Original Research Article

Non Descent Vaginal Hysterectomy- safe, cost effective, scarless procedure in bulky uterus

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Abstract

Introduction: Removal of the uterus through the vagina when performed in a case without uterine descent or prolapse is known as "non-descent vaginal hysterectomy" (NDVH). If hysterectomy is indicated for benign disease then indications are for NDVH unless contraindicated. With advent of morcellation and debulking techniques, the ease and success of performing NDVH has increased.**Aims and objectives**-1.To study age distribution, parity, menstrual status and marital status of patients undergoing NDVH.2.To study chief complaints and indications of NDVH.3.To study size of uteri in patients selected and the different techniques of debulking used during NDVH.4.To assess the safety of NDVH in patients with previous pelvic surgery.**Material and methods:**Total 50 patients were included in the study. Detailed history was taken including obstetric history, menstrual history and clinical examination was performed. Then basic blood tests, ultrasonography, Pap smear, Dilatation and curettage was done for all the patients. After taking consent and doing proper preoperative preparation, patient was posted for NDVH. Post operative complications were noted. Patients were told to come for follow up after 15 days.**Results:** Out of 50 patients, 52% belonged to 41-50years age group and 40% were from 31-40 years of age group. 98% were married, 88% were menstruating and 12% were menopausal. Multiparity was favoured factor for NDVH. Menorrhagia, dysmenorrhoea, chronic abdominal pain were found in 72%, 18% and 16% respectively. 78% had previously performed tubectomy. In ultrasonography, normal sized uterus was found in 34%, anterior wall fibroid was next common finding found in 32%. Uterine fibroid was commonest indication for surgery.**Conclusion:** NDVH was found to be safe, scarless procedure which was also cost effective. NDVH is possible in bigger size uteri with use of different methods of debulking which is safe and it accomplishes the surgery by vaginal route in most of the cases.

Keywords: Bigger size uterus, multiparity, NDVH, scarless,

Introduction

Hysterectomy is one of the most commonly performed gynecologic surgeries, second only to cesarean delivery[1].The majority of hysterectomies are performed for benign indications of the uterus such as fibroid uterus, which is the commonest indication.[2] The preferred route of hysterectomy is vaginal whenever feasible[3,4]. But vaginal hysterectomies are not usually performed due to, lack of training or experience leading to reluctance to perform the procedure by vaginal route in cases of enlarged uterus, previous pelvic surgeries or when hysterectomy is combined with oophorectomy. The proponents of laparoscopic assisted vaginal hysterectomy (LAVH) claim to overcome the limitations of vaginal hysterectomy. The emphasis on minimally invasive surgery has led to the resurgence of interest and importance of vaginal hysterectomy for non-prolapse indications i.e. **Non-descent vaginal hysterectomy (NDVH)** as the scar less hysterectomy. Now-a-days, various techniques have been developed to perform NDVH successfully in patients with previous pelvic surgery with dense adhesions like posterior-anterior approach or entry through the lateral approach. Also various studies like the CREST (the Collaborative Review of Sterilization) study,[3] Ottosen et al[6] and Taylor S et al[7] have shown vaginal hysterectomy to be a valid alternative to the abdominal approach with fewer complications, shorter recovery period and hospital stay. Schneider et al reported that the incidence of abdominal hysterectomy fell to 12% from 66% with use of NDVH and LAVH. So, as NDVH is the least invasive technique for the removal of the uterus, it is important for every gynecologist to master this technique and thus the need for expanding the indications of NDVH[8].

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Aims and objectives

1. To study age distribution, parity, menstrual status and marital status of patients undergoing NDVH.
2. To study the chief complaints and indications of NDVH.
3. To study the size of uteri in patients selected and the different techniques of debulking used during NDVH.
4. To assess the safety of NDVH in patients with previous pelvic surgery.

Material and methods

1) **Type of study**- A prospective observational study.
2) **Duration of study**- 1st November, 2013 to 31st October, 2015(2 years).
3) **Sample size**- 50
4) **Inclusion criteria**- Patients not giving informed consent.
5) **Exclusion criteria:** Endometriosis, uterine prolapsed, immobility of uterus, genital Malignancy, size of uterus > 18 weeks, ovarian tumors.
6) **Procedure**- Patient's age, parity, socio-economic status, marital status, past history was taken. Gynecological examination included per speculum examination, per vaginal examination for assessing size of the uterus, mobility of the uterus, assessment of the space available around the uterus, descent of the uterus and the presence of adnexal pathology was looked for and special mention was made if the patient had undergone any previous abdominal surgery or LSCS.

Pelvic ultrasonography was done to rule out gross adnexal pathology, for assessment of uterine size and the site of fibroids in case there were any. Dilatation and curettage was done in almost all patients before posting the patient for NDVH to aid the diagnosis and to rule out malignancy. Cervical biopsy was done in patients based on their complaints and clinical examination findings as and when required. After proper preoperative preparation, patient was posted for NDVH. A good bowel preparation was given 1 day before to help good exposure and avoid bowel injury. Injectable antibiotic was given prophylactically to all women 1 hour before operation began. A proper written informed consent was taken from all patients and their relatives after explaining the procedure. Special consent for conversion to abdominal hysterectomy if needed and chances of bladder and bowel injury was taken. The vagina was infiltrated at its junction with the cervix with 10-30 ml normal saline. A circumferential incision was made at the junction of cervix and vagina. Anterior and posterior pouch was opened. After ligating bilateral uterosacral and Mackenrodt's ligaments, bilateral uterine vessels were ligated. The next step of hysterectomy depended on the size of the uterine mass and included use of various debulking methods like bisection, myomectomy or a combination of these if required. The uterus was removed after clamping the round ligaments and ovarian ligaments. After the delivery of uterus, the tubes and adnexa were removed where necessary by ligating the infundibulopelvic ligament. Hemostasis was achieved and confirmed. The peritoneal cavity was closed and the vault is suspended and closed. Intra-operative complications were noted if any. Operative time was calculated from the beginning of the incision at the cervico-vaginal junction to the closure of the vaginal vault. Blood loss was calculated by noting the number of mops used during the procedure and the amount of blood sucked in the suction bottle. On an average, 1 fully soaked mop corresponds to 80 ml of blood. Post-operative catheterization with Foley's catheter was done in all patients, which was removed in most of the cases of post-operative day 1. Specimen removed of uterus with cervix with/without adnexa was sent for histo-pathological examination.

Results

Among the 50 patients, 49 patients successfully underwent NDVH. In 1 patient the surgery was converted to abdominal hysterectomy due to greater transverse diameter of the uterus and limited descent.

Table 1: Age Distribution of Patients

Age (Years)	No. of Patients	Percentage (%)
21-30	01	2%
31-40	20	40%
41-50	26	52%
51-60	02	4%
>60	01	2%
TOTAL	**50**	**100%**

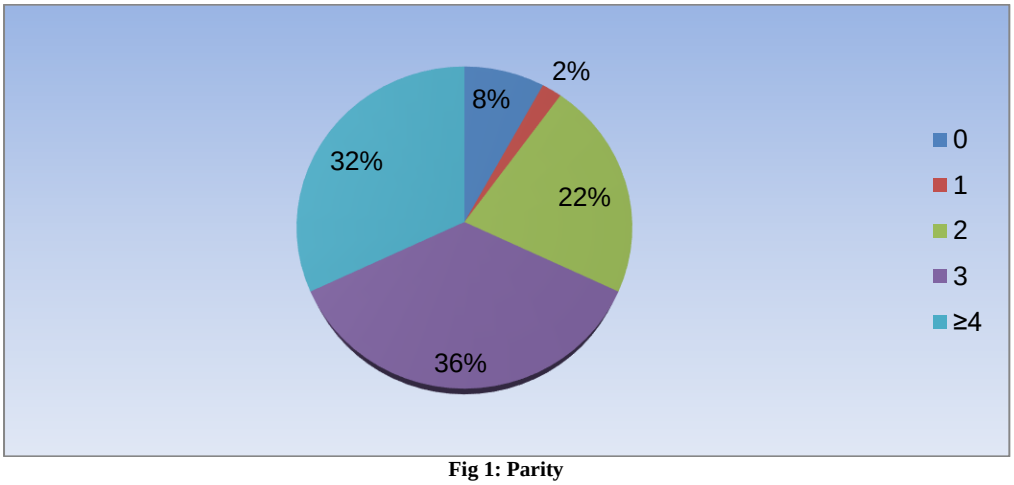

Fig 1: Parity

In our study, 98% patients were married and 2% were unmarried. 88% (i.e. n= 44) were menstruating and 12% (n=6) were menopausal.

Table 2: Chief Complaints of Patients

Symptoms	Frequency	Percentage (%)
Menorrhagia	36	72%
Polymenorrhagia	06	12%
Dysmenorrhoea	09	18%
Chronic Abdominal Pain	08	16%
Leucorrhoea	04	8%

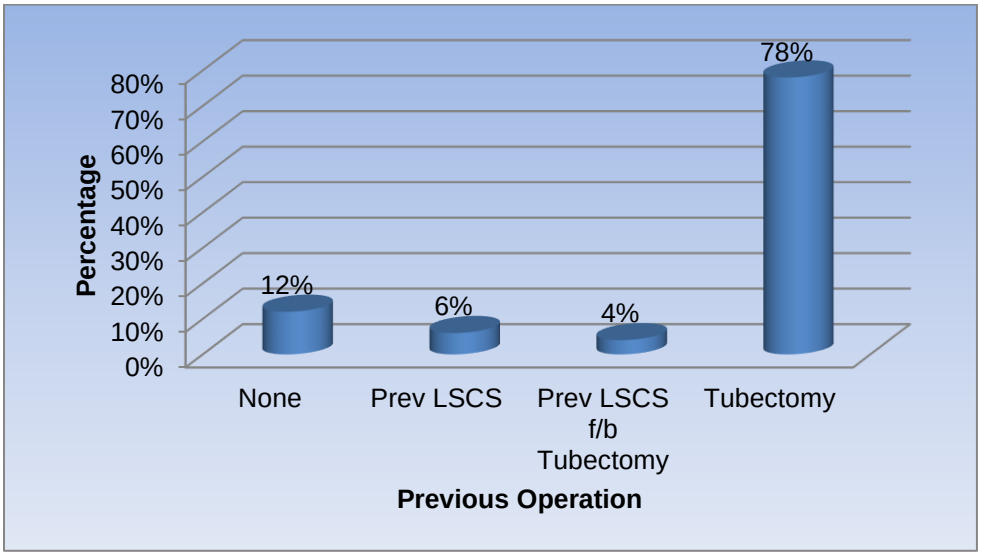

Fig 2: Previous pelvic surgery

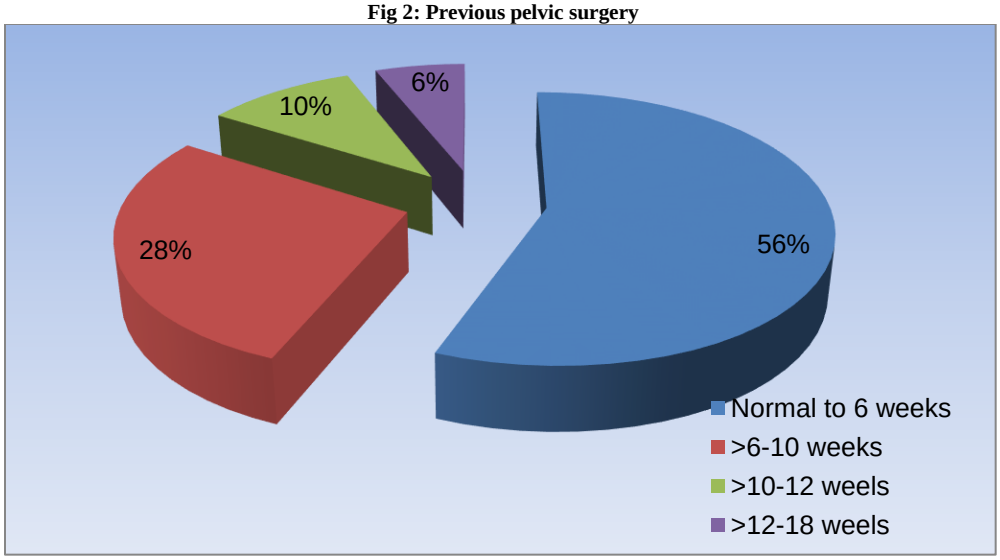

Fig 3: Size of uterus

Table 3: Ultrasonography Findings

USG Finding	No. of Patients	Percentage (%)
Normal Sized	17	34%
Multiple Fibroids	01	2%
Anterior Wall Fibroid	16	32%
Posterior Wall Fibroid	08	16%
Adenomyosis/Bulky Uterus	08	16%
Total	**50**	**100%**

Table 4 : Indication of Surgery

Indication	No. of Patients	Percentage (%)
Adenomyosis	02	4%
DUB	16	32%
Cervical Polyp	02	4%
Chronic Cervicitis	04	8%
Mentally Retarded	01	2%
Uterine Fibroid	25	50%
Total	**50**	**100%**

Discussion

The factors that may influence the route of hysterectomy for any surgical indication include uterine size, its mobility and generally the pathology confined to uterus with no adnexal masses[2].The major factor in determining the route of hysterectomy is transvaginal accessibility of the uterus.[9] Two factors limit accessibility- an

undescended, immobile uterus and a narrow vagina, < two fingerbreadths especially at the apex.[9] The presence of severe endometriosis, adnexal pathology, adhesions because of previous pelvic surgeries contraindicate vaginal hysterectomy.[9] With adequate vaginal access and good uterine mobility, NDVH can be easily performed. The uterosacral and cardinal ligaments are situated in close proximity to the vaginal vault and when they are clamped and cut, they produce first degree descent. Debulking in larger size uteri facilitates NDVH easily.This study aims to adopt NDVH as the primary route for all hysterectomies in benign conditions in the absence of prolapse. A total of 50 cases operated for NDVH were studied in our study conducted over a period of 2 years. Majority of the patients in our study were in the age group of 41-50 years (52%). Similar age distribution was noted in other case studies by Mehta S et al[10] (52%), Doppa G et al[11](49%), and Patel A et al[12](62%). In our study, 40% patients belonged to 31-40 years age group. In the study of Mehta et al, Doppa et al and Patel et al involvement of 31-40 years were seen in 38%, 40% and 24% respectively[10-12].Most of the patients in our study were parous (92%), majority being para 3 (36%). This was comparable to other studies by Dewan et al[13](2004), Bhadra et al [14](2011), Bandyopadhyay S et al[15] (2012), Mehla et al[16](2015), Pradeep S et al[17](2015) where majority of the patients were multiparous.Lax tissues following multiple deliveries and decreased tissue tensile strength provide comfort to the vaginal surgeon even in presence of uterine enlargement. Thus multiparity is a favorable factor for NDVH.8% patients in our study were nulliparous.The lack of uterine descent in nullipara is not a contraindication to vaginal hysterectomy. Studies done by Magos A et al[18](1996), Davies A et al (1996) have showed that it is possible and safe to carry out the procedure in women with no uterine prolapse as in cases with nullipara[19].There is no evidence that nulliparity is a risk factor for increased morbidity in NDVH[20]. The principle of the fear of performing NDVH in nulliparous women is lack of uterine descent, which is not a contraindication to NDVH.In our study, 3 out of 4 nulliparous patients successfully underwent NDVH. In 1 patient, bowel injury occurred while opening the pouch of Douglas. NDVH was completed vaginally after which colostomy was done. The total number of nulliparous women in any study is expected to be less when compared with parous women.Most of the patients in our study had more than one complaint. But most common complaint among them was menstrual irregularities, menorrhagia being the commonest (72%), not responding to medical treatment. This was comparable with other case studies done by Mittal P et al[2] (2014) and Vaishai Patil et Al[21](2015) in which menstrual irregularities was the most common complaint.In our study, 16% patients had uterine size $\geq$12 weeks. Maximum size of the uterus removed vaginally was 14 weeks. 84% patients had uterine size $\leq$ 10 weeks.Similarly majority of the cases had uterus size 10 weeks in other case series by Saha R et al[22] (2012), Chandana C et al[9] (2014) and Pradeep S[17] et al (2015).On the contrary Singh A et al[23] (2006) reported the incidence of uterine size $\geq$ 12 weeks as 18 out of 58 (31%) in cases operated for NDVH. Purohit RK[24] (2002) had reported performance of vaginal hysterectomy in upto 20 weeks uterine size with use of Purohit technique of vaginal hysterectomy with high success rate. In his study, 10.28% patients had uterus >12 weeks size.Bhadra et al[14] (2011) in their study had uterus of 12-20 weeks size in 16 patients out of 158 i.e. in 10% patients.Mehla et al[16] (2015) in their study had 13 cases out of 105 study cases (12.3%), with uterine size > 12 weeks.Ultrasound was useful in confirming the clinical diagnosis and the size of uterus, along with adnexal pathology. The most common finding on ultrasound examination in our study was uterine fibroid (50%). Next most common finding was normal sized uterus (34%). In the study done by Vaishai Patil et al (2015), most common finding on ultrasound was normal sized uterus (45%) and fibroid was the next most common finding[21]

Indication of NDVH

Table 5: Indication of NDVH

Indication	Kumar S et al[23] (2004)	Saha R et al[22] (2012)	Doppa G et al[11](2014)	Chandana C et al[9] (2014)	Pradeep S et al[17] (2015)	Present Study (2015)
Adenomyosis	5%	24%	5%	9%	15%	4%
DUB	12.5%	26%	39%	32%	22.5%	32%
Uterine Fibroid	**76%**	**46%**	**41%**	**43%**	**57.5%**	**50%**
Cervical Polyp	_	2%	_	3%	3.33%	4%
Chronic Cervicitis	2.5%	_	_	_	_	8%
Mentally Retarded	_	_	_	_	_	2%

The commonest indication for NDVH in our study was fibroid of uterus (50%)**.**Second most common indication was DUB (32%).Fibroid uterus was the commonest indication for NDVH in case series by Kumar et al[25] (2004), Saha R et al[22](2012), Doppa G et al[11](2014), Chandana C et al[9] (2014) and Pradeep et al[17] (2015). But DUB was the commonest indication in other case series done by Bhadra et al[14](2011), Alokananda et al[26] (2011), Mehta et al[10](2014).

Conclusion

Non-descent vaginal hysterectomy is a **scar less surgery.** NDVH is possible in bigger size uteri with use of different methods of debulking which is safe and it accomplishes the surgery by vaginal route in most of the cases. NDVH is performed safely in patients with previous pelvic surgeries and nulliparous women at the hands of experienced surgeon. NDVH is cost-effective. NDVH is safe in women with moderately enlarged uteri up to size 14 weeks.

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References

1. Wilcox L, Koonin L, Pokras R, Strauss L, Xia Z, Peterson H. Hysterectomy in the United States, 1988-90. Obstet Gynecol 1994;83:549-55.
2. Mittal P, Andiliya A, Bansiwal R, Jyotsna S, Sunita S. Enlarged uterus through a natural orifice: worth an effort? A randomized controlled trial. Int J Reprod Contracept Obstet Gynecol. 2014 ;3(4):1076-1081.
3. ACOG COMMITTEE opinion No.444: Choosing the route of hysterectomy for benign disease. Obstet Gynecol 2009 Nov;114(5):1156-8.
4. Nieboer TE, Johnson N, Lethaby A, Tavender E, Curr E, Garry R, et al. Surgical approach to hysterectomy for benign gynecological disease. Cochrane Database Syst Rev. 2009 ;(3):9.

5. Dicker RC, Greenspan JR, Scally MJ, Layde PM, Ory HW, Maze JM et al. Complications of abdominal and vaginal hysterectomy among women of reproductive age in the United States. Am J Obstet Gynecol 1982;144:841-48.
6. Ottosen C, Lingman G, Ottosen L. Three methods for hysterectomy: a randomised, prospective study of short-term outcome. BJOG. 2001;107:1380-5.
7. Taylor S, Romero A, Kammerer-Doak D, Qualls C, Rogers R. Abdominal Hysterectomy for enlarged myomatous uterus compared with vaginal hysterectomy with morcellation. Am J Obstet Gynecol. 2003 ;189(6):1579-82.
8. Schneider A, Merker A, Martin C, Michels W, Krause N. Laparoscopic assisted vaginal hysterectomy as an alternative to abdominal hysterectomy in patients with fibroids. Arch Gynecol Obstet. 1997;259(2):79-85.
9. Chandana C, Shreedhar V, Shah T. Non-descent vaginal hysterectomy for benign gynecological disease- A prospective study. Journal of Evidence based Medicine and Healthcare.2014;1(8):827-833.
10. Mehta S, Trivedi Y, and Bhalodia P. Role of non-descent vaginal hysterectomy in advancing gynecological practice. NHL Journal of Medical Sciences. 2014 Jan;3(1):9.
11. Doppa G, Gowder R, Rao T. Vaginal removal of non-prolapsed uterus with benign pathology. Indian Medical Gazette; 2014:90.
12. Patel AJ, Pawani CK. Non-descent vaginal hysterectomy: safety and feasibility. International Journal of Scientific Research. 2015;4(9):1.
13. Dewan R, Agrawal S, Minocha M, Sen B, Soumendra K. Non Descent Vaginal Hysterectomy- an experience. J Obstet Gynecol Ind. 2004 ;54(4):376-378.
14. Banashree Bhadra, Arun Paul Chaudhary, Amit Tolasaria, Nandi Nupur. Non descent vaginal hysterectomy: personal experience in158 cases. Al Ameen J Med Sci. 2011;4(1)23-27.
15. Bandhyopadhyay S, Pal M. Non descent vaginal hysterectomy-analysis of 100 cases. Asian Journal of Medical Sciences.2012; 3(1):1-5.
16. Mehla S, Chutani N, Gupta M. Non-descent vaginal hysterectomy: personal experience of 105 cases. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2015 ;4(1):61-65.
17. Pradeep S, Beeresh C, Krishna L, Vimala K, Shailaja N, Pallavi P, et al. Non-descent vaginal hysterectomy: Analysis of 120 cases. Journal of Evidence Based Medicine and Healthcare. 2015 ;2(32):4729-4735.
18. Magos A, Bournas N, Sinha R, Richardson RE, O'Connor H. Vaginal hysterectomy for the large uterus. BJOG: An International Journal of Obstetrics and Gynecology. 1996;103:246–51.
19. Davies A, O'Connor H, Magos AL. A prospective study to evaluate oophorectomy at the time of vaginal hysterectomy. BJOG: An International Journal of Obstetrics and Gynecology. 1996;103:915–20.
20. Kovac R, Barhan S, Lister M, Tucker L, Bishop M, Das A. Guidelines for the selection of the route of hysterectomy: application in a resident clinic population. Am J Obstet Gynecol. 2002 ;187(6):1521-7.
21. Patil V, Sonawane A, Patil P. Observational study for evaluation of clinical outcome of non-descent vaginal hysterectomy. IAIM. 2015;2(6):151-159.
22. Saha R, Shreshtha N, Bajracharya J, Padhye S. Non-descent vaginal hysterectomy: safety and feasibility. NJOG. 2012 Jul-Dec;7(2):14-16.
23. Singh A, Bansal S. Vaginal Hysterectomy for non-prolapsed uterus. J Obstet Gynecol India. 2006 ;56(2):152-155.
24. Purohit RK. Purohit technique of vaginal hysterectomy: A new approach performed in 214 patients. Gynecological Endoscopy.2002;11:423-430.
25. Kumar S, Antony ZK. Vaginal Hysterectomy for benign non-prolapsed uterus-initial experience. J Obstet Gynecol Ind. 2004;54:60-3.
26. Ray A, Pant L, Balsara R, Chaudhary R. Non descent vaginal hysterectomy: a constantly improving surgical art. J Obstet Gynecol of India. 2011;182-188.

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