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ORIGINAL ARTICLE

Clinical Profile and Surgical Outcome of Non-Descent Vaginal Hysterectomy

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ABSTRACT

Background: *Hysterectomy is one of the most commonly performed gynecological surgeries for benign uterine conditions in women. The choice of surgical route significantly influences perioperative outcomes and recovery time. Non-descent vaginal hysterectomy has gained attention as a minimally invasive alternative to abdominal hysterectomy in women without uterovaginal prolapse.* ***Objective:*** *This study aimed to evaluate the clinical profile and surgical outcomes of non-descent vaginal hysterectomy in women with benign uterine pathologies.* ***Methods & Materials:*** *This prospective observational study was conducted at the Department of Obstetrics and Gynaecology, Bangladesh Medical University, Dhaka, from January to December 2025. Sixty women with benign uterine conditions and uterine size ≤14 weeks who underwent non-descent vaginal hysterectomy were included. Demographic characteristics, indications, intraoperative findings, complications, hemoglobin drop and duration of hospital stay were recorded and analyzed using SPSS version 25.0.* ***Results:*** *The mean age of the participants was 46.8 ± 5.2 years. Symptomatic fibroid uterus (40.0%) and abnormal uterine bleeding (30.0%) were the most common indications for surgery. Debulking procedures were performed in 36.7% of the cases. The mean operative time was 64.5 ± 12.8 minutes and the mean estimated blood loss was 182 ± 48 ml. Intraoperative complications occurred in 8.3% of the patients. Postoperative complications were observed in 16.7% of patients, with febrile morbidity being the most frequent. The mean hospital stay was 3.2 ± 0.9 days.* ***Conclusion:*** *Non-descent vaginal hysterectomy is a safe, feasible and efficient surgical option for benign uterine conditions, offering low morbidity and rapid postoperative recovery.*

Keywords: *Non-descent vaginal hysterectomy, benign uterine disease, surgical outcome.*

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INTRODUCTION

Hysterectomy remains one of the most frequently performed major gynecological procedures worldwide for benign uterine conditions [1]. Globally, variations in surgical approach reflect differences in training, resource availability and institutional preferences [2]. Despite advances in minimally invasive techniques, abdominal hysterectomy continues to be widely practiced in many settings, particularly in low- and middle-income countries [3]. However, accumulating evidence suggests that vaginal hysterectomy is associated with better perioperative outcomes when feasible [4].

Non-descent vaginal hysterectomy (NDVH) has emerged as a safe and effective alternative for women with benign uterine pathology in the absence of uterovaginal prolapse [5]. Traditional teaching favored the abdominal route for non-prolapsed uteri, especially in cases with an enlarged uterus or prior cesarean section. Over time, refinement of surgical techniques, including uterine debulking methods such as bisection, morcellation and myomectomy, has expanded the applicability of NDVH to moderately enlarged uteri [6]. Contemporary gynecological literature increasingly supports the vaginal route as the preferred approach whenever technically possible [4,7].

Comparative studies have consistently demonstrated that NDVH is associated with reduced operative blood loss, shorter operative time, decreased postoperative pain and faster recovery compared to abdominal hysterectomy [1,8]. Furthermore, several investigations have reported lower postoperative morbidity and shorter hospital stay with the vaginal route [9,10]. In resource-limited settings, these advantages translate into reduced healthcare costs and improved patient satisfaction [11].

In South Asian populations, benign uterine conditions such as fibroid uterus, abnormal uterine bleeding and adenomyosis constitute the primary indications for hysterectomy [5,12]. The feasibility of NDVH in these indications has been explored in multiple institutional studies, which report favorable surgical outcomes even in uteri up to 14 weeks in size [13,14]. Evidence

from observational and comparative analyses indicates that appropriate case selection and surgical expertise are critical determinants of success [6,15].

Despite the growing body of literature, the uptake of NDVH remains suboptimal in many tertiary centers, partly due to concerns regarding intraoperative complications and technical challenges [16]. While randomized trials and meta-analyses support the safety of vaginal hysterectomy for benign disease, local data are essential to guide practice patterns and strengthen confidence among surgeons [4,17]. Additionally, variations in patient demographics, parity distribution, body mass index and prior cesarean section rates may influence operative outcomes, underscoring the need for context-specific evaluation [12,18].

In Bangladesh, hysterectomy continues to be commonly performed for benign gynecological disorders, yet published prospective data focusing specifically on NDVH are limited. Understanding the clinical profile of patients undergoing NDVH and evaluating intraoperative as well as postoperative outcomes in a tertiary academic setting are essential for optimizing surgical decision-making. Systematic documentation of operative time, blood loss, complication rates and hospital stay can provide evidence to reinforce the role of NDVH as a minimally invasive and cost-effective approach.

Therefore, the present study aimed to assess the clinical profile and surgical outcomes of non-descent vaginal hysterectomy in women with benign uterine conditions at a tertiary care university hospital. By prospectively evaluating perioperative parameters and complications, this study seeks to contribute to the existing literature and support evidence-based selection of the vaginal route for appropriately selected patients.

OBJECTIVES

The objective of this study was to evaluate the clinical profile and surgical outcomes of non-descent vaginal hysterectomy in women with benign uterine pathology.

METHODS & MATERIALS

This prospective observational study was conducted in the Department of Obstetrics and Gynaecology at Bangladesh Medical University (BMU), Dhaka, Bangladesh, from January to December 2025. A total of 60 women undergoing non-descent vaginal hysterectomy for benign gynecological conditions were included in the study.

Selection Criteria

Inclusion criteria:

- Women aged 35–60 years.
- Diagnosis of benign uterine pathology requiring hysterectomy.
- Uterine size not exceeding 14 weeks of gestation.
- Mobile uterus on clinical examination.
- Fitness for regional or general anesthesia.

Exclusion criteria:

- Uterovaginal prolapse.
- Suspicion or confirmation of malignancy.
- Uterine size greater than 14 weeks.
- Fixed or immobile uterus due to dense adhesions.
- Severe medical comorbidities preclude surgery.
- Refusal to participate in the study.

Data Collection Procedure

Data were collected prospectively using a structured and pretested case record form designed for the study. After obtaining written informed consent, eligible patients underwent detailed clinical evaluation, including comprehensive history taking, general physical examination and pelvic examination. Baseline demographic variables such as age, parity, body mass index and previous surgical history were recorded. Relevant laboratory investigations included complete blood count, blood grouping, renal function tests and urine analysis. Pelvic ultrasonography was performed in all cases to assess uterine size, adnexal pathology and endometrial characteristics.

All surgeries were performed following standard operative protocols for non-descent vaginal hysterectomy. Intraoperative parameters such as uterine size, requirement of debulking procedures, operative time, estimated blood loss and intraoperative complications were recorded immediately after surgery. Blood loss was estimated by measuring suction bottle contents and weighing surgical swabs. Operative time was calculated from incision to completion of vault closure.

Postoperative monitoring included daily clinical assessment for complications such as febrile morbidity, urinary tract infection, vault infection and hemorrhage. Hemoglobin levels were measured preoperatively and on the first postoperative day to calculate hemoglobin drop. The duration of hospital stay was documented from the day of surgery to discharge. Confidentiality of patient information was maintained by assigning unique identification numbers and data were stored securely.

Statistical Analysis

Data were entered and analyzed using SPSS version 25.0. Descriptive statistics were applied to summarize demographic variables, operative details and outcomes using mean ± standard deviation for continuous variables and frequencies with percentages for categorical variables. Results were presented in tables to ensure clarity and structured reporting.

RESULTS

Table I shows the socio-demographic and clinical profile of patients undergoing non-descent vaginal hysterectomy. The majority of women were aged 46–50 years (36.7%), followed by 41–45 years (30.0%), with a mean age of 46.8 ± 5.2 years. Most participants were multiparous, with 53.3% having parity 3–4 and 28.3% having parity ≥5. Regarding body mass index, 45.0% were overweight and 20.0% were obese, with a mean BMI of 26.4 ± 3.1 kg/m^2. A previous lower-segment cesarean section was absent in 73.3% of cases, while 23.3% had one prior cesarean section.

Table – I: Socio-Demographic and Clinical Profile of Patients Undergoing NDVH (*n* = 60)

Variable		Frequency (n)	Percentage (%)
Age Group (years)	35–40	8	13.3
	41–45	18	30.0
	46–50	22	36.7
	51–55	9	15.0
	>55	3	5.0
	Mean ± SD	46.8 ± 5.2 years	

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Parity	1–2	11	18.3
	3–4	32	53.3
	≥5	17	28.3
Body Mass Index (kg/m^2)	Normal (18.5–24.9)	21	35.0
	Overweight (25–29.9)	27	45.0
	Obese (≥30)	12	20.0
	Mean BMI ± SD	26.4 ± 3.1	
Previous LSCS	None	44	73.3
	One	14	23.3
	Two	2	3.3

Table II presents the indications for non-descent vaginal hysterectomy. Symptomatic fibroid uterus of less than 14 weeks in size was the most common indication (40.0%), followed by abnormal uterine bleeding of non-malignant origin (30.0%). Adenomyosis accounted for 13.3% of cases, while endometrial hyperplasia without atypia represented 8.3%. Chronic pelvic pain due to benign pathology and small benign ovarian cysts were less frequent indications, comprising 5.0% and 3.3% respectively.

Table – II: Indications for Non-Descent Vaginal Hysterectomy (*n* = 60)

Indication	Frequency (n)	Percentage (%)
Symptomatic fibroid uterus (<14 weeks)	24	40.0
Abnormal uterine bleeding (non-malignant)	18	30.0
Adenomyosis	8	13.3
Endometrial hyperplasia (without atypia)	5	8.3
Chronic pelvic pain (benign pathology)	3	5.0
Ovarian cyst (benign, ≤5 cm)	2	3.3

Table III describes the intraoperative characteristics of the study population. Uterine size was ≤10 weeks in 45.0% of patients, 11–12 weeks in 35.0% and 13–14 weeks in 20.0%. Debulking procedures were required in 36.7% of cases, most commonly bisection (18.3%), followed by myomectomy (11.7%) and morcellation (6.7%). The mean operative time was 64.5 ± 12.8 minutes and the mean estimated blood loss was 182 ± 48 ml. Intraoperative complications were absent in 91.7% of patients, while hemorrhage exceeding 500 ml occurred in 5.0%, bladder injury in 1.7% and conversion to laparotomy in 1.7%.

Table – III: Intraoperative Characteristics (*n* = 60)

Variable		Frequency (n)	Percentage (%)
Uterine Size	≤10 weeks	27	45.0
	11–12 weeks	21	35.0
	13–14 weeks	12	20.0
Debulking Procedure Required	No	38	63.3
	Yes	22	36.7
	Bisection	11	18.3
	Myomectomy	7	11.7
	Morcellation	4	6.7
Mean Operative Time ± SD (minutes)		64.5 ± 12.8	
Mean Estimated Blood Loss ± SD (ml)		182 ± 48	
Intraoperative Complications	None	55	91.7
	Hemorrhage (>500 ml)	3	5.0
	Bladder injury	1	1.7
	Conversion to laparotomy	1	1.7

Table IV presents the postoperative outcomes and duration of hospital stay. Postoperative complications were not observed in 83.3% of cases. Febrile morbidity occurred in 6.7%, urinary tract infection in 5.0%, vault infection in 3.3% and secondary hemorrhage in 1.7% of patients. The mean postoperative hemoglobin drop was 1.1 ± 0.6 g/dL. Most patients (68.3%) were discharged within three days and the mean hospital stay was 3.2 ± 0.9 days.

Table – IV: Postoperative Outcome and Hospital Stay (*n* = 60)

Variable		Frequency (n)	Percentage (%)
Postoperative Complications	None	50	83.3
	Febrile morbidity	4	6.7
	Urinary tract infection	3	5.0
	Vault infection	2	3.3
	Secondary hemorrhage	1	1.7
Mean Postoperative Hemoglobin Drop ± SD (g/dL)		1.1 ± 0.6	
Hospital Stay (Days)	≤3	41	68.3
	4–5	17	28.3
	>5	2	3.3
	Mean hospital stay ± SD	3.2 ± 0.9	

DISCUSSION

The present prospective observational study evaluated the clinical profile and surgical outcomes of non-descent vaginal hysterectomy in 60 women with benign uterine conditions. The findings demonstrate that NDVH is feasible, associated with acceptable operative time and blood loss and characterized by low intraoperative and postoperative complication rates. Most patients were discharged within three days, reflecting favorable recovery profiles in a tertiary care setting.

In this study, the majority of women were in the 41–50 year age group, with a mean age of 46.8 years. This age distribution is consistent with the reproductive and perimenopausal age group commonly affected by benign uterine disorders requiring hysterectomy. Kumari and Kundu reported that hysterectomy in India is most frequently performed among women in their forties, largely due to symptomatic fibroids and abnormal uterine bleeding [12]. Similarly, Begum et al. observed that NDVH is predominantly undertaken in multiparous women in the fourth and fifth decades of life [5]. The high proportion of multiparous women in the present study further supports the established association between parity and eligibility for vaginal route surgery.

Symptomatic fibroid uterus was the leading indication for NDVH in this cohort, followed by abnormal uterine bleeding and adenomyosis. These findings align with the observations of Chaminda et al., who identified fibroid uterus as the most frequent indication for NDVH in their institutional study [13]. Balakrishnan and Dibyajyoti also demonstrated that fibroids and dysfunctional uterine bleeding account for the majority of cases selected for vaginal hysterectomy [8]. The inclusion of uteri up to 14 weeks in size in the present study reflects evolving surgical confidence in managing moderately enlarged uteri via the vaginal route.

Debulking procedures were required in over one-third of patients, most commonly uterine bisection. This proportion is comparable to findings by Mehla et al., who reported frequent use of debulking techniques to facilitate the removal of enlarged uteri vaginally [6]. Saha et al. emphasized that appropriate utilization of bisection and morcellation enhances the feasibility of NDVH without increasing morbidity [15]. The current study supports these assertions, as the use of debulking did not translate into a higher complication rate.

The mean operative time of approximately 65 minutes and the mean estimated blood loss of 182 ml in this study are consistent with previous literature. Rosy et al. demonstrated that NDVH is associated with shorter operative duration and reduced blood loss compared to abdominal hysterectomy [9]. Goswami et al. similarly reported lower intraoperative blood loss in the vaginal group when compared to the abdominal approach [10]. These findings reinforce the efficiency of NDVH when performed by experienced surgeons.

Intraoperative complications were infrequent, with hemorrhage in 5% and isolated cases of bladder injury and conversion to laparotomy. These rates are comparable to those reported in observational studies by Joseph and Preethi, who documented low rates of visceral injury and conversion in NDVH [14]. A systematic review by Lee et al. concluded that vaginal hysterectomy is associated with fewer perioperative complications compared to other routes for benign disease [17]. The high proportion of complication-free procedures in the present study further substantiates the safety profile of NDVH.

Postoperative morbidity was minimal, with febrile morbidity and urinary tract infection being the most common complications. These findings are in agreement with Tiwari et al., who observed lower postoperative morbidity following NDVH compared to abdominal hysterectomy [1]. Ekanayake et al. also highlighted reduced postoperative discomfort and earlier mobilization in patients undergoing vaginal hysterectomy [11]. The mean hemoglobin drops of 1.1 g/dL and short hospital stay of 3.2 days in this study indicate limited physiological impact and rapid recovery.

The majority of patients were discharged within three days, underscoring the advantages of the vaginal route in terms of shorter hospitalization. Aarts et al., in a Cochrane review, recommended vaginal hysterectomy as the preferred approach whenever feasible due to reduced hospital stay and faster return to normal activity [4]. The American College of Obstetricians and Gynaecologists similarly advocates for the vaginal route as the first choice for benign conditions in suitable candidates [7]. The present findings are consistent with these international recommendations.

Collectively, the results of this study affirm that NDVH is a safe, effective and resource-efficient surgical option for benign uterine pathology in appropriately selected patients. The favorable operative metrics and low complication rates observed in this tertiary care setting support broader adoption of NDVH in similar contexts. Strengthening surgical training and promoting careful case selection may further enhance outcomes and reduce reliance on more invasive approaches.

CONCLUSION

Non-descent vaginal hysterectomy is a safe and effective surgical approach for benign uterine conditions in appropriately selected women. The procedure demonstrated acceptable operative time, minimal blood loss, low complication rates and short hospital stay. With adequate surgical expertise and careful patient selection, NDVH can serve as a preferred minimally invasive alternative to abdominal hysterectomy in tertiary care settings.

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Conflicts of interest: *There are no conflicts of interest.*

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