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Non Descent Vaginal Hysterectomy (NDVH) for Benign Gynaecological disease: An Institutional Study on safety and feasibility from South India

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Abstract:
Background: *Hysterectomy is most common gynaecological surgery done for various indications varying from AUB, fibroid uterus to malignancies. There are various approaches for performing hysterectomy ranging from laparotomy, laparoscopic to vaginal hysterectomy in both descent and non-descent cases. Incidence of hysterectomies in india is reported to be low compared to developed countries.Most common indication for hysterectomy being excessive menstrual blood loss due to hormonal reasons or fibroids (size more often not exceeding 12 weeks) .The need for safer and less expensive route of surgery would be a better option for these kind of patients. In this context, we analysed our experience with a less morbidNon-descent vaginal hysterectomy with regards to safety and feasibility.*
Materials and methods: *This is a retrospective observational study of patients who underwent nondescent vaginal hysterectomy (NDVH) for benign gynaecological conditions done at our institute from September 2017 to September 2015. NDVH was performed in cases where the uterus was mobile, with size not exceeding 20 weeks uterine size (by clinical examination), and with adequate vaginal access, various morcellation techniques were used in bigger size uterus.*
Results: *In 105 cases of NDVH performed during the analysis period 59% of them were between 40-49 yrs, fibroid being the commonest indication.Failure/ conversion rate being 1.9%due to inaccessibility and shape of the fibroid. Complications were few with mean operating time being 90min with average blood loss of 100ml.*
Conclusion: *Vaginal hysterectomy appears to be safe and feasible in most of the women requiring hysterectomy for benign conditions with minimum complications and shorter hospital stay*
Keywords: *Non -descent vaginal hysterectomy(NDVH), Morcellation, Fibroid, Coring*

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I. Introduction

Hysterectomy is the most common major gynecological surgical procedure. It can be done by abdominal or vaginal or laparoscopic route [1,2]. Laparoscopy assisted vaginal hysterectomy (LAVH) and total laparoscopic hysterectomy (TLH) although gaining more popularity, is associated with higher cost, longer duration of operation,exposure to general anesthesiae and need for specially trained personnel. On the other hand, vaginal hysterectomy is associated with reduced morbidity and lower health care costs compared to laparoscopic techniques. Vaginal hysterectomy in larger sized uterus is facilitated by bisection, myomectomy, debulking, coring etc. 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 fulfill the medical needs of the patient. The value study concluded that major hemorrhage, hematoma, ureteric injury, bladder injury, and anesthetic complications were more in laparoscopic assisted hysterectomy (LAVH) group when compared to abdominal and vaginal hysterectomies [3-6]. We set out to analyse our institutional experience in performing non-descent vaginal hysterectomy (NDVH) for benign gynecological indications and to explore different surgical techniques that make vaginal hysterectomy simpler and easier to perform.

II. Material And Methods

A total of 105 patients requiring hysterectomy for benign gynecological disorders without prolapse were studied for a period of two years from September 2015 to September 2017. It is a retrospective observational study. NDVH was performed in cases where the uterus was mobile, with size not exceeding 20 weeks pregnant uterine size (by clinical examination), and with 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, including the consent for conversion to abdominal hysterectomy if needed, was taken. Pre-operative investigations including complete hemogram, urine analysis, blood grouping with Rh-typing, blood sugar, serum creatinine, blood urea, Pap smear, pre menstrual endometrial biopsy, ECG, Chest X-ray, USG Abdomen and Pelvis was done. All cases were done under regional anesthesia, either spinal or epidural. All cases were re-assessed in operating theatre and patient in lithotomy posture to see the size, mobility of the uterus, vaginal accessibility and laxity of the pelvic muscles. After cleaning and draping, cervix was held with vulsellum. Uterosacral ligaments massaged for further descent. A semi circular incision was made at the cervicovaginal junction, pubo-vesico-cervical ligament was cut and bladder mobilized upwards. Posteriorly a sharp cut with the scissors is made to open the pouch of douglas. After opening the pouches hysterectomy is performed in the usual manner, if the uterus is bigger than 10 weeks in size or enlarged transversely various morcellation techniques have been utilised most common being bisection and enucleating the fibroid to reduce the bulk of tissue. Related operative illustrations are shown in Fig 1 and 2. All these procedures performed after uterine artery ligation. After delivering the uterus, hemostasis is checked and vault is closed. NDVH was considered successful if it was not converted to the abdominal route. Exvivo specimen samples are illustrated in Fig 3 and 4.

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. Post-operative catheterization with Foley's catheter was done in all cases for 24 hours. All the women received prophylactic antibiotics as per hospital protocol. Post operatively haemoglobin estimation was done. All patients were followed from time of admission to time of discharge and 2 weeks thereafter.

III. Results

Among 105 patients included in the study, 103 patients successfully underwent NDVH, whereas two cases had to be completed by abdominal route due to inaccessible fundal fibroid. Majority of the patients belonged to age group of 45-49 years. All cases except three were multiparous. Inthis study, only 8 patients had history of previous caesarean section, while majority (92.5%) had unscarred uterus. The commonest indication was uterine fibroid and rest were related to uterine bleeding. Frequency distribution of surgical indications are displayed in Table 1. Largest uterus removed was equivalent to 20 weeks pregnant uterine size. Majority (49.5%) of the cases had uterine size between 8-12 weeks. 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. Frequency distribution of various uterine sizes is detailed in Table 2. There was bladder injury in a patient with 2 previous LSCS and rectal injury due to large fibroid with difficult extraction post operatively with fecal fistula possibly due to unwanted pressure on the rectum by the speculum. Failure of NDVH was due to inaccessible fundal fibroid in two cases. In the present study, mean operating time of surgery was 90 minutes. Average blood loss was 100ml. Mean hospital stay was 3 days.

IV. Discussion

In the absence of uterine prolapse, most gynecologists 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 lower segment caesarean section (LSCS), pelvic adhesions and endometriosislast but not the least is limited exposure during the learning phase of their carrier.The factors that may influence the route of hysterectomy for any surgical indication include uterine size, mobility, accessibility, and pathology confined to the uterus. Multiparity, 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, out of 105 cases selected for NDVH, 103 cases were completed successfully, whereas two cases were converted to abdominal hysterectomy. Failure was due to inaccessible fundal fibroid similar to other studies [7-9]. Majority were in the age group of 40-49 years. Similar age prevalence was noted in other case series reviews [1-3,9,13]. The commonest indication was fibroid uterus (50.4%). Fibroid uterus was the commonest indication in other case series [1,2,9,12]. We were successful inremoving uteri of up to 20 weeks pregnancy size vaginally without any increase insurgical complications, blood loss, operative time or hospital stay. In our study 11 cases (10.5%) had uterine size >16weeks.Similar findings in a study, which operated upon uteri weighing 200 to 700 grams, without any increase in complications as compared to abdominal hysterectomies [4]. Other study with similar results was by Bhadra et al, morcellation techniques were employed in larger sized uterus to facilitate vaginal surgery [5]. A study successfully carried out vaginal hysterectomies in 95% (76/80) and 60 of their patients needed morcellation or hemisection or myomectomy.Sheth[5] reported a very low incidence of bladder injury 7/5655 (0.1%) [10]. Unger et al, reported

an incidence of 2.8% in the past LSCS group vs. 1.6% in those without caesarean section [11]. In our study one case (2%) had bladder injury. Mean duration of surgery was 90 minutes where as other studies results were Dewan et al (54.5 minutes), Bharatnur et al (65minutes) and Bhadra B et al (55 minutes). This depends on the size of the uterus and experience of the operating surgeon [1-3, 16,17]. Mean blood loss was about 100ml which is similar compared to Bhadra et al. The length of hospital stay reported by Dorsey et al was 3.5 for total vaginal hysterectomy. In our study hospital stay was 3 days.In "Value study" LAVH (6.1%) resulted in significantly higher risk of operative complications than abdominal (3.6%)and vaginal hysterectomy (3.1%) An ACOG committee opinion published in Obstetrics and Gynecology reflects emerging clinical and scientific advances in choosing the route of hysterectomy for benign disease [3]. This clinical effectiveness research by ACOG reviewed hundreds of articles on patient-related outcomes and clinical trials, which is the basis for evidence-based medicine, and reported their unbiased and evidence-based conclusions.

1. Vaginal hysterectomy is the approach of choice, whenever feasible, based on its well-documented advantages and lower complication rates.
2. The choice of whether to perform prophylactic oopherectomy at the time of hysterectomy is based upon the patient's age, risk factors, and informed wishes, but not on the route of hysterectomy.
3. Laparoscopic hysterectomy is an alternative to abdominal hysterectomy for those whom a vaginal hysterectomy is not indicated as feasible.
4. Experience with robotic hysterectomy is limited at this time; more data are necessary to determine its role in the performance of hysterectomy.

V. Conclusions

The route of hysterectomy should be decided by the indication for the surgery, patient characteristics, and patient preference and experience of the surgeon. However operating surgeon need to discuss regarding safety and enlighten them with short term advantages of early recovery and long term advantages of selecting the vaginal route for hysterectomy motivate the patients in decision making. 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 and feasible provided one is familiar with the morcellation techniques. With experience, operative time, blood loss and complications can be reduced considerably.in bulky uterus to reduce the voume of the fibroid commonest technique used was bisection(5)done after uterine artery ligation. Thus this scarless approach appears to be the preferred method of hysterectomy.

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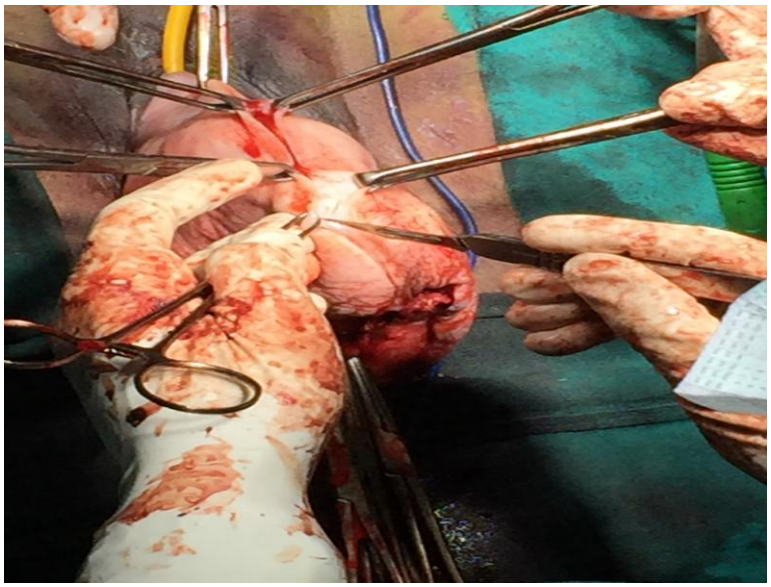

Figure 1: Operation in progress – bisecting the huge specimen

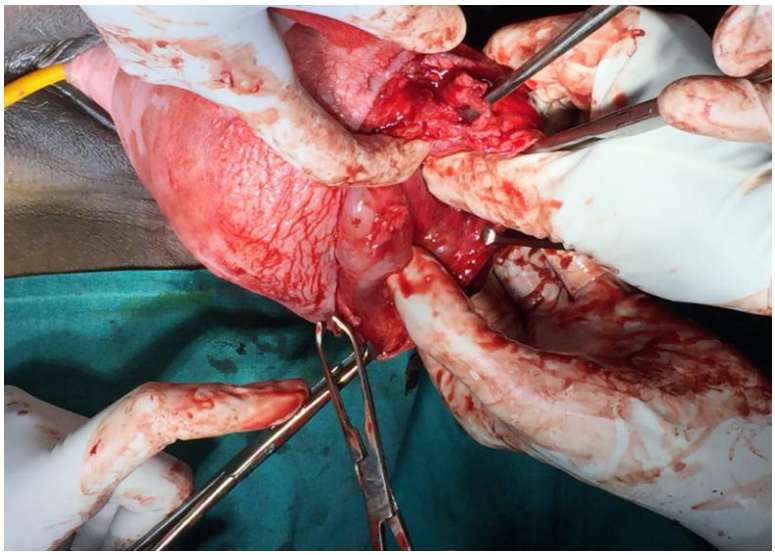

Figure 2: Operation in progress – morcellating the huge specimen

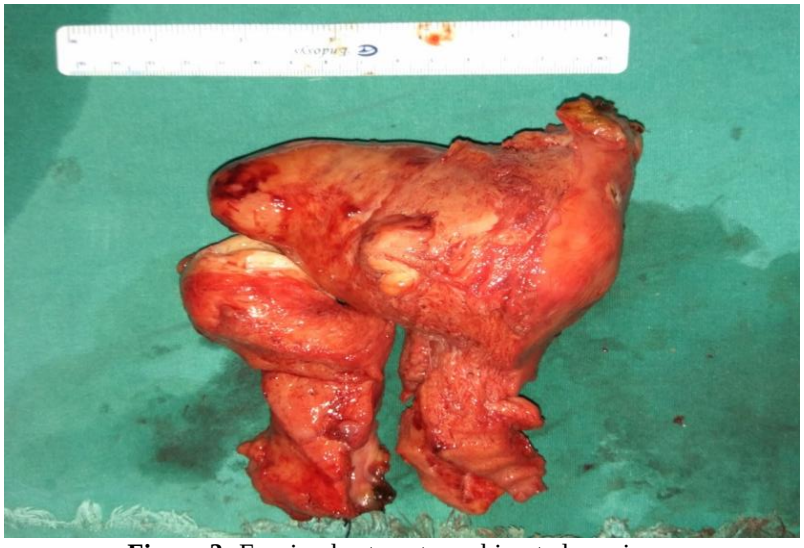

Figure 3: Ex-vivo hysterectomy bisected specimen

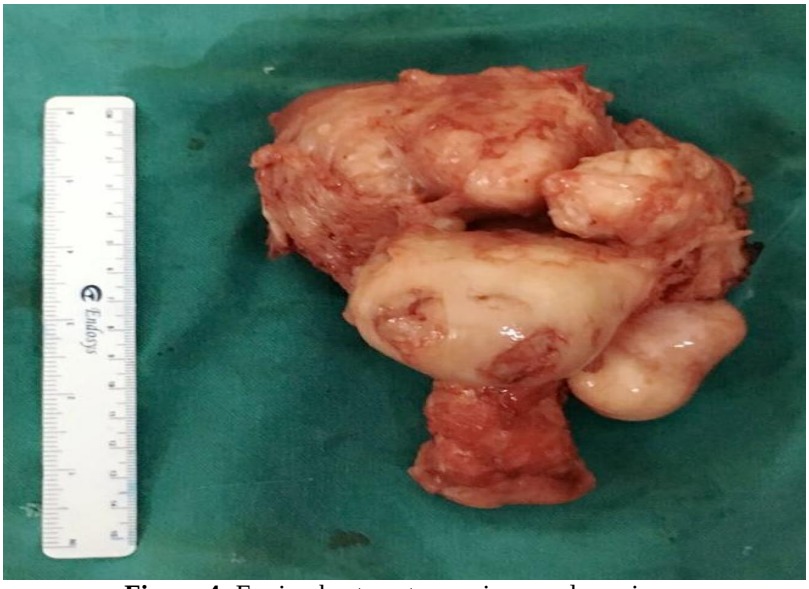

Figure 4: Exvivo hysterectomy piecemeal specimen

Table 1: Indications of NDVH

Indication	No. of patients
Fibroid	53(50.4%)
AUB	42(40%)
Postmenopausal bleeding	10(9.5%)
TOTAL	**105**

Table z: Distribution according to uterine size

Size of the uterus	No. of patients
<8 wks	29(27.5%)
8-12 wks	52(49.5%)
12-16 wks	13(12%)
>16 wks	11(10.5%)
TOTAL	**105**

Table 3: Comparison of results between different studies

	Present study	Chandana et al.	Dewan et al.	Saha et al.	Thulasi et al.
Age 35-40 41-45 46-50 >50	 28.5% 59% 10% 2.5%	 6% 55% 25% 14%	 12% 54% 20% 14%	 30% 40% 10% 20%	 6% 55% 25% 14%
Indication	Fibroid (50.4%) AUB (40%) PMB(9.5%)	Fibroid (43%) DUB (32%) Adenomyosis(9%)	Fibroid (68%) DUB (20%) Adenomyosis(6%)	Fibroid (46%) DUB (26%) Adenomyosis(24%)	Fibroid (43%) DUB (32%) Adenomyosis(9%)
Size (>16wks)	11 cases (10.5%)	-	-	2 cases (4%)	-
Bladder injury	1 case (0.95%)	1 case (1%)	-	-	1 case(1%)
Failure	2 cases (1.9%)	3 cases (3%)	1 case (2%)	7 cases(14%)	3 cases (3%)
Mean time	90min	70min	54.5min	120min	70min
Mean bl. loss	100ml	150ml	290ml	205ml	150ml

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