



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

NON DESCENT VAGINAL HYSTERECTOMY VERSUS TOTAL ABDOMINAL HYSTERECTOMY- A PROSPECTIVE OBSERVATIONAL STUDY

KEY WORDS: Abdominal hysterectomy, Non-decent vaginal hysterectomy

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ABSTRACT

Among the most common procedures performed by the gynecologist all over the world including India is Hysterectomy. It is one of the most common elective surgeries in hysterectomy as operative modality. Factors influencing route of hysterectomy include accessibility and size of uterus, extent of adnexal pathology, surgeon training and experience. There are different routes of removal of uterus which is being used with abdominal hysterectomy is no doubt more popular route than vaginal route. An advance in anaesthesia, availability of transfusion services and antibiotics has made hysterectomy becoming the most common procedure in nonpregnancy related major surgical procedures. Many literature supports that vaginal hysterectomy is the cost effective and safe procedure for the removal of uterus also most regularly abdominal route is chosen. In this new era of minimally invasive surgery, a resurgence of interest and importance of VH for non-descent indications i.e. non-decent vaginal hysterectomy (NDVH) as the scar less hysterectomy has occurred as has many benefits over abdominal hysterectomy such as lesser post-operative morbidity, cosmetic advantages, better and rapid recovery. The objectives of the study was to compare and assess factors like operative duration of surgery, intra operative and post-operative complications, intra operative blood loss, post-operative requirement of analgesia, post-operative ambulating time and duration of post-operative hospital stay and to put forward best route of hysterectomy in non- descent cases. Compared to all other routes vaginal hysterectomy yields better outcome with less complications. The study was done on 50 cases fulfilling the inclusion criteria. Patients were randomly segregated in two groups- abdominal hysterectomy and NDVH (non-decent vaginal hysterectomy). Intra operative blood loss, Operative time and post-operative morbidity and hospital stay were less in NDVH groups. Non-decent vaginal hysterectomy is a better substitute to abdominal hysterectomy in cases with benign disorders of the uterus, with good mobility and adequate vaginal access.

INTRODUCTION:

The most common major gynecological surgery performed among women is Hysterectomy. Routinely, the uterus was removed via abdominal route as it gives enough visual field to look for the ovaries and adnexal areas while vaginal route being restrained for pelvic organ prolapsed cases. As of now significance of minimally invasive surgery has lead to arousal of interest in VH for non-prolapse indications i.e. non-descent vaginal hysterectomy (NDVH) which is also a scarless hysterectomy.

Almost 75% of these procedures are performed abdominally by surgeons in spite of having more incidence of complication, long duration of hospital stay and greater hospital charges in past but data obtained from hysterectomy surveillance studies states that there was 10% to 15% drop in the number of abdominal hysterectomy performed during early 1990s.^{1-5,7}

Factors influencing the route of hysterectomy for benign non-descent causes were size and shape of the uterus and vagina; approachability to the uterus; extent of extra uterine adnexal pathology; the need for concurrent procedures; surgeon experience, training and availability of hospital technology, devices and support; emergency or scheduled cases; and preference and consent of the informed patient.

Presently, three main types of hysterectomy procedures are in practice for benign conditions i.e. vaginal hysterectomy (VH), abdominal hysterectomy (AH) and Laparoscopic hysterectomy (LH). AH remains the most common option of uterine removal. This route can be used for malignancies, bulky uteri or when there are adhesions and removal of uterus is not possible through vaginal route.⁴ Overall mortality rates

for AH or VH are 0.1 - 0.2%^{4-6,8,9}

Vaginal route for non-prolapsed uterus is an acceptable method of hysterectomy in spite of previous belief that in some conditions it is contraindicated²²

Vaginal hysterectomy has clear cut health and economic benefits like less morbidities, better postoperative outcomes and decreased hospital stay with better patient satisfaction²⁷

METHODS:

The study was conducted in the Department of obstetrics and gynaecology, Sri Siddhartha Medical College, Tumkur, Karnataka, India. Total 50 patients who needed hysterectomy for conditions other than prolapsed uterus were included in the study. Of those 50 patients, 25 were subjected to vaginal hysterectomy.

A prospective study was done to compare the vaginal hysterectomy and abdominal hysterectomy in non- descent cases attended to Sri Siddhartha medical college.

Cases for the study were taken from those admitted for hysterectomy at outdoor fulfilling criteria via history, thorough examinations & aided by ancillary measures like pap smear, cervix biopsy, D&C and USG abdomen pelvis.

Table 1: Case Distribution according to age

Age (in years)	TAH	NDVH	Total
30-39	4 (16.0%)	5 (20.0%)	9 (18.0%)
40-49	15 (60.0%)	16 (64.0%)	31 (62.0%)
>=50	6 (24.0%)	4 (16.0%)	10 (20.0%)
Total	25 (100.0%)	25 (100.0%)	50 (100.0%)

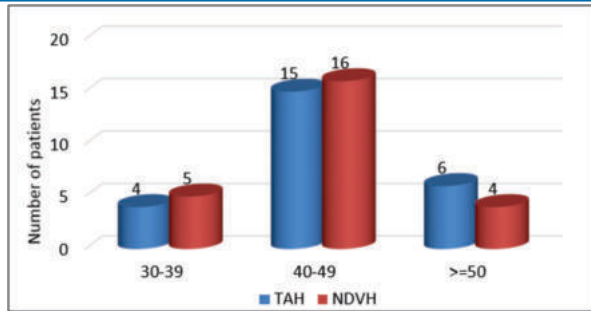


Figure 1: Distribution of cases according to age

Most of Patients were in age group 40-49 years (56% in TAH group & 70% in NDVH group)

Table 2: Distribution of cases on the basis of parity

Parity	TAH	NDVH	Total
P1L1	2 (8.0%)	3 (12.0%)	5 (10.0%)
P2L2	13 (52.0%)	10 (40.0%)	23 (46.0%)
P3L3	9 (36.0%)	10 (40.0%)	19 (38.0%)
P4L3	0 (0.0%)	1 (4.0%)	1 (2.0%)
P4L4	0 (0.0%)	1 (4.0%)	1 (2.0%)
P5L5	1 (4.0%)	0 (0.0%)	1 (2.0%)
Total	25 (100.0%)	25 (100.0%)	50 (100.0%)

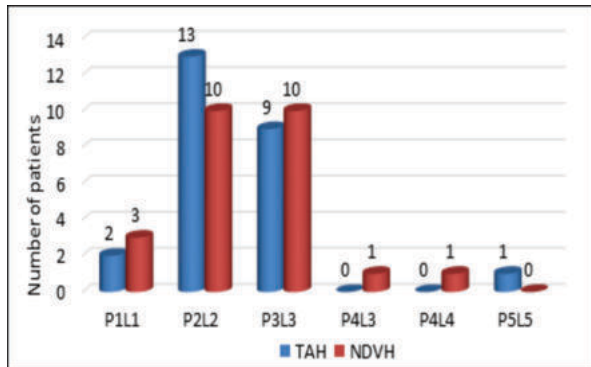


Figure 2: Distribution of cases according to parity

No significant difference in parity between both groups seen

Table 3: Distribution of cases according to indications of surgery

Indication	TAH	NDVH	Total
Adenomyosis	7 (28.0%)	10 (40.0%)	17 (34.0%)
CHR PID	3 (12.0%)	0 (0.0%)	3 (6.0%)
AUB-E	4 (16.0%)	4 (16.0%)	8 (16.0%)
Endometriosis	2 (8.0%)	0 (0.0%)	2 (4.0%)
Fibroid	9 (36.0%)	11 (44.0%)	20 (40.0%)
Total	25 (100.0%)	25 (100.0%)	50 (100.0%)

In this table the most common indication for TAH and NDVH was fibroid uterus followed by adenomyosis as second most common cause followed by AUB - E

Table 4: Comparison of variables between Total Abdominal Hysterectomy and Non-Descent Vaginal Hysterectomy

Variables	Group	N	Mean	Standard Deviation	Mean Difference	t-value	P-value
Duration Of Surgery (Min)	TAH	25	119.40	22.70	70.40	14.540	<0.001*
	NDVH	25	49.00	8.42			
Total Blood Loss (ml)	TAH	25	276.00	56.27	127.6	8.631	<0.001*
	NDVH	25	148.40	47.93			

Pain Score D3	TAH	25	5.36	1.04	1.56	6.060	<0.001*
	NDVH	25	3.80	0.76			
Ambulati on (Hours)	TAH	25	43.20	7.75	18.72	9.279	<0.001*
	NDVH	25	24.48	6.46			
Post Op Hb (gm%)	TAH	25	9.68	0.87	-0.92	-3.644	<0.001*
	NDVH	25	10.61	0.92			

* Statistically significant at P-value < 0.05

Blood loss and operative time for surgery were more when we used volume reductive methods. Mean blood losses in TAH were 276 ml while it was 148ml in NDVH GROUP. Mean operative time was 119 minutes in TAH while it was 49 minutes in NDVH. Mean operative duration is less in NDVH compared to TAH

Fever was there in 5(20%) cases of TAH Group, and 1 case of NDVH group, Wound infection was seen in 1 case of TAH and UTI was seen in among 3 cases in each group, vaginal cuff cellulitis was not seen any group. RTI was there in 2 cases of TAH and 1 case of NDVH group, Debulking technique was used in 3(12%) of the cases in TAH group and 7 (28%) of the cases in NDVH group. In our study, most of cases (66%) of NDVH got ambulated in <24 hrs post operatively while most of (50%) cases in TAH got ambulated in >48 hours. Mean post-operative hospital stay in TAH is 6.52 days while it is 4.28 days in NDVH group so post-operative hospital stay was more in TAH group compared to NDVH group.

DISCUSSION:

Hysterectomy is the most common gynecological procedure and it is important to make an evidence based decision to choose an appropriate route. Hysterectomy practice studies show that in past surgeons used to perform approximately 75% of these procedure via abdominal route in spite of well documented evidence that abdominal hysterectomy reported to have higher incidence of complications, greater hospital charges and longer duration of hospital stay than unassisted vaginal hysterectomy. The advantages of vaginal hysterectomy over abdominal hysterectomy gave rise to number of investigations to recommend vaginal hysterectomy for women with benign gynecological conditions. The present study between vaginal hysterectomy and total abdominal hysterectomy in non- descent uterus was done with the same interest.

Contraindications ofVH

- a) Absolute contraindications
- b) Bulky uterus (>280 gm)
- c) Narrow vaginal introitus
- d) Pubic arch <90°
- e) Bituberous diameter of <8 cm
- f) The uterus is not accessible or it has no descent
- g) Intra-abdominal conditions complicating the vaginal approach such as adhesions, endometriosis, chronic pelvic pain and adenexal pathology.

Relative contraindication

- a) Nulliparity
- b) History of any pelvic surgeries (other than C- Section)
- c) Indication for oophorectomy
- d) Moderately enlarged uterus

In this study the mean age of cases among TAH group was 44.7 yrs. and in NDVH group was 44.94 yrs. This is comparable to studies done by Hwang et al, Ribeiro et al, Silva filho et al which showed mean age of 45 years, 42.3 years, 45 years respectively¹³⁻¹⁵. In this study the mean parity in TAH and NDVH group was 3.58 and 3.46 respectively. This is comparable to Bharatnur S which had mean parity of 3.8 and 3.6 in TAH and NDVH group respectively¹⁶⁻¹⁷.

In present study fibroids was most common indication in both groups. In a study done by Shanthini NF et al most common indication was fibroid in TAH group as in our study but in NDVH group AUB was more common indication in Shanthini and all other studies.¹⁸

In the present study volume reductive methods were used in 15 cases. Mean blood loss among NDVH group was lesser than mean blood loss among TAH. Mean operative time was less in NDVH than mean operative time in TAH. Debulking technique was used in 3(12%) of the cases in TAH group and 7 (28%) of the cases in NDVH group.

Coulam *et al* in review of 621 hysterectomies concluded that previous pelvic surgery was not a contraindication for vaginal surgery²⁰. We had no case of ureteric injury and bowel injury in either group as in a study of Chakraborty S Somjita *et al*²¹. In this study mean blood loss was less in NDVH compared to TAH (148ml v/s 276ml.) This is comparable to studies done by Ribeiro *et al*¹⁴ and Alokandana R *et al*²². Operative time in our study was less in NDVH compared to TAH and this is comparable to studies conducted by Benassi *et al* (02), Hwang *et al* (02), Ribeiro *et al* (03), Raju *et al* (03), David Soriano (04), Silva Filho *et al* (06), Komal Modi *et al* (07).^{13-15,19,23-25}

In the present study NDVH cases had less febrile morbidity compared to TAH cases, but UTI was same in NDVH and TAH cases. We had no case of paralytic ileus in NDVH and in TAH. Wound infection in our study was 1 case (4%) of TAH which is comparable to Benassi *et al* (02), Miskry (03), Ray Alokandana *et al* (07), Somjita C *et al* (08).^{17,19,21-23,16} Vaginal cuff cellulitis was not seen in our study and no case of vault hematoma was seen in either study group. In the present study most cases in NDVH group (78%) required analgesia for 3 days post operatively and no case in NDVH group required analgesia beyond 5 days.

In TAH cases more than 50% cases required analgesia beyond 6 days. In studies of Santhini NF *et al* 2012 and Agarwal A *et al* analgesia was required for lesser number of days in NDVH cases compared to TAH cases.^{18,26} In this study most of the cases of NDVH (66%) were ambulatory in <24 hrs post operatively while most cases of TAH (50%) were ambulatory after 48 hrs. Modi K *et al* reported that most cases (85.3%) of NDVH got ambulatory in 24 hrs while most cases of TAH (84%) got ambulatory in 24-48 hrs.¹⁹ In our study most of the cases (70%) of NDVH had post-operative stay in hospital was of 4 days while no case of TAH had post-operative hospital stay was of less than 4 days. Study of Bharatnur S and Shanthini NF *et al* reported longer duration of hospital stay in NDVH (9.6 days, 8.1 days respectively) but still it was less than the hospital stay in TAH (11.1 days, 10.9 days respectively)^{16, 18}.

CONCLUSION:

From this study it is concluded that Non descent vaginal hysterectomy has benefits over abdominal hysterectomy in terms of:

- Cosmetically good i.e. scarless hysterectomy.
- Avoids all discomforts of abdominal incision.
- Less operative time.
- Less blood loss
- Less post-operative morbidity.
- Less intra operative and post-operative complications.
- Smooth post-operative period and faster recovery.
- Lesser requirement of post-operative analgesia.
- Enhanced patient comfort
- Early ambulation
- Short Hospital stay and early discharge.
- Early return to work and normal day to day activities.

At last in patients with associated medical problems like hypertension, diabetes mellitus and cardiovascular disease, non-descent vaginal hysterectomy is less invasive and better alternative to abdominal hysterectomy.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES:

1. Leping LA, Hillis SD, Kieke BA, Marchbanks PA, Koonin LM, Morrow B, Kieke BA, et al. Hysterectomy surveillance—United States, 1980–1993. Morbidity and mortality weekly report: CDC Surveillance Summaries. 1997;46(4):1-15.
2. Dicker RC, Greenspan JR, Strauss LT, Cowart MR, Scally MJ, Peterson HB, DeStefano F, et al. Complications of abdominal and vaginal hysterectomy among women of reproductive age in the United States: the collaborative review of sterilization. Am J Obstet Gynec. 1982;144(7):841-8.
3. Wilcox LS, Koonin LM, Pokras R, Strauss LT, Xia Z, Peterson HB, et al. Hysterectomy in the United States, 1988-1990. Obstetrics & Gynecology. 1994;83(4):549-55.
4. Kovac SR. Guidelines to determine the route of hysterectomy. Obstetrics & Gynecology. 1995;85(1):18-23.
5. Harris MB, Olive DL. Changing hysterectomy patterns after introduction of laparoscopically assisted vaginal hysterectomy. Am J obstetrics gynecology. 1994;171(2):340-4.
6. Querleu D, Cossom M, Parmentier D, Debodinance P. The impact of laparoscopic surgery on vaginal hysterectomy. J American Association Gynecologic Laparoscopists. 1994;1(4, Part 2):S29-S29.
7. Weber AM, Lee JC. Use of alternative techniques of hysterectomy in Ohio, 1988–1994. New England J Medicine. 1996;335(7):483-9.
8. Boike GM, Elfstrand EP, DelPriore G, Schumock D, Holley HS, Lurain JR, et al. Laparoscopically assisted vaginal hysterectomy in a university hospital: report of 82 cases and comparison with abdominal and vaginal hysterectomy. Am J obstetrics and gynecology. 1993;168(6):1690-701.
9. Kovac SR. Vaginal hysterectomy. Bailliere's Clin Obstet. Gynecol. 1997;11:95-110.
10. Davies A, Vizza E, Bournas N, O'Connor H, Magos A. How to increase the proportion of hysterectomies performed vaginally. Am J obstetrics gynecology. 1998;179(4):1008-12.
11. Kovac SR, Christie SJ, Bindbeutel GA. Abdominal versus vaginal hysterectomy: a statistical model for determining physician decision making and patient outcome. Medical Decision Making. 1991;11(1):19-28.
12. Kovac SR. Guidelines to determine the route of hysterectomy. Obstetrics & Gynecology. 1995;85(1):18-23.
13. Hwang JL, Seow KM, Tsai YL, Huang LW, Hsieh BC, Lee C. Comparative study of vaginal, laparoscopically assisted vaginal & abdominal hysterectomies for uterine myoma larger than 6cm in diameter or uterus weighing at least 450g: a prospective randomized study. Acta obstetrica et gynecologica Scandinavica. 2002;81(12):1132-8.
14. Ribeiro SC, Ribeiro RM, Santos NC, Pinotti JA. A randomized study of total abdominal, vaginal and laparoscopic hysterectomy. Int J Gynecology & Obstetrics. 2003;83(1):37-43.
15. Silva-Filho AL, Werneck RA, de Magalhães RS, Belo AV, Triginelli SA. Abdominal vs vaginal hysterectomy: a comparative study of the postoperative quality of life and satisfaction. Archives gynecology obstetrics. 2006;274(1):21.
16. Bharatnur S. Comparative study of abdominal hysterectomy versus vaginal hysterectomy in non-descent cases. Internet J Gynecology Obstetrics. 2010;15(2).
17. Miskry T, Magos A. Randomized, prospective, double-blind comparison of abdominal and vaginal
18. Hysterectomy in women without uterovaginal prolapse. Acta obstetrica et gynecologica Scandinavica. 2003;82(4):351-8.
19. Shanthini NF, Poomalar GK, Jayasree M, Bupathy A. Evaluation of complications of abdominal and vaginal hysterectomy. Int J Reprod Contraception Obstet Gynaecol. 2012;1(1):7-11.
20. Modi K, Patel S, Gupta S, Barnwal R, Desai A, et al. Non Decent Vaginal Hysterectomy A comparative analysis. IJSR. 2014;3(11):414-6.
21. Coulam CB, Pratt JH. Vaginal hysterectomy: Is previous pelvic operation a contraindication?. American journal of obstetrics and gynecology. 1973;116(2):252-60.
22. Chakraborty S, Goswami S, Mukherjee P, Sau M. Hysterectomy.....Which Route?. J Obstetrics Gynecology of India. 2011;61(5):554-7.
23. Alokandana R, Luna P, Roshan B, Chaudhary R. Non-Decent Vaginal Hysterectomy: a constantly Improving surgical Art. J Obstetrics and Gynecology India. 2011;61(2):182-8.
24. Benassi L, Rossi T, Kaihura CT, Ricci L, Bedocchi L, Galanti B, Vadora E. Abdominal or vaginal hysterectomy for enlarged uteri: a randomized clinical trial. Am J obstetrics gynecology. 2002;187(6):1561-5.
25. Raju VS, Girija BS. Comparison of vaginal hysterectomy for non-descent uterus with abdominal hysterectomy. Indian J Public Health Research & Development. 2014;5(1):15.
26. David Soriano MD Daniel S. Seidman Evidence based Obstetrics & Gynecology - Vol 6, Issue 1 (March 2004) - Copyright ©2004 Churchill.
27. Mahasani V, Suchdeva R, Aggarwal A. Hysterectomy-which approach. People's J Scientific Research. 2014;7(1):17-21.
28. McCracken G, Lefebvre GG. Vaginal hysterectomy: Dispelling the myths. JOGS. 2007;29(5):424-7.