

Original Article

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## Personal experience of Non Descent Vaginal Hysterectomy (NDVH) in a District Hospital—A Study of 60 cases.

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### Abstract:

**Objective(S):** To share our experience and explore the safety & feasibility of NDVH in 60 cases.

**Methods:** This prospective observational study was conducted from Jan 2016 to Dec 2017 in Obstetrics and Gynaecology Department of Sylhet shaheed Shamsuddin Ahmed Hospital, Sylhet. Sixty patients requiring hysterectomy for benign nonprolapsed gynaecological disorders were the target population. Prerequisite for non-descend vaginal hysterectomy were uterine size not exceeding 20 weeks, adequate vaginal access with uterine mobility.

Main outcome measures were i) Procedures of removal of large uterus ii) Time taken to complete the operation iii) Blood loss during operation iv) Postoperative hospital stay. v) Postoperative complications.

**Results:** Vaginal hysterectomy was completed successfully in 100% cases. All patients were multiparous and in 41-45 years age group (37%). Commonest indication was AUB (37%), Second indication was fibroid uterus (35%) and next indication was adenomyosis (13%). In most of the case uterus was 10-12 weeks size (37%), in 28% cases uterine size was less than 8 weeks, 14-16 weeks size in 27% cases and uterus was more than 16 weeks size in 8% cases. Morcellation techniques like bisection, myomectomy, wedge resection and debulking were done to remove bigger sized uterus. Mean operating time was 45 minutes. Mean blood loss was 60ml. Average hospital stay was 3 day. Complications were minimum which included UTI and febrile morbidity. At 12 weeks postoperative follow up 72% patient had no adverse complain though 18% cases was drop out.

**Conclusions:** Vaginal hysterectomy is safe feasible, scarless and patient friendly approach for benign gynaecological disorders other than prolapsed uterus. In this era of minimally invasive surgery, non-descend vaginal hysterectomy is to be considered as a safe option.

**Key words:** debulking, morcellation, non-descend vaginal hysterectomy.

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### Introduction:

Hysterectomy is one of the most commonly performed major gynaecological operative procedures. Traditionally various routes for removal of uterus have been used like abdominal, vaginal, laparoscopic route and with robotic assistance. Abdominal hysterectomy is undoubtedly the most popular with a 70:30 for abdominal versus vaginal route.<sup>1,2,3</sup>

Skill and experience of the surgeon play an important role in determining the route. Factors to be considered in safety, cost-effectiveness and the medical needs of the patients.<sup>4</sup> Superiority of hysterectomy by vaginal route is generally accepted as it a natural hiatus but still most of the gynaecologists use this route only for uterine prolapse, preferring abdominal hysterectomy for other indications. Most of surgeon find it easier to perform abdominal hysterectomy through a wide-open incision and find difficulties to avoid vaginal route. Laparoscopic route is enjoying much popularity in these two decades. However laparoscopic hysterectomy is associated with higher costs, longer duration of operation, prolong anaesthesia, specially trained personnel, costly instruments and risks related to laparoscopy.<sup>5</sup> On the other hand, non descent vaginal hysterectomy is associated with less morbidity, lower health care costs, lesser hospital stay, minimal complications and better patient satisfaction. There is no abdominal

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incision hence cosmetically approved by patient which allows earlier recovery and return to work, compared to abdominal and laparoscopic techniques.<sup>3,6</sup>, there is a need for expanding the indication for the vaginal hysterectomy rather than restricting it to the conventional indication of uterovaginal prolapse.<sup>5</sup> Usual limitation of vaginal hysterectomy in non descent uterus is its size but now with larger sizes, hysterectomy can be facilitated by bisection, wedge bulking, morcellation, myomectomy.<sup>7</sup> There is ample opportunity to learn and master vaginal surgery. Training and experience in vaginal surgery appear to be the major determinant of this type of hysterectomy performed.<sup>8</sup>

The aim of this study is sharing experience of non-descent vaginal hysterectomy and exploring its safety & feasibility in benign disease of non prolapsed uterus and maximizing the proportion of hysterectomy to be performed vaginally at Sylhet Shaheed Shamsuddin Ahmed Hospital, Sylhet.

#### **Material and Methods:**

This prospective observational study was conducted from Jan 2016 to Dec 2017 in Obstetrics and Gynaecology Department of Sylhet Shaheed Shamsuddin Ahmed Hospital, Sylhet. A total of 60 cases of benign gynaecological disorders who had no descent of uterus or vagina and needed hysterectomy were the target population of this study. A preformed questionnaire was made for data collection. Selection criteria for non descent vaginal hysterectomy (NDVH) were i) Uterine size not exceeding 20 weeks of gravid uterus (by clinical judgment) ii) adequate vaginal access with good uterine mobility. Exclusion criteria included uterus with restricted mobility, suspicion of malignancy and complex adnexal masses. Consent for conversion of procedure to abdominal hysterectomy (if needed) was taken. A detail history from the patient was taken. A thorough examination was done including general examination, per abdominal examination, per vaginal examination for size and position of uterus, degree of descent, mobility, vaginal capacity & presence of cystocele or rectocele.

The patients were thoroughly investigated by routine investigations eg. Complete haemogram,

blood grouping & Rh typing, blood sugar, serum creatinine, VIA test, ECG, chest X-ray, ultrasonogram of abdomen & pelvis, HBSAg, urine analysis. A good bowel preparation was taken in every case to gain good exposure and avoid bowel injury. A written informed consent was taken from all patients after explaining the procedure. After all preparation patients were operated under spinal anesthesia.

All cases were re-assessed in operating theater after the patient was anesthetized to confirm the size, mobility of uterus, vaginal accessibility and of pelvic muscles.

#### **Operative Technique:**

During vaginal hysterectomy antiseptic cleaning and draping was done, cervix was held with long tissue forceps. A circular incision was given around the cervix. The pubo-vesico-cervical ligament was cut, vesicocervical space exposed and bladder mobilized appropriately. The pouch of Douglas was exposed next. After that the Mackenrodt's ligament and utero sacral ligament were cut and ligated then the uterine vessels were cut and ligated bilaterally. In big sized uterus techniques like uterine bisection, debulking, wedge resection, myomectomy or combinations of these procedures were performed when required to ease limitation of space for further proceeding. Lastly the round ligament, fallopian tube, ovarian or infundibulopelvic ligament were cut and sutured. Finally uterus was removed. Vaginal pack and Post-operative catheter was kept in all cases for 12 to 24 hours. Vaginal hysterectomy was considered successful if it was not abandoned or converted to abdominal route. All patients received 3 days injectable antibiotics. On 3<sup>rd</sup> postoperative day hemoglobin estimation & urine analysis were done. Postoperative complications like fever, urinary tract infection and vaginal cuff cellulites were noted. All patients were followed from time of admission to time of discharge and 2 weeks and 12 weeks thereafter to note their well being or any late complication like vaginal discharge, urinary/bowel symptoms.

Data regarding age, parity, uterine size, indications, estimated blood loss, length of operation, complications, adjuvant procedures, clinical outcome and postsurgical hospital stay

were recorded. Operating time was calculated from the start of incision at cervico-vaginal junction to the placement of vaginal pack. Estimated blood loss was calculated by deducting previously weighted gauzes and mops from bloodsoaked weighted gauzes & mops and transfer the weight in milliliter (1 oz= 30ml). Statistical analysis was done by using percentage.

**Results:**

A total of 60 cases for different indication were operated by NDVH technique in our study period. Data were collected and different tables were made.

**Table 1 Age distribution ( n = 60)**

Age group	Number of Patients	Percentage (%)
35-40	13	23
41-45	22	37
46-50	20	33
>50	05	8

**Table I** showed 37% cases were in age group 41-45, 33% were in 46-50yrs age group, 23% patients were below 40 yrs and 8% were of above 50yrs.

**Table 2 Distribution of parity ( n = 60)**

Parity	Number of patients	Percentage (%)
01	02	3
02	07	12
03	15	25
04	15	25
05	14	23
>5	07	12

**Tables 2** showed most of the patients were multipara, 50% had para 3 to 4 & 23% had para 5and more. 12% had para 2 and 3% were primipara.

**Table 3 Co-morbidity of the patients**

Medical problem	Number of patients	Percentage (%)
Diabetes melitus	18	30
Hypertension	13	22
Hypothyroidism	04	10
Bronchial Asthma	02	3
Diabetes melitus with Hypertension	05	8
None	18	30

**Table 3** showed among 6 0 patient 30 % have no associated co-morbidity. 30% had DM, 22% had HTN and 10% had hypothyroidism.

**Table 4 Debulking techniques used for NDVH**

Techniques	Cases	Percentage (%)
Bisection	24	40
Myomectomy	16	27
Morcellation	08	13
Combind	04	7
Intact uterus	08	13

**Table 4** showed in 13% cases uterus was removed intact, in 40% patients bisection, in 27% cases enucleation of myoma, in 13% cases wedge resection and in 7% cases combination of procedures required to be done as a morcellation procedure to remove the uterus.

**Table 5: Outcome of surgery**

Outcome of surgery	Mean
Mean operating time	45 minutes
Mean blood loss	60 ml
Mean(posoperative) hospital stay	3 days

**Table 5** showed clinical outcome. Mean operating time was 45min Operating time was directly related to the size of uterus, Mean blood loss was 60ml. Most of the patients were discharged 3 days after operation.

**Table 6: Surgical complications**

Complications	No of patients	Percentage (%)
Bladder injury	0	0
Ureter injury	0	0
Bowel injury	0	0
Primary hemorrhage	0	0
Secondary hemorrhage	0	0
Vault hematoma	0	0
Pelvic abscess	0	0
Febrile morbidity	05	8
Urinary tract infection	04	7
Conversion to laparotomy	0	0

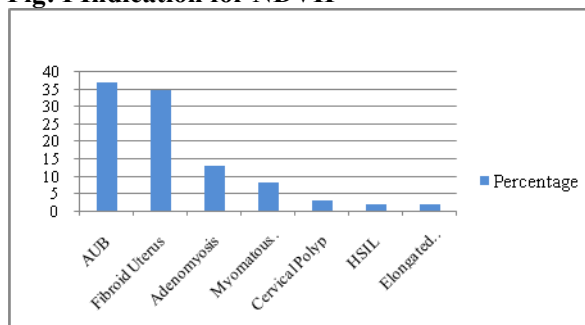
**Table 6** showed postoperative complications. There was no bowel, bladder or ureteric injury. No major morbidity was observed. Febrile morbidity was found in 8% cases and urinary tract infection was found in 7% cases.

**Table 7 Post Operative follow up (at 12 weeks)**

Follow up	No. of patients	Percentage (%)
No complain	43	72
Pain	03	5
Dyspareunia	02	3
Vault granuloma	02	3
Abscent from follow up	10	17

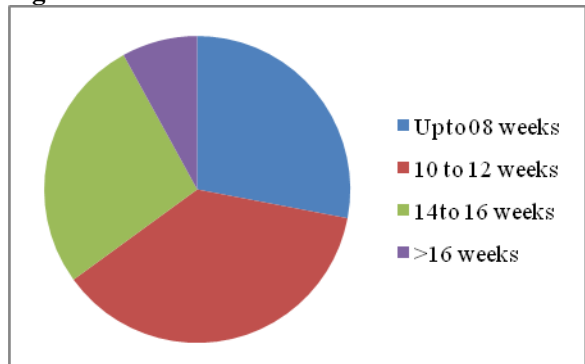
**Table 7** showed postoperative follow up at 12weeks. Most of the patient had no complain (72%). A fairly large number of patients (17%) were absent from follow up. 5% patient had complain of lower abdominal pain, 3% had dyspareunia and 3% developed vaginal discharge due to vault granuloma.

**Fig: I Indication for NDVH**



**Fig: I** showed most common indication for NDVH was abnormal uterine bleeding (37%) followed by fibroid uterus (35%) and 3<sup>rd</sup> most common indication was adenomyosis (13%).

**Fig: II Uterine size selected for NDVH**



**Fig: II** showed most of the cases had uterus 10-12 weeks and 28% had <8weeks size. 27% had uterus 14-16 weeks size and 8% had uterus >16 weeks size.

**Discussion:**

The most common route opted for hysterectomy is abdominal route. Thomas G Stoval et al found that 70% to 80% of hysterectomies are performed by abdominal route whereas vaginal approach is usually reserved for utero-vaginal prolapsed.<sup>9</sup> Big uterus and inadequate technical skills make the vaginal route difficult. Good uterine mobility, adequate vaginal access and in absence of adhesion vaginal hysterectomy even salphingoophorectomy can easily be performed. Multiparity, lax tissue following multiple deliveries and decreased tissue tensile strength provide comfort to the vaginal surgeon even in presence of big uterus.

In our study out of 60 cases selected for NDVH, all cases were completed successfully. No one needed conversion to abdominal hysterectomy. Though one study shows conversion of the procedure to abdominal hysterectomy for various reasons<sup>10</sup>In this study majority of the patients were in the age group of 41-45 years and most of them were multiparous, which is comparable to other studies.<sup>3,11-15</sup> In this study 30% of patients had Diabetes melitus, 30% was uncomplicated with any medical disorders, 22% had hypertension and 10% had hypothyroidism. 20% of patients in our study had history of previous cesarean section,15% had history of bilateral tubal ligation and 12% had history of laparotomy. Most common indication of NDVH in our study was abnormal uterine bleeding not responding to medical treatment (37%) and second most common indication was fibroids (35%), 3<sup>rd</sup> most common indication was adenomyosis (13%). Shital Mehta et al, Bhadra B et al also reported AUB as a most common indication.<sup>14,16</sup> Only NDVH was done in 81% cases, NDVH with pelvic floor repair was done in 18% of patients for associated cystocele and some rectocele, salphingoophorectomy was done along with NDVH in 8% cases. Benign adnexal pathology can easily be dealt in this vaginal route without any complication and urogynaecological surgery can also be performed at the same sitting. In majority of cases in our study size of the uterus was 10-12 weeks size (37%), 28% were less than 8weeks size uterus and in 27% cases uterus were 14-16 weeks size. Debulking was done when uterine

size was more than 12 weeks. Among all of the large uterus bisection, morcellation, myomectomy, wedge resection and combinations remained the common technique, which was shown by other study also.<sup>17</sup> One can safely use morcellation procedure, after bilateral uterine vessel ligation. Now a days fibroid upto 20 weeks size or even more and adnexal pathology can also be removed vaginally by using different morcellation techniques.<sup>20,21</sup> Mean time for operation in this study was 45 minutes. It was lesser than that reported in other studies, Arifa A Zahan et al (50.5 min)<sup>22</sup>, Goel et al (64min)<sup>3</sup>, Dewan et al (54.5 min)<sup>12</sup>, Bharatnur et al (65 min)<sup>13</sup> and Bhadra (55 min)<sup>14</sup> and by Seth in his personal series of 5655 cases<sup>1,2</sup>. Usually operating time depends on surgeon's skill, size of uterus, and some associated factors like presence of fibroid and adhesions. Mean blood loss was 60ml. It was lesser than that of other studies (268-316 ml).<sup>3,12-14</sup> Operation time and blood loss were directly proportional to the size of uterus & presence of fibroid. Most of the patients were discharged at 3<sup>rd</sup> postoperative day. The postoperative hospital stay was shorter than the average stay of 7-8 days for abdominal hysterectomy in our hospital. Hospital stay of 2-5 days is reported in other studies.<sup>18-19</sup> We did not encounter any bladder, ureteric or rectum injury. In one study of 3076 vaginal hysterectomies, it was found that the incidence of urinary intestinal tract injuries was 1.7 and 0.5% respectively.<sup>23</sup> Major complications were less due to thorough preoperative selection of cases. There were minor complications like febrile morbidity in 8% cases and urinary tract infection in 7% cases. In our study 72% patients had no complains at their 12 weeks postoperative follow up, 17% were lost from follow up, 3% complains of dyspareunia, 5% experienced lower abdominal pain and 3% developed vaginal discharge due to vault granuloma.

There are lots of advantages of NDVH over the abdominal hysterectomy, which are absence of scar, no adhesions, no risk of incisional hernia, no wound gap, associated uro-gynecological procedures can also be performed. Operative time, blood loss, anaesthetic complications, chance of injury to bowel, bladder and ureter,

bowel handling leading to paralytic ileus are lesser than abdominal approach. Shorter hospital stay, fast recovery, low cost, less thromboembolic phenomena, less mortality and morbidity are other benefits of vaginal approach.<sup>24,25</sup>

### Conclusion:

Detail preoperative assessment and examination under anaesthesia is an important part to choose the route of hysterectomy. Mobility, size of uterus, vaginal capacity and laxity along with good surgical skill and expertise in debulking techniques are an integral part. A combination of morcellation techniques is required and surgeon needs to be familiar with these. Our study concludes that non descent vaginal hysterectomy is more feasible, safe in moderately enlarged uterus even up to 20 weeks. NDVH is safe in the hands of an expert vaginal surgeon however decision of route should be individualized depending upon the best option for the patient. This scarless approach need to be preferred rather than restricted for traditional utero-vaginal prolapsed surgery.

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