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Research Article

Comparative study between vaginal and abdominal hysterectomy in non-descent cases

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ABSTRACT

Background: Hysterectomy is the major gynaecological surgery performed by gynaecologist all over the world. Various approaches have been tried by gynaecologist all over the world including abdominal, vaginal, laparoscopic, notes and robotic hysterectomy. Vaginal approach greatly reduces complications, decreases hospital stay, lowers hospital charges, post-operative discomfort and cosmetically better compared to abdominal and laparoscopic approaches. Vaginal hysterectomy in large sized uterus can be facilitated by bisection, myomectomy, debulking, coring and clamp less approach. The aim and objective of the study was to compare outcome of NDVH with outcome of TAH in terms of post-operative morbidity and duration of hospital stay.
Methods: A total of 100 cases were selected with enlarged uterus of which 50 underwent NDVH and rest 50 underwent TAH. All patients were evaluated for operative time, intra-operative and post-operative complications and duration of hospital stay. Data were recorded and processed and standard statistical software were used.
Results: Patients undergoing NDVH had an average operating time of 48.68 mins whereas for those undergoing TAH was 92.52 mins ('p'- value <0.001). Intra-operative complications were noted in 2% of patients undergoing NDVH whereas in 20% of patients undergoing TAH ('p'- value 0.016). Post-operative complications were noted in 34% of patients undergoing NDVH v/s 70% in TAH ('p'- value <0.001). Patients undergoing NDVH had a mean hospital stay of 5.96 days whereas 9.10 days in those undergoing TAH ('p'- value <0.001).
Conclusions: NDVH is associated with decreased operative time, post-operative morbidity, early ambulation and early discharge from hospital compared to TAH.

Keywords: Hysterectomy, NDVH, TAH

INTRODUCTION

Hysterectomy, abdominal, vaginal or laparoscopic assisted vaginal hysterectomy is the most commonly performed elective major gynaecological surgery.[1]

The current ratio of abdominal to vaginal hysterectomy is 3:1 for the treatment of benign disorders. The ratio should be reversed because fewer post-operative complications are associated with the vaginal route, which allows earlier recovery and return to work.[2]

Vaginal Hysterectomy is a technique that had already been introduced and performed centuries ago but with little success among gynaecologist probably because of an in experience or lack of enthusiasm among gynaecologist who performed the abdominal route believing it to be safer and easier procedure. In recent decade increased expertise has been achieved by the gynaecologist and better compliance has been reported by the patients. This has led to increased number of vaginal hysterectomies compared to abdominal hysterectomies.

Vaginal surgery is least invasive and results in better quality of life. Many nulliparous women and many women who have undergone caesarian delivery do infact have sufficient vaginal capacity to allow vaginal hysterectomy. As long as surgeon can obtain adequate

access for division of uterosacral and cardinal ligaments and uterus can be mobilized sufficiently to allow vaginal extraction. The emphasis on minimally invasive surgery has led to resurgence of interest and importance of vaginal hysterectomy for non-prolapse indication, i.e. non-descent vaginal hysterectomy.

Vaginal approach greatly reduces complications decreases hospital stay, lowers hospital charges and post-operative comfort is better.[3] Vaginal hysterectomy in true sense is a scar less hysterectomy. Vagina is the ideal and most natural route to approach the uterus along with the availability of good anesthesia, light, better suture material, electrosurgical technique, exploration of uterus through vaginal route is becoming increasing popular.

Laparoscopically assisted vaginal hysterectomy or total laparoscopic hysterectomy although constantly gaining ground is associated with higher cost and longer duration of operating time and involves large number of specially trained personnel. With increasing concern over the containment of healthcare cost, there is need for expanding the indications for performing hysterectomy by vaginal non-laparoscopic methods.

A narrow sub-pubic arch, narrow vagina, an undescended immobile uterus, prior caesarian delivery and enlarged uterus has been proposed by some authors as contra-indications for vaginal hysterectomy. However vaginal hysterectomy can be successfully done in above conditions.[4] Extra-uterine diseases such as adnexal pathology, severe endometriosis, adhesions may preclude vaginal hysterectomy. Vaginal hysterectomy in large sized uterus can be facilitated by bisection, myomectomy, debulking, coring and clampless approach.[5]

Gynaecologist should become vaginal surgeon and should believe that every uterus can be removed vaginally unless contra-indicated.[6]

METHODS

The study was carried out at Shri Vasantrao Naik Government Medical College and Hospital, Yavatmal, a tertiary care institute. Total 100 cases were admitted to the Gynaecology unit requiring hysterectomy for enlarged uterus were randomly selected out of which 50 cases underwent NDVH and 50 cases underwent TAH for same indications during the study period between June 2012 to November 2014.

Patients with enlarged uterus with size not more than 12 weeks, adequately uterine mobility, fibroid uterus, dysfunctional uterine bleeding, chronic cervicitis, adenomyosis, posted for laparoscopically assisted vaginal hysterectomy and patients with 2 or more LSCS were included in our study. Patients with uterine size more than 12 weeks, restricted uterine mobility, pelvic organ prolapse and patients with complex adnexal mass were excluded from the study.

Every patient was clinically evaluated and investigated. Written informed consent was taken from all patients. After proper fitness and pre-anesthesia checkup patient were posted for hysterectomy. Patients were divided into two groups. 50 patients underwent Vaginal Hysterectomy and the rest underwent total abdominal hysterectomy.

Vaginal hysterectomy was done by Haeney's technique. Abdominal Hysterectomy was done using standard suprapubic transverse incision. Operating time for NDVH was calculated from incision at cervico-vaginal junction to the completion of closure of vault. Operating time for TAH was calculated from incision on the abdomen to closure of skin incision. Intra-operative complications like adhesion, injury to bladder and bowel and hemorrhage were noted. Standard surgical protocols were followed.

Post-operatively time taken for the patient to ambulate voluntarily was noted. Post-operative complications like fever, pain, bladder bowel disturbances, bleeding and wound infection were noted. Duration of hospital stay was recorded.

Statistical analysis was done by descriptive and inferential statistics using Chi-square test and Students unpaired't' test. Software used in analysis were SPSS version 17 and Microsoft office Word and Excel version 13. Data was analyzed as graphs and charts.

RESULTS

Table 1: Distribution of patients according to the size of uterus.

Size of uterus(in weeks)	NDVH	TAH
Bulky	26(52%)	25(50%)
8	4(8%)	0 (0%)
10	11(22%)	11(22%)
12	9 (18%)	14(28%)
Total	50(100%)	50(100%)

Majority of the patients were in 5th or 6th decade of life (36 to 55 years). Most of the patients were in their para 3 or 4. 93 patients had previous normal vaginal delivery and 7 patients had history of caesarian section. 21 patients had history of previous abdominal surgery in the past.

In this study, maximum patients had bulky uterus. In NDVH group, 11 patients had uterine size of 10 weeks and 9 cases had uterine size of 12 weeks. In TAH group, 11 patients had uterine size of 10 weeks and 14 cases had uterine size of 12 weeks.

NDVH was done for 15 cases of uterine fibroid, 13 cases of adenomyosis 9 cases of DUB, 9 cases of chronic cervicitis, 2 cases of endometrial polyp with fibroid and 2 cases of cervical polyp with fibroid. TAH was done for 25 cases of fibroid, 9 cases of adenomyosis, 7 cases of DUB, 7 cases of chronic cervicitis, 1 case of endometrial polyp with fibroid and 1 case of adenomyosis with fibroid.

Table 2: Distribution of patients according to their diagnosis.

Diagnosis	NDVH	TAH
Fibroid	15 (30%)	25(50%)
Adenomyosis	13(26%)	9(18%)
DUB	9(18%)	7(14%)
Chronic cervicitis	9(18%)	7(14%)
Endometrial polyp with fibroid	2(4%)	1(2%)
Adenomyosis with fibroid	0 (0%)	1(2%)
Cervical polyp with fibroid	2(4%)	0(0%)
Total	50(100%)	50(100%)

Entire uterus was removed in 38 cases of NDVH whereas technique of bisection was used in 10 patients and myomectomy in 2 cases for easy removal of uterus in NDVH group.

Table 3: Distribution of patients according to technique used for removal of uterus in NDVH group.

Technique used for removal of uterus in NDVH	No of patients (%)
Entire	38(76%)
Bisection	10(20%)
Myomectomy	2(4%)
Morcellation	0(0%)
Total	50(100%)

Mean operative time for NDVH group was 48.68 minutes and mean operative time for abdominal group was 92.52 minutes which was significantly more as compared to NDVH group.

Table 4: Comparison of operative time (mins) in both groups.

Operative time(min)	mean	SD	t-value	p - value
NDVH	48.68	5.04	17.69	< 0.001 highly significant
TAH	92.52	16.77		

49 out of 50 patients in NDVH group were without any intra-operative complications. 1 case of NDVH was complicated due to adhesions. 40 out of 50 patients in TAH group were without any complications. 1 case was complicated by urinary bladder injury and 9 were complicated by adhesions. The difference between the 2 groups with respects of intra-operative complications was statistically significant.

Table 5: Comparison of intra-operative complications in both groups.

Intra-operative complications	NDVH	TAH	P - value
None	49(98%)	40(80%)	0.016 significant
Bowel injury	0(0%)	0(0%)	
Bladder injury	0(0%)	1(2%)	
Adhesions	1(2%)	9(18%)	
Total	50(100%)	50(100%)	

Table 6: Post-operative requirement of blood.

Post-operative requirement of blood transfusion	NDVH	TAH	p- value
Required	1(4%)	23(46%)	< 0.001 highly significant
Not required	49(98%)	27(54%)	
Total	50(100%)	50(100%)	

Table 7: Comparison of post-operative ambulation.

Post-operative ambulation (hours)	NDVH	TAH	p - value
After 24 hours	50(100%)	0(0%)	< 0.001 highly significant
After 48 hours	0(0%)	50(100%)	
Total	50(100%)	50(100%)	

Table 8: Comparison of post-operative complications in both groups.

Post-operative complications	NVDH	TAH	p - value
None	33(66%)	15(30%)	<0.001 Highly significant
Fever	8(16%)	12(24%)	
Urinary tract infection	4(8%)	2(4%)	
Respiratory tract infection	5(10%)	5(10%)	
Paralytic ileus	0(0%)	4(8%)	
Wound infection	0(0%)	12(24%)	
Vault hematoma	0(0%)	0(0%)	
Total	50(100%)	50(100%)	

Need for post-operative blood transfusion was significantly higher in TAH group as compared to NDVH group. Blood loss was more in TAH group with 23 patients requiring blood transfusion whereas it was les in NDVH group with 1 patient requiring blood transfusion.

All cases of NDVH were ambulatory after 24 hours whereas all cases of TAH were ambulatory by 48 hours. Difference between in post-operative ambulation in both the study groups was statistically significant.

33 out of 50 patients in NDVH group were without any post-operative complications, 8 patients had fever in post-operative period whereas 4 patients had urinary tract infections and 5 patients had respiratory tract infection. 15 out of 50 patients in TAH group were without any post-operative complications, 12 patients had fever in post-operative period, 2 had urinary tract infection, 5 patients had respiratory tract infection, 4 patients had paralytic ileus and 12 patients had wound infection.

Mean duration of hospital stay for NDVH group was 5.96 days whereas for abdominal group was 9.10 days. Difference between the two study groups with respect to hospital stay was statistically significant.

Table 9: Comparison of duration of hospital stay.

Group	Mean Duration of hospital stay (days)	SD	p - value
NDVH	5.96	049	<0.001 highly significant
TAH	9.10	2.65	

Table 10: NDVH comparable with various previous studies.

	Present study	Saha R[7]	Sheetal Mehata[8]	Shahana Begum[9]
Operative time (min)	48.6	60	50	90
Intra-operative complications (% of patients)	1	6	5	9
Post-operative requirement of blood transfusion (% of patients)	2	2.1	1	3
Post-operative ambulation (hours)	24	24	24	12
Post-operative complications (% of patients)	24	8	5	3
Mean Duration of hospital stay (days)	5.96	3	3.4	2.5

DISCUSSION

The earlier vaginal hysterectomy were usually done for uterine prolapsed or inversion. According to medical historian Leonardo Vaginal hysterectomy was performed by Saronus in 2nd century on a gangrenous uterus.[7] In 1895, Garceau of France introduced vaginal hysterectomy for carcinoma of cervix, large fibroid, uteri prolapsed and infection. He was the first to introduce hemisection and morcellation of uterus to accompany vaginal removal. Majority of the indications for vaginal hysterectomy in the past years was related to prolapsed and abnormal uterine bleeding. Kovac felt that vaginal hysterectomy is the treatment of choice for management of patients with non-malignant pelvic disease. Most commonly uterus >12 weeks is considered as a contraindication, but well trained gynaecologist won't accept it. Edwards and Beebe advocated vaginal hysterectomy in uteri up to 14 weeks size.[8] Navratil stated that uteri of 3-4 months do not represent a contraindication to vaginal hysterectomy.[9] Several methods of dealing with benign uterine enlargement like bisection, morcellation and coring can be performed so that vaginal hysterectomy can be performed. These methods have been shown to be safe with no added morbidity in terms of blood loss and visceral injury when compared with vaginal and abdominal hysterectomy for uteri of normal size. Even in nulliparous women there is insufficient uterine descent when anesthetized to facilitate vaginal hysterectomy. The only unanimous indication of laparoscopy Assisted Vaginal hysterectomy (LAVH) is to convert abdominal and vaginal hysterectomy into a safe vaginal procedure. Vaginal hysterectomy is associated with a low incidence of complications, morbidity and mortality. But like any other surgical procedure it has its own share of complications some of which are unique to the route of surgery. Incidence of complications was 70% less after vaginal compared with abdominal hysterectomy. The operative time in our study was 48.6 mins, 1 case (2%) case was complicated by adhesions. There was not a single case of bladder and bowel injury. Post-operative blood transfusion was required in 2% NDVH cases and the need was clearly in excess in TAH group. All cases of NDVH were ambulated after 24 hours post – operatively. NDVH is associated with early post ambulation. Urinary tract infection was encountered in 8% and febrile morbidity in 16%of NDVH group. Mean duration of hospital stay was 5.96 days and for TAH

group was 9.1 days. Thus NDVH is associated with less duration of hospital stay.

CONCLUSION

Non-descent vaginal hysterectomy is associated with less blood loss during surgery, decreased operative time, less intra-operative and post-operative complications with shorter hospital stay as compared to total abdominal hysterectomy. There is early post-operative recovery and hence NDVH is a better option for females requiring hysterectomy.

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