A Comparative Study of Non Descent Vaginal Hysterectomy and Total Abdominal Hysterectomy

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Abstract

Background: Hysterectomy is the commonest major surgical procedure in gynecology. There are different approaches to perform hysterectomy. Conventional abdominal and vaginal hysterectomies are considered to be the common gynecological operations. This study was carried out to assess the comparison between total abdominal hysterectomy and non-descent vaginal hysterectomy.

Materials and methods: This randomized clinical trial study was conducted in the department of Obstetrics and Gynecology, Khulna Medical College Hospital between IstJuly 2021 and 31st December 2021. A total of 60 patients who admitted in the indoor facilities of the department of Obstetrics and Gynecology, Khulna Medical College Hospital for hysterectomy was considered as study population. Among them 30 were in group A (On whom total abdominal hysterectomy was conducted) and another 30 were in group B (On whom non descent vaginal hysterectomy was conducted). The patients having benign uterine pathology, mobile uterus where uterine size was within 14 weeks were included for the study.All operations were performed by expert gynecological surgeon along with his/her assistants. A comparative study was made between group A and B in terms of duration of Surgery,intra-operative complications, time of ambulation. post-operative complications and duration of hospital stay. All the data was recorded in a preformed questionnaire.

Results: The mean age was 44.63±6.24 (SD) years and 47.87±6.64 (SD) years in group A and group B. Greater part of the respondents from group A had >12 weeks' uterus. From group B 26.7% had normal uterus and 26.7% had 8 weeks' uterus which was the majority.The most common indication for group A was adenomyosis (36.7%) followed by abnormal uterine bleeding (26.7%), fibroid (26.7%) and PID (10.0%).For group B, the most common indications was abnormal uterine bleeding 946.7%) followed in decreasing order adenomyosis (26.7%), fibroid (23.3%) and PID (3.3) duration of surgery was 91.03±10.64 (SD) minutes for group A patients and 65.83±10.25 (SD) for group B patients. A statistically significant difference was observed between groups where longer surgery duration was observed in group A ($p<0.05$). Intraoperative blood loss was also significantly higher in group patients (215±39.17 ml Vs 167.07±25.14 ml). The mean days required before ambulation was 2.3±0.8(SD) days for group A and 1.2±0.5(SD) days for group B. Incidence of post-operative complications were significantly higher in group A ($p<0.05$). Post-operative complications were fever (30.0% in group A and 26.7% in group B), UTI (16.7% in group A and 10% in group B), RTI (23.3% in group A and 16.7% in group B), wound infection (16.7% in group A).

Conclusion: NDVH operation is a less invasive operation which is associated with less time duration, minimal blood loss, limited requirements of blood transfusion, minimal per-operative and postoperative complications, early ambulation and short duration of hospital stay.

Key words: Non descent vaginal hysterectomy; Surgeon; Total abdominal hysterectomy.

Introduction

Hysterectomy is the commonest major surgical procedure in gynecology. A considerable number of women go through hysterectomy annually and 70% of the hysterectomy is done due to benign uterine conditions. The incidence differs between countries depending on differences in health economical aspects, morbidity, traditions and attitudes. There are different approaches to perform hysterectomy which include vaginal, abdominal, laparoscopic and robotic assisted laparoscopic hysterectomy.

Contributory reasons that exert influence on the route of hysterectomy include uterine size, vagina approach ability to the uterus, the need for adjuvant procedure, proficiency of surgeon, available hospital technology, devices and support, emergency or scheduled cases and preference of the informed patient.[1]

Conventional abdominal and vaginal hysterectomies are considered to be the common gynecological operations. The case and convenience offered by a

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wide ranging abdominal incision have make the domination of abdominal hysterectomy in comparison to the vaginal route over decades. Whereas the vagina is the usual route to access the uterus and the least invasive route of hysterectomy. Vaginal route of hysterectomy has distinct health and economic benefits in terms of fewer morbidities, better post-operative recovery, reduced hospital stay and better patient satisfaction.[2]

The past few years have seen growing indications of non-descent vaginal hysterectomy. The once thought contraindication of vaginal hysterectomy like narrow public arch, immobile uterus, previous cesarean section, enlarged uterus can be successfully attempted by non-descent vaginal hysterectomy.[3]

Usual limitation of vaginal hysterectomy in non-descent uterus is its size, but now for uterus with large sizes, hysterectomy can be facilitated by bisection, myomectomy, wedge debunking and morcellation.[4]

Despite overwhelming evidence in favor of non-descent vaginal hysterectomy it is still not preferred route in Bangladesh. The reason for not practicing this approach may be lack of surgeon expertise and lack of controlled evidence in favor of non-descent vaginal hysterectomy in our country.

Non-decent vaginal hysterectomy can substantially decrease the treatment cost, duration of hospital study, morbidity and can avoid the complications of abdominal incision.[5] This study was carried out to assess the comparison between total abdominal hysterectomy and non-descent vaginal hysterectomy.

Materials and methods

This randomized clinical trial study was carried out in the Department of Obstetrics and Gynecology, Khulna Medical College Hospital between Ist July 2021 and 31st December 2021. A total of 60 patients who admitted in the indoor facilities of the Department of Obstetrics and Gynecology, Khulna Medical College Hospital for hysterectomy was considered as study population. Among them 30 were in group A (Who went through total abdominal hysterectomy) and another 30 were in group B (Who went through non descent vaginal hysterectomy). The patients having benign uterine pathology, mobile uterus where uterine size was within 14 weeks were included for the study. Patients having uterine size > 14 weeks, uterine prolapse, endometriosisand patients having pelvic malignancy were excluded from the study. After taking consent from eligible patient, detailed history was taken. General, systemic and pelvic examination was being performed.Ultrasonography and other necessary investigations were performed prior to operation. All operations were performed by expert gynecological surgeon along with his/her assistants. A comparative study was made between group A and B in terms of duration of Surgery,intra-operative complications, time of ambulation. post-operative complications and duration of hospital stay was compared between two groups. All the data was recorded in a preformed questionnaire Statistical analysis of the results was performed by using (SPSS-22). p value of <0.05 was considered significant. Permission was taken from the proper authorities before conducted the study.

Results

Table I Distribution of the respondents by the socio-demographic characteristics (n=60)

Variables	Group A n=30 n (%)	Group B n=30 n (%)	p value
Age (In years)			0.057**
Mean±SD	44.63±6.24	47.87±6.64	
Education			0.584*
No formal education	12 (40.0)	8 (26.7)	
Completed primary	8(26.7)	6 (20.0)	
Completed SSC	5(16.7)	6 (20.0)	
Completed HSC	4(13.3)	8 (26.7)	
Graduate or above	1(3.3)	2 (6.7)	
Occupation			0.839*
Day labor	5 (16.7)	7(23.3)	
Housewife	16(53.3)	13(43.3)	
Service	7(23.3)	7(23.3)	
Unemployed/retired	2(6.7)	3(10.0)	
Socio-economic status			0.416*
Poor	12(40.0)	8(26.7)	
Middle income group	12(40.0)	17(56.7)	
Rich	6(20.0)	5(16.7)	

Group A: Patient underwent Total Abdominal Hysterectomy (TAH). Group B: Patients underwent for non-descent vaginal hysterectomy.

The mean age was 44.63±6.24 (SD) years and 47.87±6.64 (SD) years in group A and group B. Majority of the respondents (40.0%) from group A

had no formal education. In group B, majority of the respondents, 26.7% had no formal education and similar percentage of patients were studied up to higher secondary which was majority. Mostof the patients from both groups were housewives (53.3% and 43.3% in group A and B). Forty percent from group A and 56.7% from group B hailed from middle-income group.

Table II Distribution of the respondents by the duration of surgery and intra-operative blood loss between groups (n=60)

Variables	Group A n=30 Mean±SD	Group B n=30 Mean±SD	p-value*
Duration of surgery (Minutes)	91.03±10.64	65.83±10.25	<0.01
Intra-operative blood loss (ml)	215±39.17	167.07±25.14	0.001

Group A: Patient underwent Total Abdominal Hysterectomy (TAH).

Group B: Patients went for non-descent vaginal hysterectomy

Table II shows duration of surgery was 91.03±10.64(SD) minutes for group A patients and 65.83±10.25(SD) for group B patients. A statistically significant difference was observed between groups where longer surgery duration was observed in group A ($p<0.05$). Intraoperative blood loss was also significantly higher in group patients (215±39.17 ml Vs 167.07±25.14 ml).

Table III Comparison between groups by the per-operative complications (n=60)

Complications*	Group A n=30 n (%)	Group B n=30 n (%)	p-value**
Intra-operative hemorrhage	6(20.)	2(6.7)	0.254
Slippage of ligature	0(0.0)	2(6.7)	0.150
Bladder injury	1(3.3)	0(3.3)	0.301

*Multiple responses considered.

Group A: Patient underwent Total Abdominal Hysterectomy (TAH).
Group B: Patients went for non-descent vaginal hysterectomy.

Table IV shows Intra-operative hemorrhage was the most common per-operative complication among both groups (13.3% from group A and 10.0% from group B) when compared among groups. The difference wasn't statistically significant ($p>0.05$).

Table V Distribution of the respondents by ambulation and post-operative hospital stays between groups (n=60)

	Group A n=30 Mean±SD	Group B n=30 Mean±SD	p-value
Duration before ambulation (Days)	2.3±0.8	1.2±0.5	0.001
Hospital stays (In days)	8.5±4.09	5.83±2.45	0.001

Group A: Patient underwent Total Abdominal Hysterectomy (TAH).
Group B: Patients went for non-descent vaginal hysterectom.

Table V shows the mean days required before ambulation was 2.3±0.8 (SD) days for group A and 1.2±0.5 (SD) days for group B. The difference was statistically significant when compared between groups ($p<0.05$). Besides, postoperative hospital stays were significantly higher in group A than group B (8.5±4.09 Vs 5.83±2.45).

Table VI Comparison between groups by the post-operative complications (n=60)

Complications*	Group A n=30 n (%)	Group B n=30 n (%)	p-value**
No	6 (20)	18 (60)	.002
Yes	24 (80)	12 (40)	
Fever	9 (30.0%)	8(26.7%)	0.12
UTI	5(16.7)	3(10.0)	0.35
RTI	7(23.3)	5(16.7)	0.37
Wound infection	5(16.7)	0(0.0)	0.03

*Multiple responses considered.

Group A: Patient underwent Total Abdominal Hysterectomy (TAH).
Group B: Patients went for non-descent vaginal hysterectomy.

Table VI shows Incidence of post-operative complications were significantly higherin group A ($p<0.05$). Post-operative complications were fever (30.0% in group A and 26.7% in group B), UTI (16.7% in group A and 10% in group B), RTI (23.3% in group A and 16.7% in group B), wound infection (16.7% in group A).

Discussion

In this study, a total number of 60 patients were included in the Obstetrics and Gynecology Department of Khulna Medical College, Khulna.

Study period was between Ist July 2021 and 31st December 2021. Among 60 Patients, 30 were in group A (Total abdominal hysterectomy) and another 30 were in group B (Non-descent vaginal hysterectomy). There is no statistically significant difference of the socio-demographic characteristics between two groups. Mean age, parity, educational status, occupation, socio-economic condition and resident all were similar in both groups.Maximum patients were residents of rural area belonging to middle income group and majority of patients were housewives and multipara.

In this study the mean age of the patient is TAH group were 40.63 ± 6.24 NDVH groups were 47.87 ± 6.64. Which was similar to study conducted by Chandrakar k et al. and Dewan R et al.[6,7] Co-morbid conditions like hypertension, diabetes mellitus, hypothyroidism and asthma were not significantly associated with TAH or NDVH in this study which was similar to the study conducted by Despande et al.[8] This study reveals majority of the participants didn't have any history of surgery before (66.7% in TAH group 93.3% in NDVH group). Previous history of LSCS was significantly higher in TAH group (26.7%). Among them six had previous history of 1LSCS and 2 had previous history of 2 LSCS.In NDVH group only 2 (6.7%) patients had history of previous 1 LSCS. The study also reveals 2 patients had history of prior pelvic surgery in TAH group and none had any history of pelvic surgery in NDVH group.In a similar study conducted by Ramesh Kuma ret al. 23.08% patient of in NDVH had history previous section which is higher than our study.[9]

Most common indication of operation in this study was AUB(26.7% in TAH group and 46.7% in NDVH group). This finding was similar to study conducted by Despande H et al.[10] Other indications of operation were adenomyosis, fibroid and PID. There is no significant difference between groups. With respect to the size of the uterus we included up to 14 weeks' size uterus in this study. But another study conducted by Adam Magos enlarged uterus up to 20 weeks' size were removed virginally by using bi-section, coring, myomectomy and morcellation.[11] In this study 26.7% patient in TAH group had uterus >12 weeks but only 6.7% patientsin NDVH group had uterus >12 weeks size and 13.3% patient had uterus found 12 weeks size. The large sized uterus was removed by bisection (4 cases) and morcellation (In 1 case). No specific technique was applied in other cases and in TAH group. In our study the duration of surgery was 91.03 ± 10.64 (SD) minutes for TAH group and 65.83±10.25(SD) for NDVH group. Statistically significant difference were observed in two groups last where longer duration of surgery was observed in the TAH group, which was similar to the study conducted by Chandrakar K et al. but contradictory to the study conducted by Abhinandan et al.[12,13] In their study 84.3 minute was required for NDVH and 80.3 min was required for TAH. In this study operation time is longer is cases where bisection, morcellation were needed and in cases of previous surgeries where there was adhesion. In this study per operative blood loss was significantly higher in the TAH group (215±39.17 ml) compared to NDVH group (167.07±25.14 ml), which was similar to the study conducted by Mythily M et al.[14] Regarding intraoperative complication there was hemorrhage (20%) in TAH group and 6.7% in NDVH group. Blood loss was more in TAH cases as bleeding occurs from entry through the skin, abdominal fat & rectus muscle. In NDVH group there were two cases of slippage of ligature which was managed properly. There was one case of bladder injury in TAH group the patient had history of previous 2 LSCS and there was severe adhesions. The required meant of blood transfusion were more in TAH group which was statistically significant it was similar to the study conducted by Alwani et al.[15] In this study the duration before ambulation and post-operative hospital stay were significantly shorter in NDVH groups(1.2±0.5 days) compared to TAH group (5.83±2.45 days) which was statistically significant and was similar to another study.[16] In their study the main duration of hospital stay in TAH group was 7.19±1.17 and in NDVH group 4.06±1.10. Incidence of post-operative complications were significantly higher in TAH group. post-operative complications were fever (30% in TAH group and 26.7 % in NDVH group), UTI (16.7% in TAH group and 10 %in NDVH group), RTI (23.3% in TAH group and 16.7 % in NDVH group), wound infection (16.7% in TAH group). These findings were similar to

study conducted by Benassi et al.[17] In this study there was no conversion of vaginal route to abdominal route needed. On extensive review of the literature and comparison of all the parameter with other studies this study results are comparable to other studies. In this study NDVH was found to be more safe and effective operative technique for benign gynecological diseases.

Limitations

Time constraint and single center study, small sample size were the limitations of the study. Long term complications like vault prolapse and others couldn't be compared in TAH and NDVH group. Therefore, in future a more elaborative and long time follow up would have given more conclusive information.

Conclusion

The present study concluded that NDVH operation is associated with less operating time, minimal blood loss, limited requirements of blood transfusion, minimal per-operative and postoperative complications, early ambulation and short duration of hospital stay. NDVH is a less invasive operation with no scar and early convalescence period. Hence, NDVH is suitable, safe and convincing procedure incomparisonto TAH.

Recommendations

This study is recommended that NDVH is a feasible technique of choice in routine practice.

Disclosure

All the authors declared no conflict of interest.

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