



Comparative study of total laparoscopic hysterectomy versus total abdominal hysterectomy for benign pelvic diseases in a private hospital: A retrospective study

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Abstract

Background: The laparoscopic technique of hysterectomy has gained more popularity worldwide from the time it was introduced in 1989 by Reich. The aim of the study was to compare the surgical results between total laparoscopic hysterectomy and total abdominal hysterectomy.

Methods: We conducted a retrospective study of medical records of patients who underwent Total abdominal hysterectomy and total laparoscopic hysterectomy at Hitech Medicare Hospital and Research centre, Udupi between June 2017 to May 2019.

Results: We observed that there was no significant difference between the two groups in respect to patient's age, parity, indication of surgery, or with history of previous abdominal surgery. Duration of surgery was found to be longer in total laparoscopic hysterectomy (117.37 ± 14.15 min) than total abdominal hysterectomy (53.65 ± 10.17 min). Operative blood loss was more in total abdominal hysterectomy (292.22 ± 76.98 ml) than in total laparoscopic hysterectomy (470.59 ± 101.59 ml). There was also negative correlation observed between duration of surgery and blood loss and it was statistically significant ($r = -0.607$ and $p < 0.0001$).

Conclusions: This study revealed that total laparoscopic hysterectomy is better in outcomes such as less blood loss, early discharge from hospital as compared to total abdominal hysterectomy.

Keywords: laparoscopic, hysterectomy, compared, gynaecological

Introduction

Hysterectomy, a gynaecological surgery is the second most major surgery performed next to caesarean section^[1]. Among the two approaches for the procedure, laparoscopic hysterectomy has become widely accepted technique worldwide from the time it was first introduced Reich in 1989^[2]. The main reasons for opting laparoscopic hysterectomy over laparotomy were the advantages of early post op recovery, reduced post op complications, shorter duration of hospital stay and lesser intra operative blood loss considering from a patient's point and for a surgeon, laparoscopy helped in magnified view of uterine structures^[3].

But there are also cases where laparotomy is still a preferable technique due to availability of a trained surgeon/team or equipment itself and also when the approach may not be feasible using laparoscopy like in patients with history of multiple abdominal surgery, dense pelvic/ bowel adhesions and large fibroids^[2].

Thus, the aim of this study was to compare the intra and post-operative outcomes of TAH (total abdominal hysterectomy) and TLH (total laparoscopic hysterectomy) for benign pelvic diseases.

Methods

A Retrospective analysis of medical records of patients who underwent either TLH or TAH in Hitech Medicare Hospital Ambalapady, Udupi, Karnataka, India was carried. The cases taken were from the period June 2017 to May 2019. The medical records and theatre register of the patients were reviewed and variables sought were age, parity, indication for operation, intra-operative details, post-operative recovery,

and subsequent postoperative review findings.

Records of patients with malignancies were excluded from the study. Hence, 88 records of patients were included in the study and out of which 34 patients had undergone TAH and 54 of them had undergone TLH.

Operative techniques: TAH and TLH were performed with the help of general surgeon. Patients were generally admitted one day prior to surgery for bowel preparation. Prophylactic antibiotic Dippin 1.5g (Ceftriaxone 1g plus sulbacin 500 mg) was given preoperatively 30 minutes before surgery. Supine position was used for TAH, whereas Trendelenburg position was used for TLH. In TAH - after induction of anaesthesia and the patient in supine position, an abdominal (vertical or transverse) incision was made to proceed to hysterectomy.

TLH - The procedure was performed same as LAVH above the uterine artery level. After laparoscopic dissection of the bladder flap and resection of the broad ligament, the uterine artery was coagulated by bipolar coagulation and was separated from the uterine sidewall by harmonic. Then bilateral coagulation and transection of the cardinal-uterosacral ligament complex were performed carefully.

The cervicovaginal junction was confirmed with vaginal tube through the vagina. Circular colpotomy was then performed close to the cervix. The uterus was removed through the vagina and sent for histological examination. Endosutures were placed on the vaginal cuff in 30 cases. In the remaining 24 cases vault was not closed instead a mop was placed which was removed after 24 hrs.

The duration of operation was calculated from the first skin incision to the last suture of the abdominal wound. Blood loss was calculated from aspiration and pad soakage.

Postoperative medication was administered intravenously for analgesia and Dippin 1.5g(ceftriaxone 1g plus sulbacin 500mg) intravenously 12th hourly two doses in both the groups.

Febrile morbidity was defined as an oral temperature of 100.4 ° F/38.0° C or higher, excluding the first 24 h postoperatively. Duration of hospital stay was calculated from the day of surgery to the day of discharge. Patients were discharged when they were afebrile, with normal voiding, and off analgesic [2].

Statistical analysis

Data were presented as mean and SD or percentage. A statistical analysis of the data was performed using unpaired Student’s t test for continuous variables. Chi-square test or Fisher exact test was applied for categorical variables. Pearson correlation coefficient was done to find significance between operative time and blood loss. P < 0.05 was considered statistically significant.

Results

The mean age of patients who underwent TLH was 48.50±6.89 years and TAH was 48.71±5.81 in years. The mean parity of patients was 2.07±1.21 and 1.79±1.22 in TLH and TAH respectively. There was no statistically significant difference noted between the two groups regarding age, parity and history of previous surgery but the difference between the two groups in the indication of surgery was statistically significant. (p 0.002) [Table 1 and Figure 1]

Table 1: Characteristics of patients

Variable		TLH(n=54)	TAH(n=34)	P value
Age (in years)	<40	4(7.4%)	2(5.9%)	0.78
	40-49	31(57.4%)	19(55.9%)	
	50-59	13(24.1%)	11(32.4%)	
	≥60	6(11.1%)	2(5.9%)	
Parity (no. of viable children)	Nulliparous	7(13%)	5(14.7%)	0.92
	1	8(14.8%)	8(23.5%)	
	2	20(37%)	12(35.3%)	
	3	13(24.1%)	7(20.6%)	
	4	5(9.3%)	2(5.9%)	
History of previous abdominal surgery	No	34(63%)	15(44.1%)	0.06
	Yes	20(37%)	19(55.9%)	

*significant

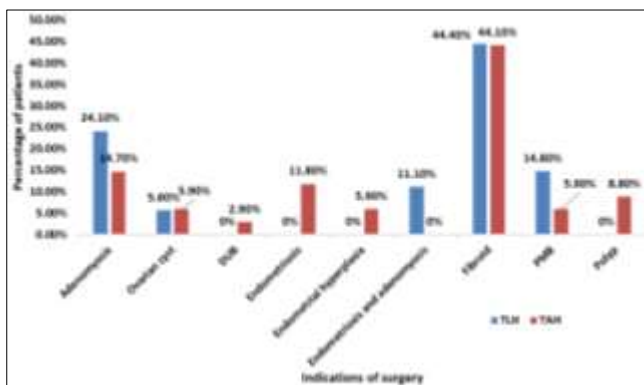


Fig 1: Indications of surgery

Table-2 intra-operative and post-operative details of patients: In TLH group, the operative time was significantly longer than in the TAH group. Other parameters like intra operative

blood loss and duration of hospitalisation was more in TAH group. There was significant difference between the two groups regarding all three parameters. In 4(7.40%) TLH patients, complications like organ injury was observed and no intra operative injuries were observed in TAH. Blood transfusion requirement post-operative was seen in 10(66.7%) patients who underwent TAH as compared to 5(33.3%) patients who underwent TLH and the difference was statistically significant. (p value 0.014). There was also negative correlation observed between duration of surgery and blood loss and it was statistically significant (r -0.607 and p<0.0001) suggesting less blood loss in TLH than TAH. [Table 2]

In 6 cases out of the 54 cases who underwent TLH, laparoscopy had to be converted into open surgery as the complications could not be handled appropriately with laparoscopy method.

Table 2: Distribution of patients according to outcomes

Variable	TLH	TAH	p value
Duration of surgery (in minutes)	117.37±14.15	53.65±10.17	<0.001*
Blood loss (in ml)	292.22±76.98	470.59±101.59	<0.001*
Hospital stay (in days)	3.41±0.92	6.12±1.06	<0.001*

*significant

Discussion

This was a two-year retrospective analysis of records of patients who underwent TAH and TLH in Hitech Medicare Hospital Ambalapady, Udipi, Karnataka, India. In this study, the mean age of patients who underwent TLH was 48.50±6.89 and TAH was 48.71±5.81 in years. There was no statistically significant difference noted between the two groups regarding age, parity and history of previous surgery but the difference between the two groups in the indication of surgery was statistically significant. Similarly, in the study done by Kanmani M *et al.* [2], the mean age was 46.5±8.9 and 46.9±6.9, P-0.8 in TAH and TLH respectively and in a study done by Naveen M *et al.* [4] the mean age was 46.2±4.1 in TAH and 41.5±3.1 in TLH respectively.

The mean parity of patients was 2.07±1.21 and 1.79±1.22 in TLH and TAH respectively in this study. Similarly, in the study done by A Perino *et al.* [5] mean parity was 2.4±1.4 and 2.3±1.48 in TLH and TAH respectively and low in the study done by Kanmani *et al.* [2] it was 1.56±0.7 and 1.59±1.2 in TLH and TAH respectively.

In the present study there was history of previous abdominal surgery in 37% of patients who underwent TLH and 55.9% in patients who underwent TAH whereas in study done by Naveen M *et al.* [4] (10.5% and 19.8% of patients who underwent TAH and TLH respectively) and Kanmani *et al.* [2] (28% and 25.5% of patients who underwent TAH and TLH respectively) it was less.

The most common indication of any type of hysterectomy was fibroids followed by adenomyosis as seen in this study as well as studies done by Hoorbano Khan *et al.* [1], Kanmani M *et al.* [2]

Duration of surgery was longer in TLH and consistent results were seen in studies done by Kanmani M *et al.* [2], Virupaksha *et al.* [6], Hoorbano Khan *et al.* [1] and Anju Dogra *et al.* [7] This study showed that even though the duration was longer in TLH as compared to TAH, the blood loss was reported less in quantity in TLH as a negative correlation was seen. Thus, post -operative requirement of blood transfusion was seen

more in open surgery than laparoscopic ones. Similar findings were also seen in studies done by by A Perino *et al.* [5], Naveen M *et al.* [4] and by Nanavati *et al.* [8] which showed reduced blood loss in TLH.

Intra operative complications were seen in TLH in our study and even in studies reported in O Donnez *et al.* [9] and Kanmani M *et al.* [2]

Duration of hospital stay was much shorter in TLH than TAH in this study as well studies done by by Kanmani M *et al.* [2], Anju Dogra *et al.* [7] Nanavati *et al.* [8] thereby suggesting early recovery in patients undergoing laparoscopic procedures than traditional open procedures.

Systemic review including 25 RCTs (2983 women) comparing TLH and TAH also reported findings in the lines of this study [10].

Conclusion

This study reveals that in TLH there is early recovery, less complications post operatively, on the other hand there are more chances of intra operative injuries and longer duration required for surgery when compared to TAH.

Thus, laparoscopic procedure has better outcomes as compared to traditional abdominal surgery (laparotomy) but still laparotomy cannot be completely replaced as there can be cases where laparoscopic surgeries have to be converted to open due to complications like bowel or ureteric injury and also other indications like malignancies or complex benign pathologies.

References

1. Khan H, Tapadar D, Sengupta D. Comparative study on total abdominal hysterectomy versus total laparoscopic hysterectomy in patients with uterine weight less than 500 gms. *J. Evid. Based Med. Healthc.* 2019; 6(8):490-494. DOI: 10.18410/jebmh/2019/102.
2. Kanmani M, Govindarajan M, Selvaraj V. Comparative study of surgical results between total abdominal hysterectomy and total laparoscopic hysterectomy in a tertiary hospital: a 2-year retrospective study. *Int J Reprod Contracept Obstet Gynecol.* 2018; 7:1019-23.
3. Mereu L, Carlin R, Pellegrini A, Guasina F, Berlanda V, Tateo S, *et al.* Total laparoscopic hysterectomy for benign disease: outcomes and literature analysis. *Gynecological Surgery.* 2018; 15(1):19.
4. Reddy MVN, Reddy MR. Comparison of total abdominal, vaginal and total laparoscopic hysterectomy. *Int Surg J.* 2016; 3:2007-11.
5. Reddy MVN, Reddy MR. Comparison of total abdominal, vaginal and total laparoscopic hysterectomy. *Int Surg J.* 2016; 3:2007-11.
6. Pernio A, Cucinella G, Venezia R. Total laparoscopic hysterectomy versus total abdominal hysterectomy: an assessment of learning curve in prospective randomized study. *Hum Reprod.* 1999; 14:2996-09.
7. Ajjammanavar V, Jayashree S, Amrutha B. Total laparoscopic hysterectomy versus total abdominal hysterectomy: a retrospective study. *J Evid Based Med Healthcare.* 2015; 2(41):7019-25.
8. Dogra A, Kumar V, Bhushan N. TLH versus TAH: a 2-year retrospective comparative study. *Int J Reprod Contracept Obstet Gynecol* 2019; 8:3939-42.
9. Nanavati AM, Gokral SB. A prospective randomized comparative study of vaginal, abdominal, and laparoscopic hysterectomies. *J Obstet Gynaecol India.*

2016; 66(1):389-94.

10. Donnez O, Jadoul P, Squifflet J, Donnez J. A series of 3190 laparoscopic hysterectomies for benign disease from 1990 to 2006: evaluation of complications compared with vaginal and abdominal procedures. *BJOG.* 2009; 116:492-500.
11. Aarts JWM, Nieboer TE, Johnson N, Tavender E, Garry R, Mol BWJ, *et al.* Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database of Systematic Reviews*, 2015, (8). Art. No.: CD003677. DOI: 10.1002/14651858.CD003677.pub5