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ORIGINAL RESEARCH

A Comparative Study of Non-descent Vaginal Hysterectomy and Total Laparoscopic Hysterectomy

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Abstract

Background : Hysterectomy is the second common surgery performed by gynecologists. The present study was conducted to compare Non-descent Vaginal Hysterectomy and Total Laparoscopic Hysterectomy.

Material & methods : The present prospective observational study (single cohort) study was carried out in patients undergoing Non-descent Vaginal Hysterectomy and Total Laparoscopic Hysterectomy. Intraoperative data including duration of surgery, blood loss, and any complications during the surgery, Hospital stay were noted from documents. The data was collected & the results were analyzed with epi info 7 software using appropriate statistical methods.

Results : In 50% Total Laparoscopic Hysterectomy was done and in 50% Non-descent Vaginal Hysterectomy was performed. The mean blood loss in total laparoscopic hysterectomy was 187.60ml and non descent vaginal hysterectomy was 87.50ml which was significantly less in NDVH. There was significant difference in the duration of surgery between the two groups where the mean time to perform TLH was 65.40 minutes and NDVH in 55.20 minutes. Complications like bowel injuries, Bladder injuries, vaginal bleeding more in TLH as compared to NDVH. Febrile episodes and post operative infection was present comparatively less in NDVH as compared to TLH.The difference in the duration of hospital stay was significantly less with NDVH than TLH where the mean hospital stay was 7.44 days for TLH and 6.55 days for NDVH.

Conclusion :The present study concluded that the mean blood loss, mean time to perform, duration of hospital stay was less in NDVH. Febrile episodes and post operative infection was less in NDVH. Therefore, NDVH is safe and practical as compared to TLH.

Keywords : Total Laparoscopic Hysterectomy, Non-descent Vaginal Hysterectomy, bowel injuries, Bladder injuries**.**

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Introduction

Hysterectomy is universally the most common surgery performed in the field of gynaecology.[1]The route of hysterectomy is generally based on multiple factors like indication of surgery, size of the uterus, presence of other comorbidities, individual surgeon's expertise and preference, and these days, also the patient's preference. In India, the rate of hysterectomy is about 4-6% of adult Indian women out of which 90% are carried out for benign indications.[2] The most common indication for hysterectomy are symptomatic uterine leiomyoma, abnormal uterine bleeding, endometriosis, adenomyosis and uterine prolapse. There are three main approaches to perform hysterectomy, namely, abdominal, vaginal and minimally access surgeries including laparoscopic or robotic surgeries.[3] Traditionally, the uterus has been removed by abdominal route which gives the opportunity to inspect the ovaries and vaginal route was reserved for pelvic organ prolapse. Now emphasis on minimally invasive surgery has led to a resurgence of interest and importance of VH for non-prolapse indications, i.e. non-descent vaginal hysterectomy (NDVH) as the scarless hysterectomy.NDVH also gives us option of minimal invasion with better access to ligaments of uterus for surgery with less blood loss and minimal analgesic requirements post-surgery and under a relatively safe spinal anaesthesia rather than general anaesthesia with its associated complications. Usual limitation of vaginal hysterectomy in nondescent uterus is its size, but now for uterus with larger sizes, hysterectomy can be facilitated by bisection, myomectomy, wedge debulking and intramyometrial coring (morcellation).[4] The aim of the study is to compare Nondescent Vaginal Hysterectomy and Total Laparoscopic Hysterectomy.

Material & methods

The present prospective observational study (single cohort) study was carried out at Maharaja Agrasen Medical College, Agroha (Hisar) in patients undergoing Non-descent Vaginal Hysterectomy and Total Laparoscopic Hysterectomies without prolapse, for benign conditions who presented to out- patient or emergency and department of Obstetrics and Gynecology.A total of 100 females of age more than 40 yearswho were undergoing Nondescent Vaginal Hysterectomy and Total Laparoscopic Hysterectomy were included in the study. Women with uterine size not exceeding 16 weeks of gravid uterus, adequate vaginal access, uterine mobility, women with previous LSCSwere included in the study. Women with severely restricted uterine mobility**,** complex adnexal mass, suspicion of malignancy were excluded from the study.Written immediate consent for participation in the study was obtained from all the cases. Data including history taking, physical examination and necessary investigations including appropriate imaging studies were obtained from the case files. The time of commencement of the operation for NDVH started from the moment of saline infiltration into the sub-vaginal tissue and for TLH starting time was incision on the port-site. The final closure of the vault was considered the end point for NDVH and the suturing of all the port-site incisions considered the end point of TLH. The major steps of TLH were as follows: All cases were done under general anaesthesia. After positioning, painting and draping, the uterine manipulator was introduced per vaginally and fixed. One primary port (10 mm) was inserted in the umbilical area, pneumoperitoneum was created using carbon dioxide and the intraperitoneal pressure was maintained around 12 mmHg throughout the surgery. Two accessory ports (two 5 mm ports on left side were made. The round ligaments were cauterised and cut using vessel sealing forceps followed by the uteroovarian/infundibulopelvic ligaments, as per requirement, were cauterised and cut in same manner. The uterovesical fold of peritoneum was then incised using Bipolar cautery and bladder was mobilised.Skeletonization of uterine vessels were done and these vessels were cauterised and cut using bipolar forceps and harmonic respectively. Bilateral cardinal and

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uterosacral ligaments were cauterised and cut using vessel sealing forceps. Vaginal vault was then opened along cervicovesical junction using monopolar cautery by circumferential incision. The specimen was removed vaginally. Thereafter ensuringhaemostasis, Vaginal vault was closed by endosuturing with polyglactin 910 No. 1 suture. The surgical steps carried out in NDVH were as follows: The cases were done under spinal anaesthesia. After painting and draping, bladder was emptied by a metal catheter and anterior lip of cervix was held with vulsellum. 1:200000 adrenaline in saline or plain saline infiltration was done in sub-vaginal space. Circumferential incision was made around the cervix, the pubo-vesico-cervical fascia was cut and bladder mobilized upwards till the anterior peritoneum covering the uterus was visible. The anterior peritoneum was opened carefully by applying two artery forceps and cutting in between. Posterior pouch was opened subsequently. Uterosacral and cardinal ligaments were clamped, cut and ligated. Bilateral uterine vessels were clamped, cut and ligated. After delivering the uterus, hysterectomy was completed by applying bilateral cornual clamps, cutting and ligating it properly. All the pedicles were ligated with polyglactin 910 No. 1suture and they were rechecked for any bleeding or oozing. Finally, the vault was closed meticulously with same suture material.Intra-operative data including duration of surgery, blood loss, and any complications during the surgery, Hospital stay were noted from documents. The data was collected & the results were analyzed with epi info 7 software using appropriate statistical methods.

Results

In 50% women Total Laparoscopic Hysterectomy was done and in 50% women Non-descent Vaginal Hysterectomy was performed.

Table 1: Distribution according to Route of surgery

Route of surgery	N(%)
TLH	50(50%)
NDVH	50(50%)

Table 2: Comparison of Blood loss (in ml)

Route of surgery	Blood loss (in ml)	p value
TLH	187.60±60.66	<0.001
NDVH	87.50±20.54	

The mean blood loss in total laparoscopic hysterectomy was 187.60ml and non descent vaginal hysterectomy was 87.50ml which was significantly less in NDVH.

Table 3: Comparison of duration of surgery (in minutes)

Route of surgery	duration of surgery (in minutes)	p value
TLH	65.40±10.64	<0.001
NDVH	55.20±9.59	

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There was significant difference in the duration of surgery between the two groups where the mean time to perform TLH was 65.40 minutes and NDVH in 55.20 minutes.

Table 4: Complications

Complications	TLH	NDVH
Bowel injuries	**2(2%)**	**1(1%)**
Bladder injuries	**2(2%)**	**1(1%)**
Postoperative infection	**2(2%)**	**0(0%)**
vaginal bleeding	**2(2%)**	**1(1%)**
febrile episode	**5(5%)**	**2(2%)**

Complications like bowel injuries, Bladder injuries, vaginal bleeding more in TLH as compared to NDVH. Febrile episodes and post operative infection was present comparatively less in NDVH as compared to TLH.

Table 5: Comparison of hospital stay (in days)

Route of surgery	hospital stay (in days)	p value
TLH	**7.44±1.63**	**<0.001**
NDVH	**6.55±1.59**	

The difference in the duration of hospital stay was significantly less with NDVH than TLH where the mean hospital stay was 7.44 days for TLH and 6.55 days for NDVH.

Discussion

Once a hysterectomy is indicated for the treatment of gynecologic disease,the surgeon must determine the safest and most efficient route abdominal, vaginal or laporoscopic.[4] The factors that may influence the route of hysterectomy for any surgical indication include uterine size, mobility, accessibility and pathology confined to the uterus. Multiparity, lax tissues following multiple deliveries and decreased tissue tensile strength provide comfort to vaginal surgeon even in the presence of uterine enlargement.[5,6]

In 50% women Total Laparoscopic Hysterectomy was done and in 50% women Non-descent Vaginal Hysterectomy was performed. The mean blood loss in total abdominal hysterectomy was 187.60ml and non descent vaginal hysterectomy was 87.50ml which was significantly less in NDVH. There was significant difference in the duration of surgery between the two groups where the mean time to perform TLH was 65.40 minutes and NDVH in 55.20 minutes.Complications like bowel injuries, Bladder injuries, vaginal bleeding more in TLH as compared to NDVH. Febrile episodes and post operative infection was present comparatively less in NDVH as compared to TLH. The difference in the duration of hospital stay was significantly less with NDVH than TLH where the mean hospital stay was 7.44 days for TLH and 6.55 days for NDVH.

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Nimbannavar H et al found that NDVH group experienced more pain and required a greater number of analgesic doses. The intraoperative blood loss was more in NDVH group and duration of surgery was significantly higher in NDVH group. The incidence of bladder injury was more in the TLH group as compared to NDVH group.[7]

SaradaMurali M et al found that the most common age in both groups was 41–50 years. Fibroid uterus was the most common indication for surgery in both groups. The mean operative time in NDVH group was 40 min while it was 120 min in TLH group, and the mean blood loss in NDVH group was 50 ml, while it was 120 ml in TLH group. P< 0.001 when intraoperative blood loss and operative time were compared between both groups. There were no conversions to laparotomy in NDVH group, while there were three conversions to laparotomy in TLH group. Both groups were similar in post-operative analgesia requirement and post-operative hospital stay. Post-operative complications were similar in both groups.[8]

Oby Nagar D et al Thirty women underwent TLH, and thirty underwent NDVH. There was no statistically significant difference between groups in the mean age of patients, weight, BMI & literacy rates of patients of both the groups. TLH took significantly longer to perform; however, the estimated blood loss, mean postoperative hemoglobin change & the mean postoperative duration of hospital stay was greater in the VH group. Mean uterine mass was similar in both the groups. While there were no major intraoperative or postoperative complications; the incidence of minor complications were comparable in both the groups.[9]

Conclusion

The present study concluded that the mean blood loss, mean time to perform, duration of hospital stay was less in NDVH. Febrile episodes and post operative infection was less in NDVH. Therefore, NDVH is safe and practical as compared to TLH.

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