



ORIGINAL RESEARCH PAPER

A STUDY TO EVALUATE THE ROLE OF TOTAL LAPAROSCOPIC HYSTERECTOMY VERSUS TOTAL ABDOMINAL HYSTERECTOMY IN THE MANAGEMENT OF BENIGN GYNAECOLOGICAL DISEASES COMPARING INTRAOPERATIVE OUTCOME AND POSTOPERATIVE OUTCOME

Obstetrics & Gynaecology

KEY WORDS: Total laparoscopic hysterectomy (TLH), Total abdominal hysterectomy (TAH) and benign gynaecological diseases

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ABSTRACT	Introduction - Total laparoscopic hysterectomy was introduced by Reich in 1989. Since then, it has become a worldwide technique. Aims & Objectives - To evaluate the role of TLH versus TAH in the management of benign gynaecological conditions. Materials And Methods - This prospective observational study was conducted in the Department of Obs and Gynae in RMCH & RC, Kanpur from August 2022 to April 2024. 200 patients randomly selected from gynae OPD divided into two group 120 patients for TAH and 80 patients for TLH. Result - TLH is associated with much lower mean blood loss, shorter duration of hospital stay, and reduced postoperative haemoglobin decline compared to TAH. Concerning intraoperative complications, there was no statistically significant difference between the two groups (p value >0.05). A p value of less than 0.0001 indicates that the TAH group's duration of hospital stay (2.61 ±1.05 days) was substantially longer than the TLH group's (1.89 ±0.71 days). In TLH group only 11 patients (13.8%) explained postoperative complications. A statistical analysis revealed that TAH group had a higher incidence of postoperative complications than the TLH group. Conclusion - TLH is a good alternative of conventional abdominal hysterectomy, especially after good training to standardized the procedure, proper case selection, day to day practice and application of sound surgical principals.

INTRODUCTION:

Hysterectomy, the surgical removal of the uterus, is a common procedure performed for various benign gynecological diseases. It is estimated that over 600,000 hysterectomies are performed annually in the worldwide alone, making it one of the most frequently performed surgeries in women.

TAH is effective and provides good surgical visibility, it is associated with longer hospital stays, increased postoperative pain, and a higher risk of complications such as wound infections and thromboembolic events. In recent decades, minimally invasive surgical techniques have gained popularity, with total laparoscopic hysterectomy (TLH) emerging as a preferred alternative to TAH. TLH involves the use of small incisions and specialized instruments to remove the uterus laparoscopically. This approach offers several advantages, including shorter hospital stays, faster recovery times, reduced postoperative pain, and smaller scars. Additionally, TLH has been associated with lower intraoperative blood loss and a reduced risk of postoperative complications compared to TAH.

Despite these advantages, the choice between TLH and TAH is still debated, particularly in terms of intraoperative and postoperative outcomes.¹⁹ Some studies suggest that TLH may have a longer operative time due to the complexity of laparoscopic techniques, while others report comparable or even shorter operative times when performed by experienced surgeons.

AIMS & OBJECTIVES:

To evaluate the role of TLH versus TAH in the management of benign gynaecological conditions specifically comparing intra operative and post operative outcome.

MATERIALS & METHODS:

Study Design: Prospective observational study

Venue Of The Study: Department of Obstetrics and Gynecology, Rama Medical College Hospital and Research Center, Kanpur, Uttar Pradesh.

Study Sample Size: 200 patients randomly selected from gynae OPD, divided into 2 group 120 patients for TAH & 80 patients for TLH

Study Period: August 2022 - April 2024

Inclusion Criteria: Patients included in this study are 40-65 year old women undergone Hysterectomy, irrespective of size of uterus.

Exclusion Criteria: Known case of malignancy or clinical suspicion of malignancy, cardiac and pulmonary disease.

RESULTS & OBSERVATIONS:

Table 1 : Size of Uterus (Cases Selected Irrespective Of Size Of Uterus)

Size of Uterus	Total Abdominal Hysterectomy (n=120)	Total Laparoscopic Hysterectomy (n=80)
	Mean ± SD	Mean ± SD
Size of Uterus (cm)	16.50 ± 1.39	14.11 ± 1.49
Statistical Inference	p value: <0.0001	

The mean size of uterus in TAH group was 16.50 ±1.39 cm which was significantly greater than TLH group 14.10 ±1.49 cm with a p value of <0.0001

Table 2: Indication Of Surgery

Indication	TAH Frequency	TAH Percent age	TLH Frequency	TLH Percent age
Fibroid	62	51.7%	54	67.5%
Adenomyosis	30	25.0%	16	20.0%
DUB	10	8.3%	4	5.0%
Endometrial hyperplasia	20	16.7%	10	12.5%
Endometriosis	14	11.7%	6	7.5%
Benign Ovarian Tumors	4	3.3%	2	2.5%
Total	120	100.0%	80	100.0%
Statilcal Inference	$\chi^2 = 8.33, p \text{ value} = 0.139$			

Most common indication of hysterectomy in both groups was fibroid (51.70% in TAH vs. 67.5% in TLH group), with no statistically significant difference between two groups (p value = 0.139).

The incidence of intra-operative complications in TAH and TLH group is shown in Table 3. The incidence of bladder injury was 1.7% in TAH and 2.5% in TLH group (p value = 0.829),

while ureteric injury was only seen in TLH group (2.5%), vascular injury was only seen in TAH group (0.8%), bleeding was seen in 4.2% patients TAH and 2.5% in TLH group. conversion to laparotomy was seen 1.3% in TLH. There was no statistically significant difference between two groups in terms of any intra-operative complications (p value = >0.05).

Table 3: Intra-operative Complications

Complication	TAH Frequency	TAH Percentage	TLH Frequency	TLH Percentage	p value
Bladder Injury	2	1.7%	2	2.5%	0.829
Ureteric Injury	0	0.0%	2	2.5%	0.135
Bowel Injury	0	0.0%	0	0.0%	-
Vascular Injury	1	0.8%	0	0.0%	-
Bleeding	5	4.2%	2	2.5%	0.386
Conversion to laparotomy	0	0.0%	1	1.3%	0.227
Total	8	6.7%	7	8.8%	

Table 4: Postoperative Complications

Complication	TAH Frequency	TAH Percentage	TLH Frequency	TLH Percentage	p value
Wound Infection	12	10.0%	0	0.0%	0.012
Fever	20	16.7%	3	3.8%	0.043
VVF	3	2.5%	2	2.5%	1.000
Vaginal Discharge	4	3.3%	2	2.5%	0.742
Port Site Serous Discharge	0	0.0%	4	5.0%	0.021
Total	39	32.5%	11	13.8%	-

Post operative complications were seen in only 11 (13.8%) of subjects in TLH group and 39 (32.5%) subjects in TAH group. This difference found to be statistically significant (p value = 0.0005).

Table 5: Pre Operative And Post Operative Haemoglobin Level

Haemoglobin Level	Total Abdominal Hysterectomy (n=120)		Total Laparoscopic Hysterectomy (n=80)		Statistical p value
	Mean	±SD	Mean	±SD	
Preoperative Hb (gm/dl)	11.94	±0.91	11.77	±0.98	0.196
Postoperative Hb (gm/dl)	10.39	±0.89	10.67	±0.98	0.041

Preoperative mean haemoglobin level in TAH and TLH group was 11.94 ±0.91 (gm/dl) and 11.77 ±0.98gm/dl respectively with no statistically significant difference (p value = 0.196).

Postoperative haemoglobin level was significantly lower in TAH group (10.39 ±0.89 gm/dl) in comparison to TLH group (10.67 ±0.98 gm/dl) (p value = 0.041).

Table 6 : Estimated Blood Loss, Duration Of Surgery And Duration Of Hospital Stay

Duration of Hospital Stay	Total Abdominal Hysterectomy (n=120)		Total Laparoscopic Hysterectomy (n=80)		p value
	Mean	±SD	Mean	±SD	
Estimated Blood Loss (ml)	126.45	±34.25	37.68	±12.52	<0.0001

Duration of Surgery (min)	100.57	±26.53	124.88	±20.33	<0.0001
Duration of Hospital Stay (days)	2.61	±1.05	1.89	±0.71	<0.0001

Mean estimated blood loss was significantly greater in TAH (126.45 ±34.25 ml) in comparison to TLH group (37.68 ±12.52 ml) with a p value of <0.0001.

In TLH group, the mean duration of surgery was significantly longer than in TAH group (124.99 ±20.33 minutes vs. 100.57 ±26.53 minutes) (p value <0.0001).

Duration of hospital stay was significantly longer in TAH group (2.61 ±1.05 days) in comparison to TLH group (1.89 ±0.71 days) with a p value of <0.0001.

DISCUSSION
Several factors determine which hysterectomy approach is best for a given patient. These include the type of pathology, the size and descent of the uterus, the presence of any adnexal masses, the surgeon's personal preference, the available facility, and the patient's preference after receiving counselling regarding both options. Gupta et al The researchers found that compared to TAH patients, TLH patients had a substantially reduced volume of estimated blood loss (EBL) after surgery.

Also, none of the 50 TLH cases they looked at had UTIs caused by laparoscopy.^[3]

According to Yang et al., TLH required much more time to operate than TAH.^[2]

The average time it took to complete the surgery was 124.99 minutes in the TLH group and 100.57 minutes in the TAH group (p value = <0.0001). The TAH group had a substantially higher mean estimated blood loss (126.45 ±34.25 ml) compared to the TLH group (37.68 ±12.52 ml), with a p value of less than 0.0001. There was a 1.7% incidence of bladder injury in the TAH group and a 2.5% incidence in the TLH group, of which one detected intraoperatively and repaired, other one presented with urinary leak on 4th postoperative day as VVF, repaired after 3 months but only 2.5% of ureteric injuries of which one was repaired intraoperatively & other one detected after one week was repaired on day 10 of surgery. No bowel and vascular injuries occurred in the TLH group. Additionally, 4.2% of TAH patients and 2.5% of TLH patients experienced bleeding. Concerning intraoperative complications, there was no statistically significant difference between the two groups (p value >0.05). There was a significant difference in the postoperative haemoglobin levels between the TAH group (10.39 ±0.89 gm/dl) and the TLH group (10.67 ±0.98 gm/dl) (p value = 0.041). A p value of less than 0.0001 indicates that the TAH group's duration of hospital stay (2.61 ±1.05 days) was substantially longer than the TLH group's (1.89 ±0.71 days). Only 11 patients (13.8%) in the TLH group and 39 patients (32.5%) in the TAH group experienced postoperative complications. A statistical analysis revealed that this difference was highly significant (p = 0.0005).

In comparison to the TAH group, the TLH group had a longer total operation time [133 (82-205) min vs. 87 (57-155) min, P < 0.0001], less blood loss [5 (5-35) g vs. 100 (10-820) g, P < 0.0001], a shorter hospital stay [7 (5-14) days vs. 10 (9-26) days, P < 0.0001], and lighter uterine weight [206 (27-658) g vs. 554 (79-2284) g, P=0.0001]. The occurrence of perioperative problems was found to be similar in both groups, according to Nagata H et al. (3.5% vs. 8.0%, P = 0.4103).^[4]

Rao TS et al TLH took 117.37±14.15 minutes longer than TAH, according to their study. TAH took 53.65±10.17 minutes. Compared to TLH(470.59±101.59 ml), TAH resulted in a higher amount of operational blood loss (292.22±76.98 ml).

The duration of operation was shown to have a statistically significant negative link ($r = -0.607$ and $p < 0.0001$) with blood loss.^[5]

Aboufotouh et al The researchers found that the operating time for TAH was lower than that of LH (2.22 ± 0.93 vs 2.43 ± 0.94 , respectively; $p = NS$). Blood loss was lower in the LH group (258.54 ± 65.26 versus 370.32 ± 74.8 , respectively; $p = NS$) compared to the TAH group. The two groups did not differ significantly in terms of intraoperative or early postoperative problems rates, while the TAH group had considerably higher rates of late postoperative complications ($p < 0.05$). Compared to TAH, LH resulted in a shorter duration of hospital stay (3.63 ± 1.28 days vs 5.22 ± 4 days; $p < 0.001$).^[1]

Farooq R et al The study indicated that the TAH group had a higher incidence of postoperative complications such as wound infection ($p = 0.013$), resuturing ($p = 0.028$), ileus ($p = 0.038$), haemoglobin decline ($p < 0.001$), and postoperative blood transfusion ($p = 0.032$), all with a significant p value less than 0.05. Additionally, compared to the TLH group, the TAH group had significantly shorter surgery durations, shorter time to ambulation after surgery, and shorter mean hospital stays (all with p -values less than 0.05).^[6]

Shakuntla et al The study found that operative time for TLH was 89.34 ± 12.3 minutes, while for TAH it was 46.6 ± 5.92 minutes ($p < 0.0001$). TLH patients had a shorter mean ambulation time (15.16 ± 4.64 hours) compared to TAH patients (48.76 ± 5.08 hours) ($p < 0.0001$). TLH patients resumed normal daily activities earlier (4.39 ± 0.2 weeks) compared to TAH patients (11.8 ± 1.77 weeks) ($p < 0.0001$). TLH group had fewer intra-operative and post-op complications and higher patient satisfaction scores compared to TAH group.^[7]

Uwais A et al The study found that the TLH group had a longer duration of surgery, a shorter hospital stay, and no documented instances of wound infection.^[8]

From the above explanation, it may be inferred that TLH is associated with much lower mean blood loss, shorter duration of hospital stay, and reduced postoperative haemoglobin decline compared to TAH. Additionally, early release of patients can also contribute to improved outcomes. However, when dealing with patients who have more intricate pathology, the decision between TLH and TAH will be contingent upon the surgeon's level of expertise.

CONCLUSION

Our observation indicates that the TLH group is linked to reduced intraoperative blood loss, a smaller decrease in postoperative haemoglobin levels, and a shorter hospital stay. However, the surgery itself takes longer, although this can be offset by the aforementioned advantages. TLH is also linked to a lower occurrence of intraoperative and postoperative complications. However, when dealing with patients who have more intricate medical conditions, the decision between TLH and TAH will be influenced by the surgeon's level of expertise.

Acknowledgement:

Authors are thankful to Rama Medical College Hospital and Research Center where study was done.

Declarations

Funding: No funding sources
Conflict of interest: none declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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