

Total Laparoscopic Hysterectomy versus Total Abdominal Hysterectomy - A comparative study For Benign Uterine Pathology in Tertiary Care Hospital.”

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Abstract

Objective- To compare the effectiveness and safety of Total Laparoscopic Hysterectomy (TLH) and Total Abdominal Hysterectomy (TAH) for benign uterine pathology.

Design- Prospective randomised comparative study

Setting- Department of Obstetrics and Gynecology, Government Medical College and Hospital, Nagpur, Maharashtra from March 2018 to October 2019.

Subjects- Total 40 Patients undergoing hysterectomy for benign conditions of the uterus were randomized into 20- Total Laparoscopic hysterectomy and 20- Total Abdominal Hysterectomy.

Materials and Methods- The Ethics Committee of the Maharashtra University of Health Sciences approved the study protocol. Special proforma data forms designed to collect the data of all patients involved in the present study, were reviewed and analysed. Patients had given their written informed consent to undergo either laparoscopic or abdominal hysterectomy. Written informed consent will be taken from patient for pre-operative evaluation, surgical procedure, post operative evaluation and willingness to participate in study.

Main Outcomes- Indication for surgery, Operative time, Intra-operative blood loss, Complications, Analgesia and post-operative pain relief, Day of ambulation, Length of hospital stay, Rate of conversion to open abdominal procedure.

Results- There were no differences in basic demographic characteristics variables between the two groups. The most common indication for surgery is abnormal uterine bleeding followed by uterine fibroid. There was significantly longer operative time (154.25 ± 11.37 vs. 78.35 ± 9.31 minutes) but less blood loss (87.25 ± 11.41 vs. 181.25 ± 22.88 ml) in TLH group as compared to TAH group. The post-operative ambulation time and duration of hospital stay was significantly shorter among the cases studied in TLH Group as compared to TAH Group. The mean pain score on visual analogue scale among the cases studied in TLH Group and TAH Group was 3.95 ± 0.51 and 7.55 ± 0.89 respectively, which was statistically significant. There was no statistical difference in intra-operative complications amongst both the groups. The distribution of incidence of post-operative complications among the cases studied did not differ significantly between two study groups.

Conclusion- Our study showed that wherever feasible, laparoscopic hysterectomy is a better option than abdominal hysterectomy for any benign gynecological uterine condition as it is associated with lesser blood loss, earlier ambulation, shorter hospital stay, less intra operative and post operative complications, faster recovery and less post op morbidity.

Keywords: Total Laparoscopic Hysterectomy, Total Abdominal Hysterectomy, Benign Uterine Condition, Hysterectomy, Approach, Complications.

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I. Introduction

Hysterectomy is one of the most commonly performed surgical procedures all over the world. Almost 6, 00, 000 hysterectomies are being done on yearly basis [1,2]. Benign uterine diseases are the most common indication of hysterectomy all over the world, accounting for approximately 70% cases. The most common indications for performing hysterectomy includes fibroids, AUB, adenomyosis, endometrial polyp, endometriosis, endometrial hyperplasia. [3] Approximately 65% of benign hysterectomies are still performed

through an abdominal route despite the recommendations made by ACOG and AAGL to use minimally invasive approaches of hysterectomy like vaginal and laparoscopic as a preferred mode of hysterectomy.

Total laparoscopic hysterectomy is a recent and upcoming progress in the field of gynecological surgery. Advanced laparoscopic procedures are increasingly being utilized in the field of gynecological surgery; however, abdominal hysterectomy is still being performed in more than 80% cases of hysterectomy. (a) Total laparoscopic hysterectomy facilitates better anatomical views, and is suitable for larger uterus and in those patients with little or no uterine descent, which may be difficult to be removed vaginally. (b) Laparoscopic Hysterectomy has been accepted by many patients positively now-a-days because of comparatively smaller abdominal incisions, shorter hospital stay, faster recovery and less post operative pain as compared to Total Abdominal Hysterectomy [4,5]. (c) This study aims to gauge which method results in the best clinical results and to provide evidence for decision making regarding the surgical treatment of benign diseases.

This study was conducted to compare the surgical outcomes with respect to clinical factors, effectiveness and safety of abdominal hysterectomy and total laparoscopic hysterectomies performed at our hospital in benign uterine condition.

II. Materials And Methods

The Ethics Committee of the Maharashtra University of Health Sciences approved the study protocol. A Prospective randomised study was carried out in Government Medical College and hospital, Nagpur, Maharashtra, India comparing TLH and TAH. The study period was from March 2018 to October 2019. Patients had given their written informed consent to undergo either laparoscopic or abdominal hysterectomy. Women of age 30-60 years having benign disease with uterus size upto 14 weeks will be included in this study. All women undergoing hysterectomy and meeting the inclusion criteria will be randomly divided into 2 groups- Total Laparoscopic hysterectomy group and Total Abdominal Hysterectomy group. Simple randomization allocated patients into two groups.

A. Inclusion criteria- All women undergoing hysterectomy for benign uterine pathology.

B. Exclusion criteria-

- a. Uterus size >14 weeks.
- b. Uterine Descent-2nd and 3rd degree.
- c. Women with genital malignancy.
- d. Women with ovarian pathology.
- e. Previously known dense adhesions.
- f. Restricted uterine mobility.
- g. Severe cardiopulmonary disease.
- h. More than 2 previous LSCS.

All the patients were diagnosed based on the history and clinical signs and symptoms apart from the ultrasound examinations. Pre operative Endometrial Biopsy was done for all the patients to confirm the diagnosis. Patients with metastatic and malignant diseases were not included in the study, which is confirmed clinically or by radiological methods. All pre-operative investigations were reviewed. All of the patients had same pre-operative preparation; total laboratory investigations, and hospitalization one day before operation. All the patients received proctoclysis enema 1 day prior to surgery. All patients were operated under General Anaesthesia. All of the patients were operated by same surgeon. All of the patients received same antibiotic prophylaxis pre and postoperatively and both of these two groups received suitable analgesics for pain control. All patients were given adequate analgesia Injection Diclofenac 75 mg BD. All patients were given prophylactic antibiotics in the form of Injection Cefotaxim 1 gm intravenously 1 hour prior to skin incision. Patient's preoperative and postoperative first day hemoglobin value was registered. All of them were followed up for 4 weeks to check for any further complications.

III. Results

In our study there is homogeneity among demographic character in regards to their age, parity, BMI, mean uterine size and indication for surgery and we found no significant differences. In the present study, the most common indication for surgery is abnormal uterine bleeding followed by uterine fibroid. Other causes being Adenomyosis, recurrent endometrial polyp.

There were no differences in demographic characteristics variables between the two groups, in regards to their age, parity, BMI, menopausal status, mean uterine size. In the present study, the most common indication for surgery is abnormal uterine bleeding followed by uterine fibroid. Other causes being Adenomyosis, recurrent endometrial polyp. Of 20 cases studied in TLH Group, 11 (55.0%) had abnormal uterine bleeding, 7 (35.0%) had uterine fibroid, 2 (10.0%) had adenomyosis. Of 20 cases studied in TAH Group,

8 (40.0%) had abnormal uterine bleeding, 7 (35.0%) had uterine fibroid, 3 (15.0%) had adenomyosis and 2 (10.0%) had other indications for hysterectomy.

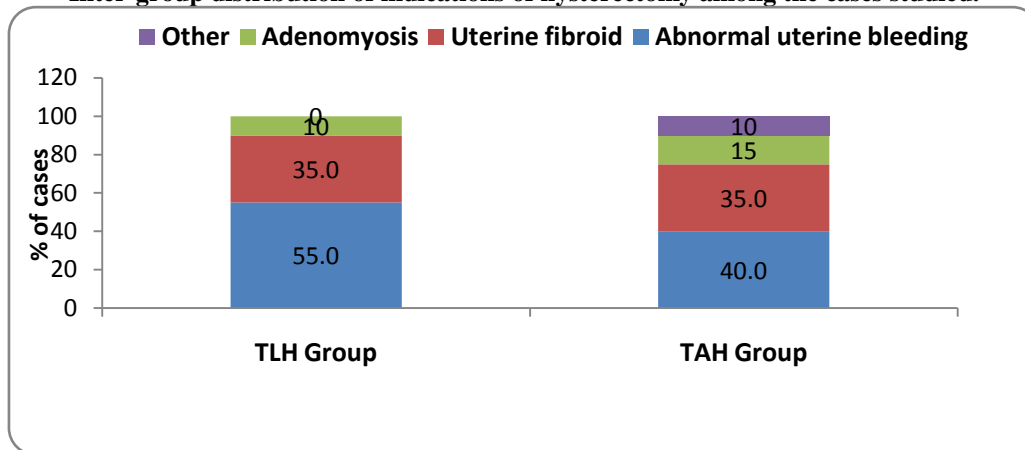
There was significantly longer operative time (154.25 ± 11.37 vs. 78.35 ± 9.31 minutes) but less blood loss (87.25 ± 11.41 vs. 181.25 ± 22.88 ml) in TLH group as compared to TAH group. The post-operative ambulation time (0.62 ± 0.22 vs. 1.70 ± 0.25 days) and duration of hospital stay (3.60 ± 1.14 vs. 8.30 ± 3.31 days) was significantly longer among the cases studied in TLH Group as compared to TAH Group. The mean pain score on visual analogue scale among the cases studied in TLH Group and TAH Group was 3.95 ± 0.51 and 7.55 ± 0.89 respectively, which was statistically significant.

Of 20 cases studied in TLH Group, none had any intra-operative complications. Whereas in TAH Group, 2 (10.0%) had intra-operative complications, which was not statistically significant. Of 20 cases studied in TLH Group, 1 (5.0%) had post-op complication (fever), whereas in TAH Group, 4 (20.0%) had post-operative complications (1 fever, 2 wound discharge and 1 wound gape). The distribution of incidence of post-operative complications among the cases studied did not differ significantly between two study groups (P-value>0.05).

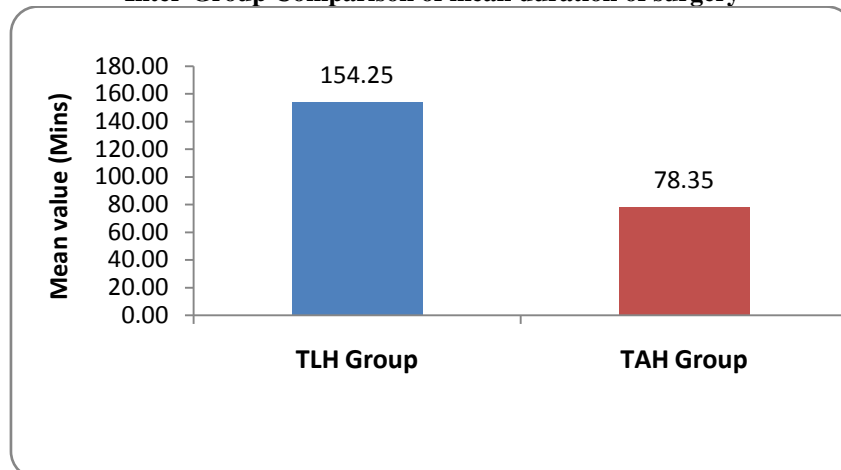
Basic demographic variables in both groups

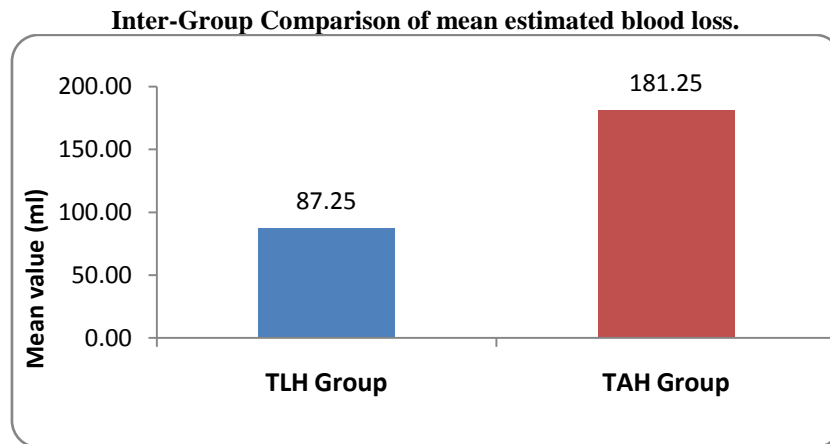
	TLH	TAH
AGE (years)	41.25 ± 6.17	46.05 ± 9.59
BMI (kg/m ²)	23.46 ± 1.09	23.66 ± 0.96
PARITY	2.55	2.75
UTERINE SIZE (weeks)	8.40 ± 2.48	10.00 ± 2.90

Inter-group distribution of indications of hysterectomy among the cases studied.

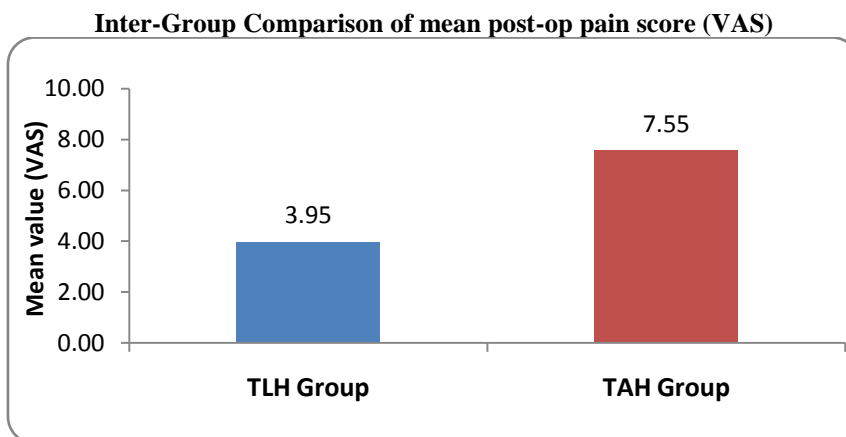
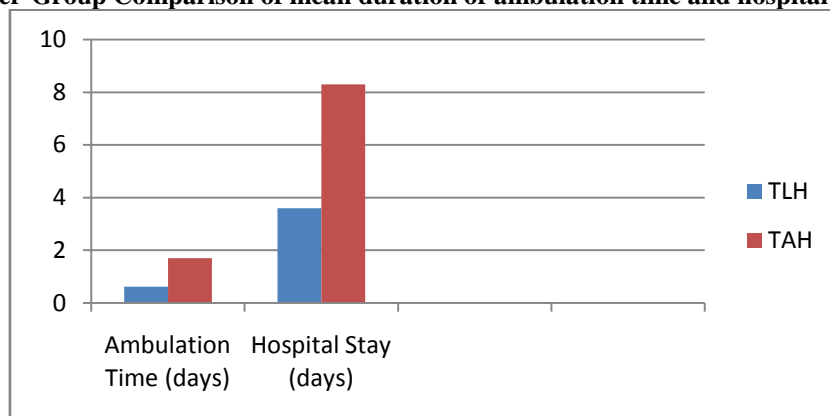


Inter-Group Comparison of mean duration of surgery





Inter-Group Comparison of mean duration of ambulation time and hospital stay.



IV. Discussion

Hysterectomy is one of the most common gynecologic surgeries performed by gynecologists and used for treatment of both malignant and benign diseases. Laparoscopy has been performed in gynecological surgery for more than 20 years, and its use is increasing. In our study there is homogeneity among demographic character in regards to their age, parity, BMI, menopausal status and indication for surgery and we found no significant differences. These results were corroborated by other researchers in similar studies.

In the present study, the most common indication for surgery is abnormal uterine bleeding followed by uterine fibroid. Similar findings were obtained in other studies. **Shreshtha et al**-The indications for surgery were: fibroids 32 (53.3%) followed by adenomyosis 12(20%), DUB 8 (13.3%), PID 5 (8.3%), endometriosis 2 (3.3%) and lastly CIN III 1 (1.7%). [6] **Poonam Agarwal et al**- Most common indications for hysterectomy were uterine fibroid followed by abnormal uterine bleeding both in TLH and TAH groups. [7] **Tapan Pattanaik et al**- According to this study most common indication of TLH and TAH was fibroid uterus which accounts for

40.2% of cases. Second comes abnormal uterine bleeding (28.32%). [8] **Samiksha Jain et al**- In this study, most common indication for laparoscopic hysterectomy was found to be uterine fibroid (39.29%), followed by abnormal uterine bleeding (26.79%). [9]

Because laparoscopic surgery needs experience, laparoscopic hysterectomy take a long time at the beginning, with progressive experience operation time is getting shorter. A lot of studies agree with our results and reported that laparoscopic hysterectomy takes longer operation time than abdominal hysterectomy. The mean intra-operative blood loss in the current study was significantly less in TLH Group as compared to TAH Group. **Sutasanasuang S et al**- Amount of blood loss (389.9 +/- 125.4 cc vs. 275.5 +/- 189.3 cc) and operative time (218.4 +/- 79.3 min vs. 91.1 +/- 53.6 min) in the TLH group there was significantly more loss and longer time than in the TAH group. [10] **Hiroki Nagata et al**- The TLH group had a significantly longer total operation time [133 (82–205) min vs. 87 (57–155) min, less blood loss [5 (5–350) g vs. 100 (10–820) g] as compared to TAH. [11] **Rebecca Mallick et al**- TLH was associated with a significantly lower mean operating time (63.4 versus 75.3min $P < 0.001$) and reduced estimated blood loss (145.1 versus 277.0ml $P < 0.001$). [12]

In our study, it was shown that the patients who underwent laparoscopic hysterectomy were mobilized earlier and had shorter hospital stay than those who underwent abdominal hysterectomy. Concerning the hospitalization time, our data favorably compare with literature, One would also expect that post-operative pain would be reduced when surgery is performed by the minimally invasive route and this is borne out by the literature. Our data is again in keeping with this, with the mean of pain score (analysed by Visual Analogue Scale) in TLH Group and TAH Group was 3.95 ± 0.51 and 7.55 ± 0.89 respectively.

In our study, 5% patient of TLH had minor complication (1 had fever), whereas, this rate was 30% in TAH group (2 had received blood transfusion, 2 patients had wound discharge and 1 patient had wound gape, which required resuturing). Other studies also showed similar results-Of 20 cases studied in TLH Group, none had any intra-operative complications. Of 20 cases studied in TAH Group, 2 (10.0%) had intra-operative complications (2 patients received blood transfusion), which is not statistically significant (P -value > 0.05), with no ureteric injuries noted. In our study there was no significant difference as regard intra-operative complications between both groups. But there was a more post-operative complications in TAH group which includes fever, wound infection and need of resuturing, after open hysterectomy. This result agrees with other studies. **Samiksha Jain et al** - In this study, no local port site infection was reported in the laparoscopic group but wound infection was encountered in the TAH group in 7 cases (12.50%). 3 patients underwent resuturing as they had wound gaping. 6 patients (10.71%) after TAH and 3 patients (5.36%) after TLH were given blood. 2 patients (3.57%) in laparoscopic hysterectomy group and 5 patients (8.93%) after abdominal hysterectomy had fever episode postoperatively.

V. Conclusion

Our study showed that wherever feasible, laparoscopic hysterectomy is a better option than abdominal hysterectomy for any benign gynaecological uterine condition as it is associated with less operative time, lesser blood loss, earlier ambulation, shorter hospital stay, less intra operative and post operative complications, faster recovery and less post operative morbidity.

The gynecologist should discuss the options with patients and relatives and make clear recommendations on which route of hysterectomy will maximize benefits and minimize risks given the specific clinical situation. The relative advantages and disadvantages of the different routes of hysterectomy should be discussed with patient and relatives. The patient and health care provider should together determine the best course of action after this discussion.

This study demonstrates the outcome, safety and effectiveness of offering a novel approach like TLH to each and every patient who presented in a general gynecology clinic with benign gynecological condition that is suitable for an abdominal hysterectomy.

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Conflict of interest: All authors declared no conflict of interest.

No violation of human rights and safety.

Ethical approval: The study was approved by the Institutional Ethics Committee.

Informed consent: Informed consent was obtained from all individual participants included in the study.

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