

# Hysterectomy by Vaginal Route: Not a Pressure

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## ABSTRACT

**Introduction:** Vaginal route of hysterectomy is a safe procedure with less morbidity and hospital stay. So, there is a need to expand the indication for vaginal hysterectomy beyond uterovaginal prolapse.

**Aim:** To determine the feasibility and outcome of nondescent vaginal hysterectomy (NDVH) and to assess the pre- and post-operative complications, duration of surgery, and hospital stay.

**Materials and methods:** A prospective observational study was conducted between 2012 and 2014 at a tertiary care center. A total of 256 patients satisfying the selection criteria of hysterectomy for benign gynecological conditions, uterus size <16 weeks, and excluding stage IV endometriosis, genital tract malignancy, and uterine prolapse were included. The NDVH was performed by the standard technique, and the following parameters of age, parity, indication for surgery, duration of surgery, intraoperative and postoperative complications, and hospital stay were recorded. The data were analyzed using Statistical Package for the Social Sciences version 16.0 by frequency and percentage analysis and Chi-square test.

**Results:** All 256 patients were analyzed. The mean age was  $44.4 \pm 6.1$  years; fibroid uterus was the commonest indication. About 89.4% had a uterine size  $\leq 12$  weeks and 59% had uterine volume  $< 200 \text{ cm}^3$ . The mean duration of surgery was  $83.5 \pm 11.0$  minutes; salpingo-oophorectomy was performed in 25.8% of the patients. Intraoperatively, 1.2% had bladder injury and 0.4% required conversion to laparotomy for pelvic hematoma. The mean duration of hospital stay was  $4.9 \pm 2.2$  days, and the mean pain score in numerical rating scale pain scale was  $3.0 \pm 0.3$ . Intraoperative blood transfusion was required in 1.9% of the patients only.

**Conclusion:** The NDVH is a safe and feasible procedure for benign gynecological disorders.

**Clinical significance:** The NDVH is a boon in this technosavvy era by reducing the morbidity and promising early return to work.

**Keywords:** Benign gynecological disorders, Hysterectomy, Nondescent vaginal hysterectomy, Nonprolapsed uterus.

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## INTRODUCTION

Hysterectomy is one of the frequently performed surgeries in gynecology worldwide, only second to cesarean section,<sup>1</sup> even though vaginal route is associated with lower morbidity, less operative time, and faster recovery. The vaginal abdominal or laparoscopic uterine excision (VALUE) study suggested that 67% of surgeons still prefer abdominal approach, especially when dealing with pelvic pathology or adnexal removal.<sup>2</sup>

## AIM

The aim of this study was to determine the feasibility and outcome of nondescent vaginal hysterectomy (NDVH) and assess the intraoperative and postoperative complications, duration of surgery, and hospital stay with NDVH.

## MATERIALS AND METHODS

This was a prospective observational study conducted at the Department of Obstetrics and Gynecology at a tertiary care center from July 2012 to July 2014. A total of 256 cases fulfilling the inclusion criteria of definitive indication for hysterectomy for benign gynecological disorders, uterine size up to 16 weeks were included. Women with uterine size more than 16 weeks, stage IV endometriosis, extensive pelvic adhesions, genital tract malignancy, uterine prolapse, and previous pelvic surgery other than sterilization were excluded. The baseline characteristics like age, parity, indication for hysterectomy, uterine size, intraoperative details like type of anesthesia, need for blood transfusion, visceral injury, and postoperative complications were recorded.

The NDVH was performed under regional or general anesthesia. A circular incision was made around the cervix; urinary bladder was pushed upward after

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cutting the pubovesicocervical ligament. The anterior and posterior pouches were opened. The uterosacral and Mackenrodt's ligaments were clamped, cut, and ligated bilaterally. Then, bilateral uterine vessels were secured after clamping, cutting, and ligating. In uteri of larger size with fibroid, adenomyosis, volume reduction techniques of bisection, myomectomy, or intramyometrial coring were performed alone or in combination. The third clamps were placed on cornual structures (round ligament, fallopian tube, ovarian ligament) or infundibulopelvic ligament, if ovary is removed. The vault was closed after removing the uterus and securing hemostasis.

### Statistical Analysis

The data were analyzed with Statistical Package for the Social Sciences version 16.0. For categorical data, frequency analysis and percentage analysis were used. For continuous variables, mean and standard deviation were used. To find the significance, chi-square test was used. The p-value <0.05 was considered as statistically significant.

### RESULTS

All 256 patients enrolled in the study were analyzed. The mean age of our patients was  $44.4 \pm 6.1$  years, and the mean parity score was  $2.4 \pm 0.9$ . The most common indication for NDVH was fibroid uterus. Fibroid uterus was the commonest indication for surgery (Table 1). About 89.4% of our patients had uterine size  $\leq 12$  weeks, and 59% of the patients had uterine volume  $< 200 \text{ cm}^3$ . In 87.9% of the patients, NDVH was performed under spinal anesthesia. For reducing the volume of the uterus, 48.4% required bisection, 34% had myomectomy, 12.9% required coring, and uterus was removed *in toto* in 4.7% of the patients. In 57.8% of the patients, bilateral salpingectomy and in 25.8% salpingo-oophorectomy were performed. The mean duration of surgery was  $82.5 \pm 11.0$  minutes. In our study, 4 (1.6%) patients had intraoperative complications, which includes 3 (1.2%) patients with bladder injury who were managed by vaginal route itself and 1 (0.4%) with pelvic hematoma and was converted into laparotomy. The mean blood loss was 330 mL, and 1.9% required blood transfusion. The mean hospital stay was  $4.9 \pm 2.2$  days, with 57.4% having duration of stay less than 5 days. In

the postoperative period, 14 (5.5%) patients had morbidity and of them 3 required prolonged catheterization, 7 patients developed urinary tract infection, and remaining 4 patients had respiratory tract infection. In the numerical rating scale pain scale, the mean pain score was  $3.0 \pm 0.3$ .

### DISCUSSION

Despite lower morbidity and less operating time for NDVH, a surgeon's reluctance to perform NDVH due to lack of training or fear of increased blood loss, when dealing with larger uteri, may contribute to hysterectomy by other routes. Prior to choosing the route of hysterectomy, physicians should consider how the procedure can be done safely and cost-effectively to fulfill the medical needs of the patient.<sup>3</sup>

According to the American College of Obstetricians and Gynecologists (ACOG), hysterectomy by vaginal route is preferred up to 12 weeks size.<sup>4</sup> However, the size of the uterus alone need not be the criteria, as it also depends on the expertise of the surgeon. In our study, NDVH was performed up to 16 weeks size without any complications, as we had the expertise of volume reduction techniques like myomectomy, bisection, and coring, or a combination of these. Sheth and Shah<sup>5</sup> observed that hysterectomy was always feasible through vaginal route for uteri less than 12 weeks size, and those with more than 12 weeks size require expertise to perform the surgery. They also observed that the uterine volume up to  $300 \text{ cm}^3$  was feasible, and, if more than  $300 \text{ cm}^3$ , extra effort was needed to perform the procedure. This is in par with our study. We did not include previous surgeries other than sterilization unlike Ray et al study,<sup>6</sup> as the surgeries were performed by surgeons of varying caliber, and hysterectomies by other routes were also performed equally.

The decision to perform salpingo-oophorectomy electively should not be influenced by the chosen route of hysterectomy and is not a contraindication to perform NDVH.<sup>3</sup> The same principle was followed even in our study and we did not use laparoscopic assistance for any of the patients. The ACOG recommends laparoscopic assistance only for difficult oophorectomy during vaginal hysterectomy.<sup>7</sup> The failure rate with vaginal route is 3 to 4%.<sup>8</sup>

The mean duration of surgery was more when compared with various other studies. This might be due to the surgery being performed by hierarchy of faculty of varying calibers, as this study was conducted in a teaching hospital. Also, more time was required in patients with large volume of the uterus, as we had included uteri up to 16 weeks size unlike other studies including up to 12 weeks only. Ray et al,<sup>6</sup> in their study, observed the

**Table 1:** Indications for NDVH

Characteristics	%
Fibroid uterus	28.5
Dysfunctional uterine bleeding	27.7
Adenomyosis	26.95
Benign adnexal mass	1.95
Chronic cervicitis	14.8

mean time of 72 minutes, but Garg et al<sup>9</sup> required only 41 minutes. We also observed that the pain score was less and, hence, the need for analgesics was reduced and promoted early ambulation and reduced postoperative morbidity and duration of stay in the hospital. Another advantage with NDVH that we observed in our study was that the amount of blood loss was considerably less, and only 1.9% required blood transfusion. Overall, NDVH is both patient- and doctor friendly, if patients are selected properly. The limitation of our study was surgery being performed by surgeons of varying calibers, and the cost-effectiveness could not be analyzed as the study was conducted in a teaching center.

### CONCLUSION

Hysterectomy by vaginal route is a safe, cost-effective procedure with less morbidity, and should be preferred in women requiring hysterectomy for benign gynecological conditions. So, hysterectomy by vaginal route is “a pleasure and not a pressure.”

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