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Comparison Between Total Laparoscopic Hysterectomy And Total Abdominal Hysterectomy For Benign Uterine Conditions With Respect To Intra-Operative Period

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Abstract

Objective: The aim of this prospective study is to evaluate and compare intra-operative outcomes of total laparoscopic and total abdominal hysterectomy who performed at one tertiary centre for less than 14 weeks in respect to duration of surgery, intra-operative blood loss, intra-operative complications.

Material & Methods: This was a prospective interventional single centre (SMS Medical College, Jaipur) study on 140 consecutive patients (70 patients in each group) who underwent hysterectomy for benign uterine conditions either by Total Laparoscopic Hysterectomy or by Total Abdominal Hysterectomy route during a period of 2 year.

Results: For TLH group, operative time was (89.34 ± 12.3 minutes) more as compared to TAH group (46.6 ± 5.92 minutes) ($p<0.0001$), Blood loss was (19.61 ± 2.34 ml) less as compared to TAH group (124.8 ± 17.29 ml) ($p<0.0001$) and no significant difference were found in both TLH and TAH group for intra-operative complications.

Conclusion: Compared to TAH, Hysterectomy by TLH route found to have less intra-operative blood loss, more operative time and no significant difference for intra-operative complications.

Keywords:TLH, TAH, Benign uterine conditions, uterine size less than 14 weeks.

INTRODUCTION

Hysterectomy is one of the most common surgical procedure performed for benign uterine pathologies and can be done via abdominal, vaginal and laparoscopic routes[1]. It is the second most frequently performed major surgical procedure on women next only to caesarean section[2]. Most common reasons for performing hysterectomies are fibroids, bleeding irregularities, endometrial hyperplasia, cervical dysplasia, endometriosis and genital prolapse and malignancy[3].

The optimal route of a hysterectomy for a patient will depend on the nature of the pathology, uterine size, uterine descent, the likelihood of pelvic and bowel adhesions (due to endometriosis or previous pelvic surgery), presence of adnexal mass, the surgeon's preference skill and experience, availability of facility, patient preference after counselling about both procedures[4].

Abdominal hysterectomy has been the most popular method but it is more invasive and is associated with some limitations such as more blood loss, slow post-operative recovery and longer hospital stay, abdominal trauma, more postoperative morbidity, intraoperative and postoperative complications[1], also it was associated with substantial morbidity from wound problems to incisional hernia in the long run.

Now total laparoscopic hysterectomy (TLH) is an upcoming minimally invasive procedure women

undergoing laparoscopic hysterectomy have a low intraoperative blood loss, less post-operative haemoglobin drop, lower percentage of wound infection, less post-operative pain, early catheter removal, early ambulation, quicker recovery, quicker return to normal physical activity, cosmetically looks better, more post-operative satisfaction and better quality of life due to small abdominal incision in TLH surger,[4,5,6] with some limitations such as longer learning curve, takes longer time to perform, expensive equipment, general anaesthesia, manpower, higher operative cost The advantage of laparoscopic approach seems to be more pronounced in obese and elderly patients[6].

Laparoscopic approach has been found to be a better alternative as it has the advantage of laparotomy i.e. possibility of thorough abdominal inspection in case of malignancy or endometriosis for extra-uterine spread and collection of peritoneal fluid for cytology.

Aims:

To find out better method of hysterectomy – abdominal or laparoscopic for non – descended uteri for benign uterine conditions.

Objective:

The comparison included- intra-operative blood loss, operative time and intra-operative complications.

MATERIAL AND METHODS

This prospective interventional group study was conducted in Department of Obstetrics &Gynaecology, SMS Medical College & Attached Group of hospitals, Jaipur, Rajasthan.140 patients requiring hysterectomy for benign uterine conditions admitted to the gynaecology ward fulfilling all inclusion and exclusion criteria would be included from May 2019 to November 2020.

Inclusion Criteria:

— Patients having benign uterine conditions (diagnosed by D &C, Pap smear, Cervical biopsy & USG) with non-descended uterus admitted for hysterectomy who gave consent for the study

— Uterine size <14 weeks mobile uterus prior 1 LSCS (lower segment caesarean section) with above conditions.

Exclusion Criteria:

— Who unfit for general anaesthesia.

— Patient with Complex adnexal mass.

— Previous 2 LSCS and previous myomectomy were excluded.

METHODOLOGY

Patients admitted for hysterectomy were evaluated after written informed consent. After details history taking, complete physical and pelvic examination were done. Routine blood investigations and systemic examination were done. Pre-anaesthetic check-up in view of fitness for surgery by anaesthetist, surgery was done. All patients were given prophylactic Inj. Ceftriaxone 1 gm intravenously on operation table just before giving skin incision, all the procedures were done by single surgeon. Time of surgery was measured from the start of incision to end of the procedure. Weight of swab in the dry and blood-soaked states was measured. Considered 19 mg weight was equal to 1 ml blood loss. In laparoscopic surgery blood loss was measured by (volume in suction bottle-volume of irrigation fluid). Intraoperative blood loss and visceral injuries (intra-operative complications).

Operative technique:[7]

TAH cases was done under spinal anaesthesia. In the total abdominal hysterectomy group, Patient was placed in dorsal position &catheterisation done. A pfannenstiel incision was given and the abdomen opened in layers; Uterus was held with two straight clamps at both the cornual ends to elevate uterus out of pelvis. Bilateral round ligaments were clamped, cut and transfixed. Uterovesical fold dissected and bladder pushed down to the lower limit of cervix. The utero-ovarian ligament and fallopian tube (if ovaries were removed then infundibulopelvic ligaments clamped, cut, and ligated) was clamped, cut and ligated. Then subsequentially bilateral uterine vessels and Mackenrodt's uterosacral ligaments were and clamped, cut and ligated. Uterus and cervix were cut at the level of cervicovaginal junction and the uterus was delivered out. Vaginal vault closed. After securing hemostasis abdomen was closed in layers.

In TLH All the TLH cases were operated under general anaesthesia. The patient was placed in the dorsal lithotomy position with knees flexed in Allen stirrups, and deep Trendelenburg position, a nasogastric tube was inserted to deflate the stomach, a

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colpo-Probe vaginal fornix delineator with the central metal insert was introduced vaginally to mobilize the uterus and delineate the vaginal fornices. Carbon dioxide pneumoperitoneum was achieved using a Veres needle. The intraperitoneal pressure was maintained at 15 mm Hg throughout the surgery. Four laparoscopic ports were used: 10 mm subumbilical, 5 mm right and left lower quadrant and 5mm at the level of camera port under laparoscopic vision. Both round ligaments coagulated with bipolar cautery and cut with monopolar needle cautery uterovesical fold coagulate and cut up to opposite side, bladder was pushed down. Right Fallopian tube, ovarian ligament coagulated and cut. Right side uterine vessel was skeletonised, coagulated and cut. The same procedure was done on the left side. Bilateral uterosacral ligaments coagulated and cut. Then with the help of a monopolar hook through a circumferential incision the uterus with cervix was separated from their vaginal attachments. Uterus delivered out vaginally. Bilateral mesosalpinx coagulated and cut, then the fallopian tubes delivered vaginally. Vaginal vault was closed by endo-suturing or by vaginal route, hemostasis was achieved and ports were closed.

Statistical Analyses

Data was coded and recorded in MS excel spread sheet program. All statistical analysis was done using EPI info version 7.2.1.0 statistical software. Categorical variables were expressed as frequency and percentage and were analysed using chi-square/ Fischer's exact test as applicable. Continuous variables were expressed as mean and standard deviation and where analysed using independent sample t test for comparison between two groups. Mann Whitney test was used for ordinal variables. For comparison between more than two groups one way ANOVA test was used. P- value less than 0.05 statistically significant.

RESULTS:

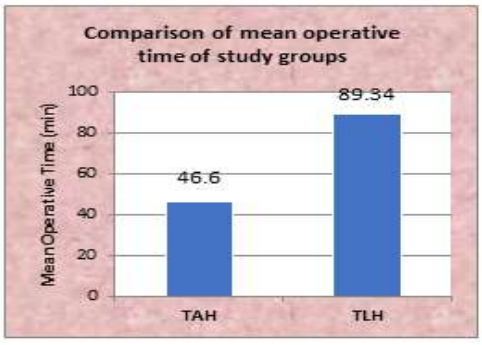
Table .1 show the mean operative time in TLH group was 89.34 ± 12.3 minutes while in group TAH the mean operative time was 46.6 ± 5.92 minutes. The mean operative time was significantly more in TLH group as compared to TAH group ($p<0.0001$) (as shown in figure .1).

Table .1 shows the mean blood loss in TLH group was 19.61 ± 2.34 ml as compare to in TAH group was 124.8 ± 17.29 ml. This difference was found to be statistically significant i.e. The mean blood loss was significantly less in TLH group as compared to TAH group ($p<0.0001$) (as shown in figure 2).

In our study no significant difference was found in both groups for any intra op complication.

Table 1

Parameters	TLH	TAH	P-value
Mean operative time	89.34 ± 12.3 mint	46.6 ± 5.92 mint	<0.0001, as in figure 1
Mean blood loss	35.21 ± 19.61 ml	138.4 ± 58.6 ml	<0.0001, as in figure 2



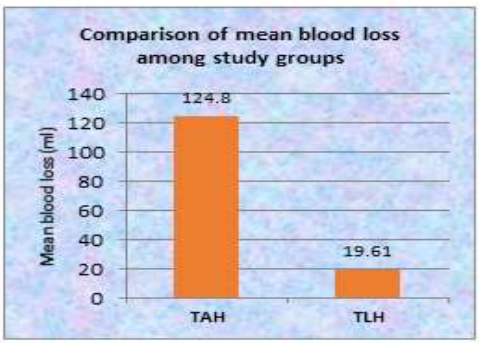


Figure 1 : Comparison of mean operative time of study groups **Figure 2 : Comparison of mean blood loss among study groups**

DISCUSSION:

Hysterectomy is common surgical procedure done by gynecologists. Hysterectomy for benign uterine

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conditions can be done by abdominal, vaginal and laparoscopic routes[1]. Each route has own merits and demerits.

The optimal route of a hysterectomy for a patient will depend on the nature of the pathology, uterine size, uterine descent, the likelihood of pelvic and bowel adhesions (due to endometriosis or previous pelvic surgery), presence of adnexal mass, the surgeon 's preference skill and experience, availability of facility, patient preference after counselling about both procedures[4].

This study was done to compare the two different routes of hysterectomy total laparoscopic hysterectomy and total abdominal hysterectomy and to find out the most efficient route of hysterectomy in women with non-prolapsed uteri up to 14 weeks size by comparing operative time, intra-operative complications, intra-operative blood loss.

In our study mean operative time for TLH was 89.34 minutes compared to 46.6 minutes in TAH groups. This difference was statistically significant. Less operative time in TLH group depends on surgeon's experience and expertness in skill of surgery & assistance of man power. Similar results were found in Dogra A et. Al[1]. study observed that TLH takes longer operative time and higher cost. It offers several benefits over TAH such as smaller incision, earlier ambulation, shorter hospital stay, faster recovery time and does not increase incidence of more serious complications than TAH[1]. Tamrakar SR A et. Al[8]. study observed that in Laparoscopic hysterectomy operating time is longer, it is more beneficial than the traditional TAH for decreasing the length of postoperative hospital stays and intra operative blood loss with no difference in operative complications. Christian Schindlbeck et al[9] showed similar result.

Mean blood loss in our study was 35.21±19.61 ml for TLH group compared to 138.4±58.6ml for TAH group this because of advent of electrocoagulation system and it was statistically significant. This observation was similar to previous studies like Kanmani et al, M. Sridhar et al, leminen A et al, Kirsten B. Kluivers et al, study observed that total laparoscopic hysterectomy showed superior benefits of less intraoperative blood loss[6,11,12,13] early postoperative ambulance, less postoperative pain, and shorter hospital stay. Total laparoscopic hysterectomy is a safe, effective, and reproducible technique after completion of the period of training necessary to standardize the procedure. This approach must be established in our real, day-today clinical practic.

In our study, no intraoperative complications were noted in both TLH and TAH groups. Similar result was found in Nanavati et al, Persson P et al, Andreas Muller et al, Celik C et al study observed that operating time in TLH is longer and less intraoperative blood loss with no difference in operative complications[14,15,16,17]. The complication rate for TLH has gradually been decreased with increased surgical experience at our institute, thus, TLH.

LIMITATIONS OF STUDY:

Our study had several limitations, first it was a single centre study at tertiary hospital and could not be correlated with general population. Second, both the surgeon and observer could not be blinded because of intervention required in the study. Third, only patients with benign uterine conditions up to 14 weeks were recruited, but as we know now TLH can be performed for large uterine size by debulking. Fourth, Psycho-sexual implications of both surgeries were not compared and long-term postoperative effects were not taken into account.

SUMMARY AND CONCLUSION:

TLH group had less intraoperative blood loss and complications, but has more operative time as compared to TAH group.

In conclusion, hysterectomy by laparoscopic route in patients with benign uterine conditions less than 14 weeks found to be safe, less invasive, efficacious as compared to abdominal hysterectomy. Therefore, all patients admitted for hysterectomy with moderately enlarged uterus should be operated for laparoscopic.

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