

# Total laparoscopic hysterectomy versus non–descent vaginal hysterectomy: An observational study

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## Abstract

**Background:** Hysterectomy is one of the most common surgery performed by Gynaecologist. As the time is passing trend is towards those approaches which are minimally invasive, less painful, have less complications, less blood loss and are more cosmetic. Thus total laparoscopic hysterectomy (TLH) and non descent vaginal hysterectomy (NDVH) has gained popularity. Laparoscopic surgeries requires high-tech Operation Theater (OT) setup, sophisticated instruments and surgical skills. Vaginal hysterectomy descent or non descent is a simple and effective technique for benign pathologies of uterus. **Objective:** This study was conducted to compare Total Laparoscopic Hysterectomy and Non Descent Vaginal Hysterectomy with reference to fall in blood haemoglobin level, duration of operation, weight of uterus, post-operative complication and post-operative ambulation. **Material and Method:** This is a prospective comparative (observational) study done among fifty patients who underwent total laparoscopic hysterectomy or non–descent vaginal hysterectomy for various indications in the Department of Obstetrics and Gynaecology in Silchar Medical College and Hospital, Silchar, Assam (India) from January to December 2015. The patients having at least two children, aged more than 35 years and size of the uterus less than 12 weeks size were included. The patients were monitored and data collected included indications of hysterectomy, type of hysterectomy, duration of operation amount of blood loss weight of the uterus etc. **Results:** TLH cases had lesser blood loss than NDVH cases. NDVH took shorter operating time (96.8 min) than TLH (101.2 min). The Patients who underwent TLH ambulated early (22.4hrs) in comparison to NDVH group (27.24hrs). NDVH group had lesser complications in comparison to TLH. **Conclusion:** NDVH is better in its approach through natural orifice, faster and less expansive. In which way to approach the uterus shall depend upon skill of the surgeon, size and pathological nature of uterus, facilities available in the hospital and preference of patient as well as surgeon. In peripheral hospitals where resources are limited NDVH takes upper hand than TLH as it is more economic, takes lesser time, requires less surgical techniques in comparison to TLH.

**Key Words:** Ambulation, Haemoglobin, NDVH, TLH.

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## INTRODUCTION

Hysterectomy is one of the most common surgery performed by a Gynaecologist, it stands second to Caesarean Section.<sup>1</sup> Around 4-6 percent of Indian women undergo Hysterectomy and 90% of the indications are benign.<sup>2</sup> The conventional way of approach for hysterectomy is trans-abdominal. As the time is passing trend is towards those approaches which are minimally invasive, less painful, have less complications, less blood loss and are more cosmetic. Laparoscopy in a female pelvis was first reported by Roul Palmer in Paris in 1944. Laparoscopic hysterectomy has the advantage of visualization of pelvic structure from above and occasional dissection and adhesiolysis.<sup>3</sup> But laparoscopic surgeries requires high-tech Operation Theater (OT)

setup, sophisticated instruments and surgical skills. It also increase the financial burden for the patient in comparison to vaginal hysterectomy. Vaginal hysterectomy descent or non descent is a simple and effective technique for benign pathologies of uterus. It can be a good alternative to trans-abdominal hysterectomy.

### MATERIALS AND METHODS

This is a perspective comparative (observational) study done among fifty patients who underwent total laparoscopic hysterectomy or non –descent vaginal hysterectomy for various indications in the Department of Obstetrics and Gynaecology in Silchar Medical College & Hospital, Silchar, Assam, India; from January to December 2015. All the patients who gave consent for the study were clinically examined, investigated & malignancies were excluded by Cytological and histopathological examination (Pap and or Dilatation & Curettage). All the patients were admitted from the Outdoor. They were observed during pre-operative, intra-operative and post operative period for any complications.

#### Inclusion Criteria

Those cases not responding to any form of Medical treatment for at least one year of benign pathology were included in the study . The patient having at least two children ,aged more than 35 years and size of the uterus less than 12 wks size were included. The diseases were mainly fibroid, adenomyosis, endometriosis and dysfunctional uterine bleeding.

#### Exclusion Criteria

Cases with more than one caesarean section ,genital malignancy, bony pelvic malformations<sup>3</sup> (sub pubic angle less than 90, bituberous diameter less than 9 cm), uterine size more than 12wks, adnexal mass, pelvic organ prolapse were excluded from the study. Patients with diseases like uncontrolled diabetes, very severe hypertension, cardiac problem and bleeding diathesis were excluded by Anaesthetist. The cases were randomly divided into two groups each of 25 patients. Pre-operative investigations like complete haemogram , kidney function test ,liver function test ,ECG ,fasting and post-prandial blood sugar, serology which includes Hepatitis B surface antigen and HIV screening test and chest X ray were done in all cases. Thyroid function test and 2D echocardiography were done where ever applicable depending upon the status of the patients. The patients were monitored and all needed data were collected. The factors considered were indications of hysterectomy ,type of hysterectomy (total laparoscopic hysterectomy/non -descent vaginal hysterectomy), duration of operation, amount of blood loss, weight of the

uterus. Post operative complications like- Pelvic haematoma, Vaginal vault infection, Urinary tract infections, Urinary retention etc were recorded in all cases. Intra-operative complications (if any) were also recorded. Ambulation time was measured as the time when patient is shifted to bed after surgery till she starts walking. Patient were followed up in Gynaecology outdoor at one month and were enquired about 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 etc. All the factors were analysed by statistical methods e.g. tabulation, proportion & percentage and mean & standard deviation (SD). Appropriate test of significance was applied (t-test & Chi square test as applicable). P value of < 0.05 was considered significant. Statistical analysis was done by Medcalc software, version 15. 2. 1.

### RESULT

Most of the women in NDVH (non- descent vaginal hysterectomy) as well as in TLH (total laparoscopic hysterectomy) group belonged to 45 to 55 years age group. Almost all of them were with parity of 3 or more. Table 1 shows fall in blood hemoglobin level in NDVH group is 1.30 and in TLH is 1.05. This is statistically not significant since p value is 0.055. The duration of operation is not much different in both the group. Table 2 shows duration of operation in NDVH is 96.78 minutes and in TLH it is 101.26 minutes. It is not significant statistically.

**Table 1:** Division of patients based on type of surgery and falls in blood hemoglobin level

Type of surgery	Fall in hemoglobin (gm/dl ) (Mean±SD)	Significance value (P)
NDVH	1.30±0.508	
TLH	1.05±0.485	0.0558

**Table 2:** Division of patients based on type of surgery and duration

Type of surgery	Duration of operation (min) (Mean ±SD)	Significance value (P)
NDVH	96.78±8.041	
TLH	101.26±8.448	0.0715

Table 3 shows mean weight of uterus in NDVH was 190 gm and in TLH was around 180 gm. The difference was not significant and this might be because of the fact that we restricted size of the uterus to less than 12 weeks in both the groups.

**Table 3:** Division of patients based on type of operation and weight of uterus

Type of	Uterine weight (gm) (Mean	Significance value
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surgery	±SD)	(P)
NDVH (n=25)	190.25±38.29	0.401
TLH (n=25)	180.30±46.20	

Table 4 shows ambulation time in NDVH was 27.24 hours and in TLH was 22.44 hours. It is statistically significant. Post operative complication is a bit more in case of TLH than NDVH. (Table 5).

**Table 4:** Division of patients based on type of surgery and ambulation time

Type of surgery	Ambulation time (hrs) (Mean ±SD)	Significance value (P)
NDVH	27.24±3.056	0.0000
TLH	22.44±2.093	

**Table 5:** Division of patients based on type of surgery and post operative complications

Complications	TLH (n=25)	NDVH (n=25)	P value
Urinary retention	2	1	0.5609
Vault hematoma	1	1	1.0000
UTI	1	0	0.3223
Bleeding p/v	2	1	0.5609
Vault infection	0	0	NA

## DISCUSSION

The fall in hemoglobin level was measured as difference in hemoglobin levels between the preoperative and post operative values. The fall in NDVH and TLH was 1.30 gm/dl and 1.05gm/dl respectively. The p value was 0.0558, which is not significant. But Roy KK *et al.*<sup>4</sup>, have shown that in NDVH blood loss was significantly lesser in comparison to TLH (P=0.02). Khanam NN *et al.*<sup>5</sup>, in their study have found that requirement of blood transfusion is comparatively high in TLH group than NDVH group. TLH had taken more operating time (101.26 min) than NDVH (96.78 min). But the p value was 0.0715 which is not significant. Drahonovsky *et al.*<sup>6</sup>, in their study found similar findings. They found that in women with non-malignant disease of uterus vaginal hysterectomy had shorter operating time (66 min). The mean uterine weight in NDVH and TLH was 190.25 gm and 180.29 gm respectively. It was not significant. This might be because of the fact that in both the group size of the uterus was kept less than 12 weeks. Chang WC *et al.*<sup>7</sup>, found that when cut off value of 350 gm of uterine weight was taken, NDVH took longer time. In our study TLH group ambulated early in comparison to NDVH group, it had statistical significance (p=0.0000). Muller A *et al.*<sup>8</sup>, in their study said that longest hospital stay was observed after abdominal hysterectomy (10 days) followed by vaginal hysterectomy (7.8 days) and lap hysterectomy (7.2 days). Candiani M *et al.*<sup>9</sup>, also concluded that laparoscopic hysterectomy results in shorter hospital stay. However Anuliene R *et al.*<sup>10</sup>, said difference in mean length of hospital stay was insignificant comparing

laparoscopic and vaginal hysterectomies (P>0.05). Complication in the post operative period was slightly more in TLH group. As the sample size was too small it might be inadequate for considering the appropriateness of statistical outcomes.

## CONCLUSION

As the days are passing we are concentrating more and more on minimal invasive surgeries thus TLH and NDVH have gained more importance. NDVH is better in its approach through natural orifice, faster and less expansive. In which way to approach the uterus shall depend upon skill of the surgeon, size and pathological nature of uterus, technology available in the hospital and preference of patient as well as surgeon. In this field still there is huge space for future studies and advancement. In peripheral hospitals where resources are limited NDVH takes upper hand than TLH as it is more economic, takes lesser time, requires less surgical techniques in comparison to TLH.

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