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Feasibility of non-descent vaginal hysterectomy in patients with previous cesarean scar: A comparative study

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Abstract
It is a retrospective, comparative, observational study conducted in the Department of obstetrics and gynecology, Bombay hospital from 1st August 2010 to 31st July 2011, where comparison was done between 22 patients undergoing non decent vaginal hysterectomy (NDVH) and 29 patients undergoing abdominal or laparoscopic hysterectomy.
Parameters analyzed were operating time, estimated blood loss, post operative pain, hospital stay, cost effectiveness and complications.
Results: The demographic profile was similar for all three groups. The vaginal group included a large number of patients with high risk factors and co-morbidities. The operating time, average hospital stay, pain score, blood loss and post-operative complications were more in the abdominal and laparoscopic groups. No patient in the vaginal group required conversion to abdominal or laparoscopic hysterectomy.
Conclusion: Benign uteri of upto 16 weeks sizes and fibroids upto 10.5 cm. could be removed vaginally with no increased risk of surgical or post-surgical complications.

Keywords: Non descent vaginal hysterectomy, hysterectomy, bladder injury, laparoscopic hysterectomy

Introduction
Hysterectomy is one of the most commonly performed gynecological procedures. The first hysterectomy was documented by Conrad Langen Beck in 1817. He had performed a vaginal hysterectomy in 1813 and the woman had an uneventful course and lived another 26 years [1]. Hysterectomy can be performed by three routes-abdominal, vaginal, and laparoscopic. The ease of performing abdominal hysterectomy with big incisions and good exposure made it a popular route among gynecologists for many years. However, it has many disadvantages which include increased post-operative morbidity, longer hospital stay, more pain, increased incidences of wound sepsis, dehiscence, hernia and ugly abdominal scars. This led to evolution in the vaginal route and non-decent vaginal hysterectomy [NDVH] is an effective alternative for benign diseases. It is a natural route hysterectomy with no visible scar, safe, cheap and gives better result. NDVH is removal of the uterus through the vagina in the absence of uterine descent. The key to successful NDVH is proper case selection with good vaginal access, uterine mobility and technical expertise. With the advent of laparoscopy in 1990, it could overcome several limitations of vaginal hysterectomy and convert a potential abdominal hysterectomy to laparoscopic assisted vaginal hysterectomy [2]. But it involves higher cost, longer operating time, specially trained personnel and equipment and electro surgical complications. NDVH offers the advantages of laparoscopic hysterectomy and abdominal hysterectomy in terms of post-operative comfort and cost effectiveness respectively while overcoming the many disadvantages of both laparoscopic and abdominal hysterectomies.

Aims and objectives
- To assess the feasibility of vaginal route in cases with previous LSCS.
- Compare the clinical outcome of NDVH with abdominal and laparoscopic surgeries done by other unit surgeons in the institute in patients with previous LSCS.
- Analyze effect of cesarean birth on complication rate of vaginal hysterectomy.

Methods
It is a retrospective and prospective study of 51 patients with previous LSCS undergoing

hysterectomy for benign and premalignant causes without prolapse. The study was conducted over a period of one year in the department of obstetrics and gynaecology, Bombay hospital, Mumbai from 1st August 2010 - 31st July 2011. 22 patients underwent vaginal hysterectomy while 19 & 10 patients underwent abdominal and laparoscopic hysterectomies.

The route of hysterectomy was decided in accordance with patient and surgeon preference. Patients with uterine size more than 16 weeks, restricted mobility and severe endometriosis were not included in the vaginal group.

An informed written consent was taken from all patients explaining the procedure and possible risk and conversion to abdominal hysterectomy if needed. Preoperative vaginal examination was done for all patients to note uterine size, shape, mobility and vaginal laxity. Preoperative investigations included complete blood count, blood sugar, renal function test, ECG, chest x-ray, endometrial biopsy and ultrasound pelvis. Morcellation techniques like myomectomy coring and debulking were done where required. Parameters analyzed were operating time, estimated blood loss, post-operative pain, hospital stay, recovery mile stone, cost effectiveness and complications.

Principles of NDVH in previous LSCS: In previous LSCS, bladder is adherent and pulled up on to lower uterine segment. Injuries occur when bladder is pushed down on cervix in total laparoscopic hysterectomy/total abdominal hysterectomy; as bladder is reached before the scar. In NDVH, during dissection of anterior pouch, scar is encountered before the bladder, limiting chances of injury.

In NDVH-preferable to open the posterior pouch first to access the uterosacrals and cardinal ligaments, obtain uterine descent and ligate the uterine vessels. At the site of previous scar, bladder may be sharply dissected away by the lateral window approach.

Anterior peritoneum may be opened at the end during delivery of uterus.

All the non-descent vaginal hysterectomies were performed using the technique of clampless vaginal hysterectomy where the various ligaments were first double ligated and then cut. In a few cases, vessel sealing device was also used. The advantage of this technique is feasibility and ease especially in cases where vaginal roominess is less with big bulky uterus. Anterior peritoneum may be opened at the end during delivery of uterus.

Results & observation

Table 1 depicts the demographic profile of the patients. The mean age group and parity are comparable in all three groups. Table 1 also shows the number of cesarean section wise distribution of patients. Nine patients in each groups had prior 2 LSCS. 13 patients in NDVH, 7 patients in AH (abdominal hysterectomy) and 1 patient in LH (laparoscopic hysterectomy) had previous 1 LSCS. The AH group also had 3 patients with previous 3 LSCS. With regards to patients with high risk factors, it is very evident that NDVH group included most of the patients with co-morbidities and high risk factors.

Among the indications for hysterectomy (Table 2) AUB (abnormal uterine bleeding) and leiomyomas were the main indications in NDVH group while, leiomyomas were the main indications in both abdominal and laparoscopic route.

Table 3 shows the clinical outcome among the patients in all three groups. The mean operating time, average hospital stay, and mean blood loss were much less in the NDVH group as compared to the other two groups. The LH group required maximum operating time. The mean blood loss was also more. Pain score was evaluated by asking the patients to rate their degree of pain on 2nd post of day from a scale of 1-10. The average pain score was least in the NDVH group and highest in AH group. Recovery days were taken as the number of days the patient required to resume routine work. Patients undergoing NDVH returned to routine work much faster while the patients in AH group required more days for rest. Cost wise, the LH group incurred most expenditure.

The most common post-operative complications were nausea and vomiting followed by fever. Nausea vomiting, hematoma formation, post-operative fever and paralytic ilius occurred more frequently in the AH group followed by LH group and least in the NDVH group. Blood transfusions were required in 10% patients in LH group & 5.2% patients in AH groups. None in the NDVH group required Blood Transfusion. Wound related complications occurred among 10% patients in LH group only. However transient numbness of legs, probably due to lithotomy position was observed among 9% of patients in NDVH group.

Table 4 shows that in 16 out of 27 patients in the NDVH group, surgery was completed within 1 hour. Morcellation techniques were more frequently used in the NDVH group as depicted in Table 5.

3 patients in the NDVH group required preoperative or intraoperative diagnostic laparoscopy to assess feasibility of NDVH in cases of big leiomyomas or to rule out extensive adhesion; however none required conversion to abdominal hysterectomy or laparoscopic hysterectomy.

Table 1: Demographic profile

Age & Parity (No)								No. of Prev. LSCS (No)				Patients with High Risk Factors (No)			
AGE	**Vag**	**Abd**	**Lap**	**Parity**	**Vag**	**Abd**	**Lap**	**No. of prev. LSCS**	**Vag**	**Abd**	**Lap**	**Medical factors**	**Vag**	**Abd**	**Lap**
20-30	5	-	-	1	6	3	-	1	13	7	1	Hypertension	3	2	1
30-40	15	9	3	2	12	11	4	2	9	9	9	Hyperlipidemia	1		
40-50	1	9	6	3	4	4	4	3		3		Kidney transplant	1		
50-60	1	-	1	4		1	2	4				Open heart surgery	1		
>60		1		5								HTM & DM	1		
												DM	1	1	
												Hyperthyroidism	3		

Vag- Vaginal Group
Abd- Abdominal Group
Lap- Laparoscopic Group

Table 2: Indication for surgery

Route of Hysterectomy			
Surgical Indication	**Vaginal (No)**	**ABDO (No)**	**Lap (No)**
DUB	10	3	4
Fibroids	7	11	1
Adenomyosis	2	2	5
Endometriosis			
Benign adnexal mass	2	2	
Endo hyperplasia			
PM bleeding	1	1	
Total	22	19	10

Table 3: Clinical outcome and complications

Cliical Outcome			
Parameters	**VH**	**TAH**	**LAVH/TLH**
Mean Op time (hours)	1.5	2.5	3
Avg Hospital stay (days)	2.5	4	3.5
Pain score (1-10)	3	5	4
Mean blood loss (ml)	120	130	150
Recovery (Days)	15	30	20
Cost. (Rs.)	25000	25000	35000
Complications	(%)	(%)	(%)
Nausea & vomiting	22.11 (%)	31.5 (%)	20 (%)
Haematomas	0	5.2 (%)	0
Post op pyrexia	4.5 (%)	21%	10 (%)
Paralytic ileus	0	10%	0
Blood transfusion	0	5.2%	10%
Wound sepsis	0	0	10%
Numbness of leg.	9%	0	0

Table 4: Operating time for VH

<1 Hour	(1-2) Hours	(2-3) Hours
16	5	1

Table 5: Morcellation Techniques used

Morcellation Techniques	VH (No)	ABD Hyst (No)	Lap Hyst (No)
Debulking	2	2	5
Myomectomy	1	2	
Debulking & Myomectomy	1		

Discussion

Abdominal hysterectomy constitutes around (70-80%) of hysterectomies done for benign cases, while vaginal hysterectomies are usually performed for prolapse [3].

With increasing trend of cesarean births, the number of women requiring hysterectomy with previous LSCS is also increasing [4]. Fear of uterovesical adhesion and inadvertent bladder injuries had limited the scope of vaginal hysterectomy in these women [5, 6].

It has been observed that mobilization of bladder from scar is difficult without regard to the route of hysterectomy. Rather, it is more feasible to dissect the bladder away from the scar in NDVH, as the scar is encountered before bladder as we approach from below [7, 8].

NDVH also has a distinctive advantage in obese patients, as the amount of fat in vulva, vagina is much less as compared to the anterior abdominal wall, thereby offering better exposure in vaginal route and eliminating the risk of wound sepsis or dehiscence in these patients [9, 10].

NDVH is a natural orifice surgery with no scar and maximum health and cost benefits [11]. As seen in our study, most patients with co-morbidities could be included in the NDVH group as general anesthesia and trendelenburg position could be avoided while at the same offering the benefits of shorter operating time and blood loss.

Proper selection of cases with intelligent counseling together with skill and experience of surgeon are important factors for successful NDVH. With adequate vaginal access and good uterine mobility, vaginal hysterectomy can be done in patients with one, two or three previous section [12, 13]. In cases of large leiomyomas, it is important to use morcellation techniques such as debulking, coring and myomectomy to reduce the uterine volume [14].

NDVH needed less operating time (Average 1.5 hrs) in our study as compared to LH and AH. This is comparable to other studies such as Abral S, *et el*., Pradeep Kumar *et al.* [15]. In a study conducted by Garg *et al.*, where he compared 23 patients undergoing VH and 23 patients undergoing AH, he observed a shorter operating time, less intraoperative blood loss, less postoperative morbidity and shorter hospital stay in the VH group [16].

In a similar study, McCracken *et al*. concluded that intraoperative & postoperative complications were much less in vaginal route [17].

Similar observation is noted in our study

A systematic cochrane review of nine RCTs including works of Ottosen, Benassi, Hwang, Miskrug, Ribeiro, Garry, Silva Filho, Vasira and co-worker, and Gayak *et al*. was conducted by Nilboer *et al*. This study confirmed that vaginal hysterectomy in better than abdominal, laparoscopic & LAVH in terms of intraoperative & postoperative outcome [18-28].

All the patients posted for NDVH were successfully completed with no conversion. Similarly kumar *et al*. in a study conducted on 80 patients posted for NDVH, had a success rate of 95% [29].

In another Cochrane review of 34 randomized trials of abdominal, laparoscopic and vaginal hysterectomies including 4455 patients, summarized that vaginal route has the best outcome [30].

Limitations

This is a single centre study and hence the results cannot be extrapolated to the whole population. Large multi centric studies are required to prove statistical significance.

Psycho sexual factors and long term post-operative effects were not taken into consideration

Conclusion

NDVH has evolved over the course of many years, with decreasing limitations and increasing its scope to include patients with previous CS, big leiomyomas, obesity and high risk factors. The vaginal approach is superior and should be the preferred route for benign uteri less than 16 weeks size. It is safe, less invasive with benefits of shorter hospital stay and faster recovery.

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Author's contribution: Dr. Rumi conceived the subject topic and

was responsible for data collection, planning and basic draft of the article. Dr. Nitin was involved in data analysis, critical review and final drafting of the article. Introduction, methods and results were written by Dr. Rumi, discussion was written by Dr. Nitin.

Ethics approval: As it is a retrospective observational study; ethics committee approval was not sought.

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References

1. Sutton C. Hysterectomy: a historical perspective. Baillieres Clin Obst Gynecol. 1997; 11:1-22.
2. Reich H. Laparoscopic hysterectomy. Gynaecol Surg. 1989; 5:213-16.
3. Bhandra B, Choudhary AP, Nagpur AJN. Non descent vaginal hysterectomy; Personal experience in 158 cases. J Med Sci. 2011; 4:23-7.
4. Purohit RK, Sharma JG, Singh S, Giri DK. Vaginl hysterctomy by electro surgery for benign Indications associated with previous csarean secction. J Gynecol Surg. 2013; 29(1):7-12.
5. Rooney CM, Crawford AT, Vassallo BJ. Is previous cesarean sectiona risk for incidental cystotomy at the time of hysterectomy? A case controlled study. Am J Obster Gynecol. 2005; 193:2041.
6. Lafay Pillet MC, Leonard F. Chopin N, Incidence and risk factors of bladder injuries during Laparoscopic hystrectomy indicated for benign uterine pathologies: a 14.5 year experience in a continours series of 1501 procedures. Hum Reprod. 2009; 24:842.
7. Coppenhaver EH. An analysis of indications and complications among 1000 operations. Am J Obster Gynecol. 1962; 84:123-128.
8. Dicker RC, Greenspan JT, Strauss LT *et al*. Complications of abdominal and vaginal hysterectomy among women of reproductive age in the United States. Am J Obstet Gynecol. 1982; 144-841-848.
9. Pitkin RM. Vaginal hysterectomy in obese women, Obstet Gynecol. 1977; 49:567.
10. Pratt JH, Daikoku NH. Obesity and vaginal hysterectomy, J Reprod med. 1990; 35:945.
11. Bandyopadhyay S, Pal M. Non descent vaginal hysterectomy. Analysis of 100 cases, Asian J Medical Science. 2012; 3:1-5.
12. Umeora OUJ, Onoh RC, Eze JN, Igberase GO. Abdominal versus vaginal hysterectomy: Appraisal of indications and complications in a Nigerian federal medical centre. Nep Journ OG. 2009; 4(1):25-29.
13. Dicker RC, Scally MJ, Greenspan JR. Hysterectomy among women of reproductive age trends in USA 1970-78. JAMA. 1982; 248:223-27.
14. Kovac RS. Intramyometrial coring as an adjunct to vaginal hysterectomy. Obstet Gynecol. 1986; 67:131-136.
15. Garg P, Malhotra N, Deka D. Vaginal approach for hysterectomy in benign conditions of the uterus at a rural health setting, Obstet Gynecol Today, 2003, 520-2.
16. Garg PK, Deka D, Malhotra N. Non-descent vaginal hysterectomy for Benign Condition. A better proposition than abdominal hysterectomy. Obst & Gynaec Today. 2002; 7(6):345-46.
17. McCracken G, Hunter D, Morgan D, Price JH. Comparison of laparoscopic-assisted vaginal hysterectomy, total abdominal hysterectomy and vaginal hysterectomy. Ulster Med J. 2006; 75(1):54-58.
18. Doucette RC, Sharp HT, Alder Sc. Challenging generally accepted contraindication to vaginal hysterectomy. American J Obstet Gynaecol. 2001; 184:1386-89.
19. Nieboer TE, Johnson N, Lethaby A, Tavender E, Curr E, Garry R *et al*. Surgical approach to hysterectomy for benign gynaecological disease. Cochrane Database Syst Rev. 2009; 3:CD003677.
20. Ottosen Consultant, Lingman G, Ottosen L. Three methods for hysterectomy: a randomized, prospective study of short term outcome. BJOG. 2000; 107:1380-85.
21. Benassi L, Rossi T, Kaihura CT, Ricci L, Bedocchi L, Galanti B. Abdominal or vaginal hysterectomy for enlarged uteri: a randomized clinical trial. Am J Obstet Gynecol. 2002; 187:1561-65.
22. Hwang JL, Seow KM, Tsai YL, Huang LW, Hsieh BC, Lee C. Comparative study of vaginal, laparoscopically assisted vaginal and abdominal hysterectomies for uterine myoma larger than 6 cm in diameter or uterus weighing at least 450 g: a prospective randomized study. Acta Obstetricia ET Gynecologica Scandinavica. 2002; 81:1132-8. doi: 10.1034/j.1600-0412.2002.811206.x.
23. Miskry T, Magos A. Randomized prospective double-blind comparison of abdominal versus vaginal hysterectomy in women without utero-vaginal prolapse. Acta Obstet Gynecol. 2003; 82:351-58.
24. Ribeiro SC *et al*. A randomized study of total abdominal, vaginal and laparoscopic hysterectomy. International Journal of Gynecology and Obstetrics. 2003; 83(1):37-43.
25. Ray G, Jayne F, Su M, Jeremy H, Vicky N, Jason A *et al*. The evaluate study: two parallel randomized trials, one comparing laparoscopic with abdominal hysterectomy, other comparing laparoscopic with vaginal hysterectomy. BMJ. 2004; 328:129.
26. 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. Arch Gynecol Obstet. 2006; 274:21-24.
27. Dawood NS, Mahmood R, Haseeb N. Comparison of vaginal and abdominal hysterectomy: peri- and postoperative outcome. J Ayub Med Coll Abbottabad. 2009; 21(4):116-20.
28. Gayak K, Smitha A, Tripathy J. Abdominal versus vaginal hysterectomy in non-descent cases. Int J Reprod Contracept Obstet Gynecol. 2015; 4:419-23.
29. Sushil K, Antony ZK. Vaginal hysterectomy for benign nonprolapsed uterus. Initial Experience. J Obstet Gynaecol Ind. 2004; 54(1):60-63.
30. Shivani Abrol, Shazia Rashid *et al*. Comparative analysis of non-descent vaginal hysterectomy verses total abdominal hysterectomy in benign uterine disorders. International Journal of Reproduction, Contraception, Obstetrics and Gynaecology. 2017; 6(3):846-849.