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Original Research Article

A comparative study of total laparoscopic hysterectomy and non-descent vaginal hysterectomy for treatment of benign diseases of uterus

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ABSTRACT

Background: Hysterectomy is the most common performed major gynaecological surgery and the decision depends on indications for operation, surgeon's training and preference, uterine size, adnexal pathologies and patient choice. To avoid laparotomy either total laparoscopic hysterectomy (TLH) or non-descent vaginal hysterectomy (NDVH) is the recently practised option. Objectives of the present study are to compare duration of operation, blood loss, ambulation time, post-operative pain and complications between TLH and NDVH.

Methods: Patients undergoing above operation during January 2014 to December 2014 at N.R.S. Medical College, Kolkata, were included under the study. All patients were thoroughly examined and investigated and malignancies were excluded by Pap smear and or D&C. All patients were observed minutely during pre-operative, intra operative and post-operative period for any complications.

Results: NDVH requires less operative time than TLH but intra operative blood loss, post-operative pain and ambulation time are slightly more.

Conclusions: TLH requires infrastructural set up, greater surgical expertise, longer operative time and major intraoperative complications as compared to NDVH. In our low resource government hospital NDVH is better choice for removal of uterus in uncomplicated benign conditions.

Keywords: Hysterectomy, NDVH, Pap smear, TLH

INTRODUCTION

Hysterectomy is the second most common operation performed on women after Caesarian Section worldwide.¹ In India, the incidence of hysterectomy is about 4-6% of adult Indian women out of which 90% are performed for benign indications.² In India approximately 2,310,263 women undergo hysterectomy every year.³ Most of these women hail from rural sides, belong to the working class and are financially challenged. Keeping this demographic profile of Indian population in mind, it is important that the procedure of hysterectomy for Indian population should be

cost-effective and with minimum duration of hospital stay. Several routes of hysterectomy have been explored and debated in search for the optimum one which would aid in the ease of operation with minimum complications and best cosmetic results. Recent reviews have suggested that whenever feasible Vaginal Hysterectomy should be preferred over Total Abdominal Hysterectomy & when Vaginal Hysterectomy is not possible, Total Laparoscopic Hysterectomy is the approach of choice.⁴ It is a general consensus that Vaginal Hysterectomy is considered the gold standard compared to Total Laparoscopic Hysterectomy.⁵ Non-Descent Vaginal Hysterectomy is a

very simple yet effective technique for tackling benign pathologies of the uterus. It is easy to master, causes less blood loss, pain and discomfort to the patient when compared to the conventional total abdominal hysterectomy. Total Laparoscopic Hysterectomy is a modern concept. It has a steep learning curve, requires modernized OT set-ups & special laparoscopic instruments and poses a greater financial burden for the patient when compared to vaginal hysterectomy. Yet it is gaining recognition because of its minimal invasiveness and dissection under direct laparoscopic vision.

METHODS

Patients undergoing above operation during January 2014 to December 2014 at N.R.S. Medical College, Kolkata, were included under the study. All patients were thoroughly examined and investigated and malignancies were excluded by Pap smear and or D&C. All patients were observed minutely during pre-operative, intra operative and post-operative period for any complications. Patients were serially recruited from the Gynecology OPD of NRS Medical College and Hospital as per the inclusion and exclusion criteria.

Inclusion criteria

Cases of benign diseases of the uterus not responding to medical management for at least 6 months & requiring hysterectomy will be selected for this study. Diseases included are: fibroid and polyps, adenomyosis, endometriosis, dysfunctional uterine bleeding, age>30 years, clinically uterus of less than 12 weeks size, having at least 1 child.

Exclusion criteria

Genital malignancy, genital prolapsed, acute pelvic inflammatory disease, any condition for which patient is not declared fit for anesthesia., uterine size > 12 weeks, pelvic bony malformations. Patients with odd numbered serial will be taken up for NDVH and those with even numbered serial will undergo TLH. Selection of patients on the basis on inclusion and exclusion criteria, and randomizing them into 2 groups with 25 patients in each arm. Intra-operative & post-operative parameters will be recorded, tabulated and statistically analysed. For each parameter a P value will be calculated and a value of <0.05 will be considered significant. Patients will be subsequently followed up in Gynecology OPD at 1 month and 3 month interval and assessed for quality of life and satisfaction. Investigations for pre-anaesthetic check-up which includes complete haemogram, liver function test, kidney function test (urea, creatinine), fasting and post-prandial sugar levels, serology which includes Hepatitis B surface antigen and HIV screening test, chest x-ray & ECG 12 leads. Thyroid profile and 2D echocardiography will be done where ever applicable depending on the patient profile. Visual analog scale will be used in the 3rd post-operative hour, 1st & 2nd post-operative days. Ambulation

Time was measured in terms of hours from the time the patient is shifted to bed after surgery till she starts walking. Duration of hospital stay was measured as number of days from day from admission up to the day of discharge.

Post-operative complications

Complications like febrile illness, UTI, urinary retention after removal of catheter, pelvic hematoma or vaginal cuff infection will be recorded for each case. Patients will be followed up at 1 month in gynecology OPD to note: Number of days required since OT to resume professional activities, presence of rectal or vaginal fistula, vault complications like vault prolapsed, urinary complications like incontinence, chronic lower abdominal pain as measured in terms of visual analog scale. Patients will be followed up again at 3rd month in gynecology OPD to note the presence of pain measured in terms of visual analog scale and any other problems. The outcome for each surgical procedure was analysed by statistical methods e.g. tabulation, proportion & percentage, mean & SD. Appropriate test for significance was applied (t-test & Chi square test as applicable). P value of <0.05 was considered significant. Statistical analysis will be done by Medcalc software, version 15.2.1.

RESULTS

Table 1 shows the drop in haemoglobin level in NDVH group is 1.15 and in TLH 0.90 and it is not statistically significant.

Table 1: Distribution of patients according to type of surgery & drop in hemoglobin level.

Type of surgery	Drop in hemoglobin (gm./dl) (MEAN±SD)	Significance value (P)
NDVH	1.15±0.518	0.0568
TLH	0.90±0.385	

Table 2 reveals the duration of operation in NDVH group is 94.76minutes and TLH is 99.24minutes and is not significant.

Table 2: Distribution of patients according to the type of surgery and duration of operation.

Type of surgery	Duration of operation (minutes) (MEAN±SD)	Significance value (P)
NDVH	94.76±8.941	0.0915
TLH	99.24±9.448	

Table 3 shows postoperative pain measured by vas score are 6.56, 2.88 and 9.52 in first, second and third postoperative day respectively but in case of TLH it is 5.35, 1.80 and 9. These are statistically significant.

Table 4 shows ambulation time in NDVH is 24.12 hours and TLH it is 19.32 hours which is statistically significant. In Table 5, the post-operative complication is slightly more in case of NDVH than in TLH.

Table 3: Distribution of patients according to surgery type and post-operative vas scores.

Post-operative pain (vas score)	NDVH (Mean±SD)	TLH (Mean±SD)	P value
At 3 rd post op hour	9.52±0.653	9±0.764	0.0128
On 1 st post operative day	6.56±0.917	5.35±0.810	0.0000
On 2 nd post operative day	2.88±1.166	1.80±1.118	0.0016

Table 4: Distribution of patients according to the type of surgery and ambulation time.

Surgery	Ambulation time (hours) (MEAN ± SD)	P value
NDVH	24.12±3.456	0.0000
TLH	19.32±2.193	

Table 5: Distribution of patients according to the type of surgery and the post-operative complications.

Complications	NDVH (n=25)	TLH (n=25)	P value
Retention of urine	1	0	0.9842
Fever	1	1	0.4708
UTI	1	0	0.9842
Vaginal bleeding	1	0	0.9842
Vault infection	1	1	0.4708
Relaparotomy	0	0	NA

DISCUSSION

In our study, the mean blood loss in terms of the drop in hemoglobin level (as measured by the difference in hemoglobin levels between the pre-operative and post-operative values) in the NDVH group was 1.15 gm. /dl and in the TLH group was 0.90 gm. /dl. The p value was 0.0568, which is not significant. This observation is similar with the studies of Müller A. et al, Aniuliene R et al, Mortom M et al as opposed by Roy et al.⁶⁻⁹ Between TLH and NDVH, we found TLH has a higher mean operating time (99.24min) compared to NDVH (94.76min). But the p value for comparison of this parameter is 0.0915 which is not statistically significant. This is consistent with most of the studies that have been done so far as also Drahonovsky J, et al.³ The average pain recorded after the 3rd hour of surgery for NDVH was 9.52, while that for TLH was 9. The P value is 0.0128 which is statistically significant. While comparing the pain scores for the 1st post-operative day, the mean value for NDVH was 6.56 and that for TLH was 5.35. Again the P value

came to be 0.0000 which is statistically significant. The mean of pain scores on the 2nd post-operative day for NDVH is 2.88, while that for TLH is 1.8. The P value is 0.0016 which is again statistically significant. Overall we found that patients who underwent TLH had significantly lower post-operative pain compared to patients undergoing NDVH. This finding is consistent with what Karantanis E et al.¹⁰ In present study, the mean ambulance time for NDVH is 24.12hrs. while that for TLH group is 19.32hrs. The P value is 0.0000 which is statistically significant, denoting that patients who underwent TLH had early ambulance compared to the other group. Also the average duration of hospital stay for patients undergoing NDVH is 4.6 days compared to 3.96 days of TLH. We calculated the P value for this parameter is 0.0004 which is statistically significant. Slack M, et al also found TLH is associated with trends towards shorter hospital stay (WMD -2.5 days; 95% CI -5.1 days to 0.01 days; p=0.05). Beckmann MW, et al tallied with our finding by stating longest hospital stay was observed after abdominal hysterectomy (AH; 10 days), followed by vaginal hysterectomy (VH; 7.8 days) and laparoscopy-assisted vaginal hysterectomy (LAVH; 7.2 days). The shortest stays in hospital were seen after (LASH 5.9 days) and total laparoscopic hysterectomy (TLH; 5.7 days). But Aniuliene R, et al stated that the difference in mean length of hospital stay was insignificant comparing laparoscopic and vaginal hysterectomies (P>0.05).⁷ There were no major complications during the operative procedures in our intervention which is consistent with the findings of Walsh CA, et al.¹⁰ 25 patients were taken in each arm for the present study. This is consistent with the prevalence of benign diseases of uterus in our institution and the study period of 1 year. But this sample size of 50 patients might be inadequate considering the bigger picture and the appropriateness of statistical outcomes. Post-operative sexual satisfaction and dyspareunia is not considered in this study. There are always endless possibilities of future studies in regards to recent advancements in surgical fields like robotic surgeries

CONCLUSION

In our final statement we will like to state that at what stage transition from one approach to the other takes place will depend on the pathology and the size of the uterus, as well as the availability of modernized equipment and surgical skills of the operator.

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