41–50	39 (51.3)	37 (48.7)	76 (62.3)
51–60	11 (68.8)	5 (31.2)	16 (13.1)
61–70	1 (100.0)	0 (0.0)	1 (0.8)
>70	0 (0.0)	1 (100.0)	1 (0.8)
Mean ± SD	**46.4 ± 5.2**	**45.0 ± 5.7**	**45.7 ± 5.5**
Range (Years)	40–67	40–75	40–75
χ^2; p-value	**3.33; 0.505 (NS)**		

As shown in **Table 1**, the average age of patients in the NDVH group was 46.4 ± 5.2 years, while in the TAH group it was 45.0 ± 5.7 years, showing no statistically significant difference ($p > 0.05$). A significant proportion of patients (62.3%) fell within the 41–50 year age range, indicating that most hysterectomies occurred in the perimenopausal period. Thus, both groups were comparable in terms of age and baseline demographic characteristics.

Table 2: Intraoperative Parameters – Duration and Blood Loss

Parameter	NDVH (Mean ± SD)	TAH (Mean ± SD)	p-value
Intraoperative Time (minutes)	63.4 ± 5.2	89.3 ± 4.9	< 0.001
Intraoperative Blood Loss (mL)	79.5 ± 31.8	151.8 ± 35.9	< 0.001

Analysis of intraoperative parameters (**Table 2**) revealed a notable difference in both operative duration and blood loss between the groups. The mean operative time for NDVH (63.4 ± 5.2 minutes) was significantly shorter than that for TAH (89.3 ± 4.9 minutes) ($p < 0.001$). Similarly, the average intraoperative blood loss was significantly lower in NDVH (79.5 ± 31.8 mL) compared to TAH (151.8 ± 35.9 mL) ($p < 0.001$). These findings demonstrate that NDVH is associated with reduced operative duration and blood loss relative to the abdominal approach.

Table 3: Postoperative Recovery Parameters – Pain, Ambulation, Bowel Sound, and Oral Intake

Parameter	NDVH (Mean ± SD)	TAH (Mean ± SD)	p-value
Postoperative Pain Score	1.3 ± 1.1	4.8 ± 1.4	< 0.001
Postoperative Ambulation (hours)	19.6 ± 1.9	20.9 ± 2.3	0.002
Return of Bowel Sound (hours)	12.4 ± 5.4	22.9 ± 2.1	< 0.001
Oral Intake (hours)	13.7 ± 5.6	23.3 ± 2.4	< 0.001

Postoperative recovery outcomes (**Table 3**) showed that patients undergoing NDVH experienced a smoother and faster recovery. The mean postoperative pain score was 1.3 ± 1.1 in the NDVH group, markedly lower than 4.8 ± 1.4 in the TAH group ($p < 0.001$). Early mobilization occurred sooner in NDVH patients (mean ambulation time = 19.6 ± 1.9 hours) compared to those undergoing TAH (20.9 ± 2.3 hours) ($p = 0.002$). The return of bowel sounds was also earlier in NDVH (12.4 ± 5.4 hours) than in TAH (22.9 ± 2.1 hours) ($p < 0.001$), and the initiation of oral intake occurred significantly sooner in NDVH (13.7 ± 5.6 hours) than in TAH (23.3 ± 2.4 hours) ($p < 0.001$).

Table 4: Duration of Hospital Stay

Parameter	NDVH (Mean ± SD)	TAH (Mean ± SD)	p-value
Hospital Stay (days)	4.2 ± 0.5	7.8 ± 4.2	< 0.001

As summarized in **Table 4**, the mean duration of hospital stay was substantially shorter for NDVH patients (4.2 ± 0.5 days) compared with TAH patients (7.8 ± 4.2 days) ($p < 0.001$). The reduced hospitalization time underscores the faster recovery, lower morbidity, and decreased postoperative care requirements following NDVH.

Discussion

Hysterectomy remains one of the most frequently performed gynecological surgeries worldwide, serving as a definitive treatment for various benign uterine conditions such as fibroids, adenomyosis, and abnormal uterine bleeding.[1] Among the different surgical routes, Total Abdominal Hysterectomy (TAH) and Non-Descent Vaginal Hysterectomy (NDVH) are the most commonly practiced methods.[2] While TAH has traditionally been considered the standard approach due to its surgical visibility and familiarity, NDVH has gained increasing acceptance as a minimally invasive alternative, offering several postoperative advantages.[3]

The present comparative study assessed the surgical outcomes of Non-Descent Vaginal Hysterectomy (NDVH) and Total Abdominal Hysterectomy (TAH) in women with benign uterine diseases. Both groups were comparable in baseline characteristics such as age and clinical profile, ensuring that the observed differences primarily reflected the effect of the surgical route.

The intraoperative parameters in this study revealed that NDVH had a significantly shorter operative duration and lesser intraoperative blood loss compared to TAH. These findings are consistent with the studies by Mythily and Shanthi[7], Murali and Khan[8], and Nimbannavar et al.[9], all of which demonstrated that NDVH is a more time-efficient and less hemorrhagic procedure. The reduced operative time in NDVH can be attributed to minimal abdominal dissection, absence of abdominal closure, and direct access to the pelvic structures through the vaginal route. Moreover, decreased blood loss is likely due to the tamponade effect of the vaginal approach and better exposure of uterine pedicles.

Postoperative recovery parameters in this study strongly favored NDVH. Patients undergoing NDVH experienced significantly less postoperative pain, earlier mobilization, faster return of bowel sounds, and quicker initiation of oral intake. These outcomes are in close agreement with findings by Kanti et al.[10], Kumari et al.[11], and Priyadarshini et al.[12], who reported that NDVH minimizes postoperative discomfort and accelerates convalescence. Reduced postoperative pain and early ambulation contribute to enhanced recovery and fewer complications.

The duration of hospital stay was markedly shorter among NDVH patients, corroborating the observations of Mythily and Shanthi[7] and Reja et al.[13]. A shorter hospital stay not only enhances patient satisfaction and convenience but also translates into significant cost savings and a lower incidence of nosocomial infections.

From a clinical perspective, NDVH represents an evolution in hysterectomy techniques, providing outcomes comparable to abdominal and laparoscopic routes but with lower morbidity. Although laparoscopic-assisted vaginal hysterectomy (LAVH) and total laparoscopic hysterectomy (TLH) have gained popularity, NDVH remains the preferred route whenever technically feasible, due to its lower equipment dependency, reduced learning curve, and excellent safety profile.[14–16] Furthermore, the vaginal route eliminates the risk of abdominal wound infection, postoperative hernia, and cosmetic dissatisfaction associated with abdominal scars.

The feasibility of NDVH depends largely on uterine size, vaginal accessibility, pelvic mobility, and the surgeon's expertise. As reported by Nagar et al.[17] and Albhrawi et al.[18], even moderately enlarged uteri and cases with previous pelvic surgeries can be successfully managed by experienced surgeons through the vaginal route. This supports the recommendation that NDVH should be considered the first-line approach for benign uterine diseases in eligible women.

The current findings strengthen the evidence that NDVH offers a clear advantage over TAH in terms of operative efficiency, blood loss, postoperative recovery, and hospital stay—without compromising safety or effectiveness.

Conclusion

Non-Descent Vaginal Hysterectomy (NDVH) offers a safer, less invasive, and more efficient alternative to Total Abdominal Hysterectomy (TAH) for benign uterine diseases. It significantly reduces operative time, blood loss, postoperative pain, and hospital stay while promoting faster recovery and earlier ambulation. NDVH should be preferred whenever feasible, as it ensures comparable safety with superior postoperative outcomes and enhanced patient satisfaction.

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