



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

A RETROSPECTIVE STUDY ON SURGICAL MORBIDITY: LAPAROSCOPIC VERSUS ABDOMINAL HYSTERECTOMY

KEY WORDS: Complication, minimal invasive surgeries.

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ABSTRACT

Laparoscopic skills are not innate behavior, nor can they be easily mimicked, and can only be acquired through hands-on training. The need for reliable training and its assessment is becoming increasingly important with the course of time. **Materials And Methods:** A retrospective comparative study was done in a tertiary care center where all patients undergoing hysterectomy by laparoscopic and abdominal route were included in the study. **Objectives:** Our study aims to compare the operative and postoperative complications of laparoscopic hysterectomy with abdominal hysterectomy. The study was conducted from August 2023 to August 2024 at Rama Medical college, Hospital and Research centre, Kanpur. **Results:** The mean operative time, blood loss, hospital stay was significantly shorter in TLH when compared to TAH. **Conclusion:** TLH when performed efficiently has proved to be a preferable route over other conventional hysterectomies.

INTRODUCTION

Hysterectomy is one of the most common procedures in gynecological practice. It itself is a surgical challenge, regardless of the route—vaginal, open abdominal, or endoscopic. The abdominal route provides more flexibility to surgeons. With the advent of laparoscopy, its recent development and widespread application laparoscopic route have gained an edge over the abdominal and vaginal route. The indications have expanded to include conditions once reserved for open surgeries, such as large fibroids, pelvic prolapse, and endometriosis,^[2] improving postoperative quality life and satisfaction as compared to conservative management.^[3] The technical difficulties of this procedure can be highly variable depending on the uterine size and possible concomitant conditions affecting the patient, such as pelvic adhesive disease, endometriosis, or the presence and location of leiomyoma's.^[3]

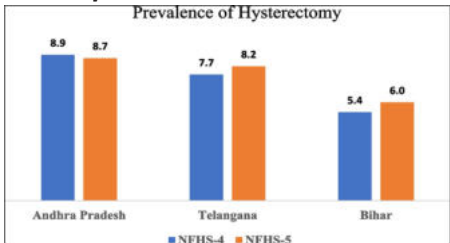


Fig no.1 Prevalence of hysterectomy of top 3 Indian States.

Objectives

In the present study, we aim to compare operative and postoperative complications of laparoscopic hysterectomy with abdominal hysterectomy, hence, assess the preferable route of surgery.

MATERIALS AND METHODS

This retrospective comparative study was conducted in a tertiary care center in a single unit institutional setup over a period of January 2024 to January 2025. The study conforms ethics committee approval statement. All patients who underwent total laparoscopic hysterectomy (TLH) and total abdominal hysterectomy (TAH) were included in the study. All hysterectomies performed either through the vaginal route, secondary to obstetrics cause or intractable hemorrhage and malignancy were excluded. The included patients were divided into two groups: TLH (Group 1) and TAH (Group 2) respectively. The operative data/register was studied thoroughly, and patients were contacted telephonically if required. The baseline characteristics of the two groups were comparable. It included the age and body mass index (BMI) of

the patient, size of the uterus, intraoperative complication, injury to adjacent organs, postoperative complications like surgical site infections (SSI), duration of hospital stay were studied. Also, as performed in a single unit, hence the inter-surgeon experience/variation was excluded. All data analysis was done by IBM SPSS Statistics for Windows, Version 26.0. All the continuous variables were presented as mean and standard deviation and categorical data as frequency and percentage. P <0.05 will be considered significant.

RESULTS

In the present study, a total of 100 patients were included in the study of which 50 underwent TLH (Group 1) and 50 underwent TAH (Group 2). The baseline characteristics of patients were comparable. The age and BMI of the patients in the two groups were comparable. The mean operative time for uterus size lesser than 12 weeks and uterus size 12-20weeks was found significant in the TLH group when compared to TAH. However, with an increase in uterine size, the mean operative time was comparable in both groups. The mean blood loss in the TLH group was significant (112 ± 32 ml vs. 160 ± 108 ml, P < 0.05). The mean hospital stay was significantly shorter in TLH (4.2 ± 2.28 days vs. 7.6 ± 2.41 days, P < 0.001). The operative and postoperative complications were observed to be 6 % in the TLH group and 22 % in the TAH group.

DISCUSSION

The surgical approach many at times form the determining factor for postoperative surgical morbidity in patients especially in cases of abnormal uterine bleeding which is considered a diagnosis of exclusion. It accounts for most of the referrals to the gynecological outpatient department and in the majority of patients, no organic pathology is identified that which makes it difficult to convince patients to medical management and follow-up, thus preferring

Parameters	Mean ± SD		P
	TLH (n=50)	TAH (n=50)	
Age (years)	46.3±4.02	47.3±3.85	0.207
BMI (kg/m ²)	27.3±1.82	26.9±2.12	0.3256
Mean operative time (min) (weeks)			
Uterine size <12	78±23	119±28	<0.001
Uterine size 12-20	95.4±17.2	121±25.4	<0.001
Uterine size 20-28	111±25	121±49	0.2017
Blood loss (mL)	112±32	160±108	<0.05
Hospital stay (days)	4.2±2.28	7.6±2.41	<0.001

P<0.05: Significant. n: Total number of cases, BMI: Body mass index, SD: Standard deviation, TLH: Total laparoscopic hysterectomy, TAH: Total abdominal hysterectomy		
Table 2: Comparison of complications between 2 groups		
Complications	TLH	TAH
Port site infection	0	-
Port site hernia	0	-
Blood transfusion	2	4
UTI	0	0
Small bowel injury	0	0
Ureteric injury	0	0
Bladder injury	1	1
SSI	-	4
Renal failure	0	0
Multiple-organ failure	0	0
Death	0	0
TLH: Total laparoscopic hysterectomy, TAH: Total abdominal hysterectomy, UTI: Urinary tract infection, SSI: Surgical site infection		

surgical management as their ultimate solution. The studies done previously have demonstrated a dependence of surgical morbidity not only on the surgeon's degree of experience with the respective laparoscopic operation but also on the amount of experience with endoscopic procedures of the entire treating center. Technicalities and skilled assistance to surgeon act as vital support toward uneventful surgeries, right from the decision of port placement, adequate vaginal manipulation, and counter-hand assistance during laparoscopic surgeries to proficient, observant perspective in abdominal hysterectomy. As a rule of thumb, the camera trocar is placed at the umbilicus, either supra-umbilical or infra-umbilical as long as it is a minimum of 15 cm from the symphysis pubis. With the da Vinci S and Si systems, the trocars must be at least 10 cm apart at approximately a 30° angle. Also, the 10 mm trocar needs to be placed a 2–3 finger breadth distance from the upper border of the uterus in order to provide a complete panoramic view of the uterus, adnexa, and adjoining structures. With an increase in the size of the uterus meant for hysterectomy, it gets impossible to see it completely via panoramic view. The cephalic displaced vascular pedicles contribute further to difficulties faced while operating for a larger-size uterus, thus increasing the chances of complications like ureteric injury.

The technical difficulties of this intervention can be highly variable depending on the uterine size and possible concomitant conditions affecting the patient, such as pelvic adhesive disease, endometriosis, or the presence and location of leiomyoma's. In the present study, it was seen the time taken for uterine size lesser than 12 weeks was significant with TLH (75 ± 25 min vs. 117 ± 28 min $P < 0.001$) as compared to TAH. However, with an increase in uterine size, the time taken was comparable. The blood loss during TLH was significantly less as compared to that during TAH (110 ± 30 ml vs. 160 ± 116 ml, $P < 0.002$).

In our present study, the mean postoperative hospital stay was 4 ± 2.47 days for TLH as compared to 7 ± 2.43 days for TAH in patients with non-SSI, however, the median was 11 days for patients with SSI ($P < 0.001$). In a study done by Aboulfotouh *et al.*, 2020 the length of hospital stay for LH (3.63 ± 1.28 days) as compared to TAH (5.22 ± 4 days).^[7] In another study done in Bhubaneswar by Pattanaik *et al.*, the hospital stay in TLH was seen to be 2.58 ± 1.98 days. The result is significant showing shorter hospital stays in TLH when compared with conventional hysterectomy.^[8] In a study done by Balci where TLH was compared with open surgical procedures showed laparoscopic surgery causes less tissue trauma and inflammatory response and thus a shorter healing period.^[9] The length of hospital stay increases with the complexity of cases, and the development of complications operated via

laparotomy as compared to laparoscopy. In the present study, the overall rate of complications was seen to be 6 % in the TLH group (6/50) as compared to the 22 % TAH group (11/50),

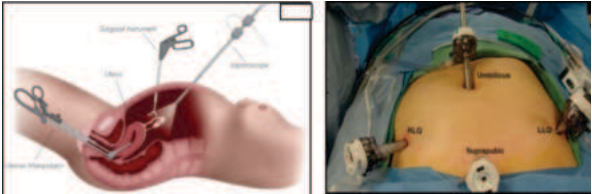


Figure: Image showing LH with instruments.

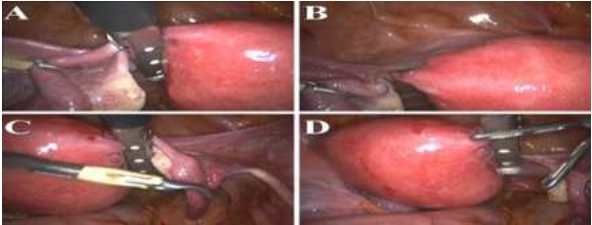


Figure: Showing steps of LH



Figure: Showing types of incision given in the TAH



Figure: Showing removal of uterus after abdomen hysterectomy

Table 3: Comparative analysis of baseline parameters of total laparoscopic hysterectomy in different studies						
Parameters	Sana Ashfaq et al., 2021	Liliana Mereau et al., 2018	Stefano Uccella et al., 2018	Pande et al., 2023	Aboulfotouh et al., 2020	Our study
Total number of cases enrolled (n)	50	361	258	223	41	50
Operative time duration (min)	124.26 ±44.74	115±36.00	120 (range: 50–360)	113.7 ±29.2	2.43±0.94	78±23
Hospital stay (days)	2.01±0.39	2.60±1.1	1 (range: 1–8)	3.25±0.82	3.63±1.28	4.2±2.28
Complications (%)	10	0.8	10.8	8.07	19.5	6
n: Total number of cases						

In our study 2 patients with ureteric injury were diagnosed postoperatively and managed by Ureteric reimplantation. The risk of injury was increased in patients with a previous history of surgeries resulting in the adhered bladder and also the risk is increased by concomitant conditions like endometriosis, pelvic adhesive diseases and large size of uterus.

In this study, no cases of bowel injury were noted. Bowel injuries occur in <1% of laparoscopic procedures. An International Society for Gynecologic Endoscopy survey found that bowel injury was less frequent among experienced surgeons, yet the risk of injury during abdominal access was unrelated to experience. The next most common cause was the electrosurgical injuries (28.7%). Therefore, it becomes of utmost importance that all trocars should be placed and removed under vision, and energy sources should be handled with care and under vision. A significant portion (40%) of bowel injuries were not recognized intraoperatively. The median time to diagnosis was 3 days, varying between 1 and 13 days postoperative.

As surgeons continue to expand their laparoscopic skills and increase the number and type of complex laparoscopic procedures offered to their patients over conventional surgeries, it is important for them to be familiar with the potential complications that may arise during and after surgeries. Emphasis should be placed on the prevention of complications by meticulous surgical training in technique and appropriate patient selection and meticulous management of complications both intraoperatively and postoperatively.

CONCLUSION

Surgical morbidity can be reduced with efficient and skillful practice and meticulous postoperative care. Thus, surgeries performed are the result of teamwork and leadership skills that are essential in ensuring that patients have minimal morbidity and mortality.

Limitations

1. The data collection was on the basis of medical records, Operation theatre registers.

Financial Support And Sponsorship

Nil.

Conflicts Of Interest

There are no conflicts of interest.

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