

## NON-DESCENT VAGINAL HYSTERECTOMY FOR BENIGN GYNAECOLOGICAL DISEASE – A PROSPECTIVE STUDY

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### ABSTRACT

#### OBJECTIVE

To assess safety and feasibility of non-descent vaginal hysterectomy for benign gynaecological disease.

#### METHODS

A prospective study was conducted at the Department of Obstetrics and Gynaecology of P K Das Institute of Medical Sciences from January 2013 to December 2013. An effort was made to perform hysterectomies vaginally in women with benign or premalignant conditions in the absence of prolapse. A suspected adnexal pathology, endometriosis, immobility of uterus, uterus size more than 16 weeks was excluded from the study. Vaginal hysterectomy was done in usual manner. In bigger size uterus, morcellation techniques like bisection, debulking, coring, myomectomy, or combination of these were used to remove the uterus. Data regarding age, parity, uterine size, estimated blood loss, length of operation, intraoperative and postoperative complications and hospital stay were recorded.

#### RESULTS

A total of 100 cases were selected for non-descent vaginal hysterectomy. Among them, 97 cases successfully underwent non-descent vaginal hysterectomy. Majority of the patients (55%) were in age group 40-45 yrs. Four patients were nulligravida and eight patients had previous LSCS. Uterine size was  $\leq 12$  weeks in 84 cases and  $> 12-16$  weeks in 16 cases. Commonest indication was leiomyoma of uterus (43%). Mean duration of surgery was  $70 \pm 20.5$  minutes. Mean blood loss was  $150 \pm 65$  mL. Reasons for failure to perform NDVH was difficulty in opening pouch of Douglas in two cases because of adhesions and in one case there was difficulty in reaching the fundal myoma which prevented the uterine descent. Intra-operatively, one case had bladder injury (1%) that had previous 2 LSCS. Postoperatively, complications were minimal which included postoperative fever (11%), UTI (8%) and vaginal cuff infection was (4%). Mean hospital stay was 3.5 days.

#### CONCLUSION

Vaginal hysterectomy is safe, feasible in most of the women requiring hysterectomy for benign conditions with less complications and shorter hospital stay.

#### KEYWORDS

Route of Hysterectomy, Non-descent Vaginal Hysterectomy, Intra-operative and Postoperative Complications.

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**INTRODUCTION:** Hysterectomy is one of the most commonly performed major operations. Hysterectomies are performed vaginally, abdominally or with laparoscopic or robotic assistances. When choosing the route and method of hysterectomy, the physician should take into consideration how the procedure may be performed most safely and cost-effectively to fulfil the medical needs of the patient. Abdominal hysterectomy is undoubtedly the most popular with a 70:30 ratio for abdominal versus vaginal route.<sup>1,2</sup> Gynaecologic surgeons worldwide continue to use abdominal approach for a large majority of hysterectomies

that could be performed vaginally despite well-documented evidence that vaginal hysterectomy has distinct health and economic benefits in terms of fewer complications, better postoperative quality of life outcomes and reduced hospital charges.<sup>2,3,4</sup> The latest value study concluded that major haemorrhages, haematoma, ureteric injury, bladder injury and anaesthetic complications were more in laparoscopic assisted hysterectomy (LAVH) group when compared to abdominal and vaginal hysterectomies. In addition, LAVH was accomplished in twice the time required for vaginal hysterectomy.<sup>5,6</sup> The objective of this study was to assess the possibility of vaginal route as the primary route for all hysterectomies for benign conditions, in the absence of uterine prolapsed.

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**METHODS:** The study was conducted in Department of OBG, P K Das Institute of Medical Sciences, Vaniyankulam from January 2013 to December 2013. A total of 100 patients admitted to gynaecological ward requiring

hysterectomy for benign diseases in the absence of uterine prolapse without suspected adnexal pathology were taken for study. Prerequisites for NDVH were set as uterine size not exceeding 16 weeks of gravid uterus (by clinical judgment) and adequate vaginal access with good uterine mobility. Exclusion criteria included uterus with restricted mobility, suspicion of malignancy, complex adnexal masses. A written informed consent was taken from all patients after explaining the procedure and consent for conversion to abdominal hysterectomy if needed, was taken. Preoperative investigations including complete haemogram, urine analysis, blood grouping with Rh-typing, blood sugar, serum creatinine, blood urea, pap smear, endometrial biopsy, ECG, chest x-ray, USG abdomen and pelvis was done.

All cases were done under regional anaesthesia, either spinal or epidural. All cases were reassessed in operation theatre after patient was anaesthetised, to see the size, mobility of the uterus, vaginal accessibility and laxity of pelvic muscles. After cleaning and draping, cervix was held with vulsellum. Circumferential incision was made around the cervix, pubovesico cervical ligament was cut and bladder mobilised upwards. Both anterior and posteriors pouches were opened one after another. Uterosacral and cardinal ligaments were clamped, cut and ligated. Clamping of uterine vessels was done bilaterally. If at this time, uterine size did not allow an easy exteriorisation then debulking techniques like morcellation, bisection, coring, myomectomy or a combination of these methods were done. After delivering the uterus in the vagina, hysterectomy was completed in the usual manner. VH was considered successful if it was not converted to abdominal route.

Operating time was calculated from the start of incision at cervico-vaginal junction to the placement of vaginal pack. Blood loss was calculated by noting the number of mops used during surgery and blood collected in suction bottle. Postoperative catheterisation with Foley's catheter was done in all cases for 24 hours. All the women received prophylactic antibiotic as per hospital protocol. Postoperatively, haemoglobin estimation was done and all patients were meticulously followed. Postoperative complications like fever, UTI, vaginal cuff cellulitis, vaginal bleeding is noted. All patients were followed from time of admission to time of discharge and 2 weeks thereafter. Data regarding age, parity, uterine size, estimated blood loss, length of operation, complications and hospital stay were recorded and statistically analysed using SPSS software.

**RESULTS:** Among 100 patients included in the study, 97 patients successfully underwent NDVH, whereas three cases had to be completed by abdominal route due to various reasons. Majority of the patients belonged to age group 40-45 years. Mean age in vaginal hysterectomy group is 44.5 yrs. Age wise distribution of patients is given in table no.1. Majority of patients were para 2 and above. Parity wise distribution of patients is given in table 2. Four patients were nulligravida. Eight patients were with previous one or two LSCS.

The commonest indication for hysterectomy was fibroid uterus 43/100 (43%). Other indications were DUB, adenomyosis, PID, premalignant conditions of cervix, postmenopausal bleeding, endometrial and cervical polyp. Patient distribution according to indication for surgery is given in table 3.

Majority of the patients had uterine size less than 12 weeks 84/100 (84%). Sixteen patients had uterine size between 12-16 weeks. Uterine size wise distribution of patients is given in table 4. Different morcellation techniques like bisection, coring, myomectomy and debulking techniques were used during the surgery to remove bigger sized uterus. Volume reduction techniques were mostly required for uterine size 12 weeks and above. Debulking techniques were done in 40/100 (40%) patients. In the present study, the mean operating time was 70±20.5 minutes. Mean blood loss was 150±65 mL. Blood transfusion was done in 10 patients. There was bladder injury in one patient intra-operatively who had previous 2 LSCS. Mean hospital stay was<sup>3,5</sup> 3-7 days. Postoperative fever was seen in 11 patients, UTI in 8 patients, vaginal cuff infection was seen in 4 patients as mentioned in table 5.

Age group (yrs.)	No. of patients
35-40	6
40-45	55
45-50	25
>50	14
<b>Total</b>	<b>100</b>

**Table 1: Age distribution**

Parity	No. of patients
Nulligravida	4
Para 1	11
Para 2	45
Para 3	25
Para 4	15
<b>Total</b>	<b>100</b>

**Table 2: Parity distribution**

Indication for surgery	Vaginal hysterectomy
Fibroid	43
Dysfunctional uterine bleeding	32
Adenomyosis	9
Cervical intraepithelial lesions	7
Postmenopausal bleeding	6
Endometrial/cervical polyps	3
<b>Total</b>	<b>100</b>

**Table 3: Indication for surgery**

Size of the uterus	No. of patients
N-6 weeks	31
>6-10 weeks	28
> 10-12 weeks	25
>12-16 weeks	16
<b>Total</b>	<b>100</b>

**Table 4: Distribution according to uterine size**

	No. of patients
Conversion to TAH	3
Bladder injury	1
Blood Transfusion	10
Postoperative pyrexia	11
UTI	8
Vaginal cuff infection	4
<b>Table 5: Intra-operative and Post-operative complications</b>	

**DISCUSSION:** In the absence of uterine prolapse, most gynaecologists prefer the abdominal to the vaginal route of hysterectomy. The common limitations for vaginal hysterectomy in non-prolapsed uterus include size of the uterus, nulliparity, previous pelvic surgery, or LSCS, pelvic adhesions endometriosis.<sup>7</sup> The factors that may influence the route of hysterectomy for any surgical indication included uterine size, mobility, accessibility and pathology confined to the (no adnexal pathology or known or suspected adhesions).<sup>8</sup> In the present study, out of 100 cases selected for NDVH, 97 cases were completed successfully, whereas three cases were converted to abdominal hysterectomy. Reasons for failure to perform NDVH was difficulty in opening pouch of Douglas in two cases because of adhesions and in one case there was difficulty in reaching fundal myoma which prevented the uterine descent. Majority were in the age group 41-45 years. Similar age prevalence was noted in other case series reviews.<sup>9-12</sup> Similarly, most of the patients were parous comparable to other studies.<sup>9-11</sup> Lax tissues following multiple deliveries and decreased tissue tensile strength provide comfort to vaginal surgeon even in the presence of uterine enlargement. In the present study, four patients (4%) were nulligravida.

A major factor in determining the route of hysterectomy is transvaginal accessibility of the uterus. Inadequate accessibility sustaining from narrow vagina at the vaginal apex makes vaginal hysterectomy technically challenging and may contraindicate vaginal hysterectomy, especially by surgeons less experienced in this procedure. Two factors that limit accessibility are undescended immobile uterus and a vagina narrower than a fingerbreadth, especially at the apex. If the vagina allows access to divide the uterosacral and cardinal ligaments, uterine mobility usually improves enough to allow vaginal hysterectomy in these cases.<sup>13</sup> Determining whether the pathology is confined to or extends beyond the confines of the uterus is critical to selecting the most appropriate route of hysterectomy. The presence of severe endometriosis, adnexal pathology, adhesions because of previous pelvic surgeries contraindicate vaginal hysterectomy.<sup>14</sup> The commonest indication was fibroid uterus (43%). Fibroid uterus was the commonest indication in other case series.<sup>9,10,12</sup> In our study, 16 cases had uterine size more than 12 weeks which was similar to Bandra et al<sup>11</sup> who in their study successfully removed 16/158 uterus of 12-20 weeks' size. Similar findings were reported by Unger<sup>15</sup> who operated up on uteri weighing 200–700 grams without any increase in complications as compared to abdominal

hysterectomies. These patients required volume reducing techniques like coring, bisection, myomectomy or a combination of these after ligation of uterine artery.

Mean blood loss was 150±65 mL and amount of loss depend on uterine size and duration of surgery as compared to Bhadra B et al (100 mL).<sup>11</sup> Ten patients required blood transfusion. Mean duration of surgery was 70±20.5 minutes – as compared to Goel et al (64 minutes),<sup>3</sup> Dewan et al (54.5 minutes),<sup>4</sup> Bharatnur et al (65 minutes)<sup>10</sup> and Bhadra B et al (55 minutes).<sup>11</sup> The operative time was definitely more in the earlier phase of the learning curve. It was also dependent on the size of uterus and experience of the surgeon. Our study included 8 cases with previous LSCS, intra-operatively one case had bladder injury (1%) who had previous 2 LSCS. Bladder injury during VH has been variously reported between 0.5 to 1.6%. Unger<sup>15</sup> reported an incidence of 2.8% in the past LSCS group vs. 1.6% in those without caesarean section. Sheth<sup>16</sup> reported a very low incidence of bladder injury 7/5655 (0.1%). Postoperatively, complications were minimal which included postoperative pain, fever and UTI. Mean hospital stay was 3-5 days.

**CONCLUSION:** The technique used for hysterectomy should be dictated by the indication for the surgery, patient characteristics, and patient preference and experience of the surgeon. Most patients requiring hysterectomy should be offered the vaginal approach when technically feasible and medically appropriate. Vaginal hysterectomy for non-descent large uterus is safe, feasible, provided one is familiar with the morcellation techniques. Vaginal hysterectomy for non-prolapsed uterus should be practiced more frequently by gynaecologists and should be included in training programs for residents and postgraduate students.

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