

# Total Laparoscopic Hysterectomy - A Retrospective Observational Study in a Teaching Hospital.

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## ABSTRACT

**Background:** Hysterectomy is a frequently performed operation for the benign conditions of uterus, but the route of hysterectomy is always a matter of discussion. Laparoscopic hysterectomy has been criticised many a time regarding its complication and duration of surgery. But availability of newer machines and techniques has popularised it recently. Most of the studies regarding this have been done by the single surgeon with expert hand. This study has been conducted in a university teaching hospital where there are many surgeons with different expertise along with the beginners. **Methods:** It is a retrospective observational study conducted in IMS and SUM hospital Bhubaneswar which is an university teaching hospital. 286 Total laparoscopic hysterectomy patients between July 2014 to June 2015 were analysed regarding the demography, indication of operation, duration of operation, intra operative blood loss and perioperative complication along with duration of hospital stay. **Result:** Major indication of surgery was fibroid uterus accounting for 40.20% followed by AUB 28.32%. Mean time of surgery in TLH is 2.34±0.67hrs and average blood loss is 150.9±58.8ml. 4.54% cases had major intra operative complications; minor post operative complications were in 14.68% cases. The conversion to laparotomy rate was 1.39% and 0.68% cases had urinary tract injury. Mean duration of hospital stay was 2.58± 1.98days. **Conclusion:** TLH is a safe procedure with minimal blood loss and shorter duration of hospital stay with surgical expertise. We can never ignore the machine behind the man.

**Keywords:** Blood loss, Complication, Hospital stay, Total laparoscopic hysterectomy.

## INTRODUCTION

Route of hysterectomy always remains as a matter of discussion till date. In 1989 first total laparoscopic hysterectomy (TLH) was performed and published by Reich et al.<sup>[1]</sup> Initially, many studies criticized laparoscopic hysterectomy for its prolonged duration of surgery and its complications.<sup>[2,3]</sup> In 1998 Garry reported that the prolonged duration of laparoscopic surgery in most of studies is due to the fact that all the studies were conducted during the world's learning curve of laparoscopic hysterectomy.<sup>[4]</sup> In 2009 a Cochrane review on hysterectomy done for benign conditions concluded that laparoscopic hysterectomies are slower and are associated with more vaginal bleeding compared to vaginal hysterectomy (VH).<sup>[5]</sup> But in a sub analysis of Total laparoscopic hysterectomy versus vaginal hysterectomy, there was no significant difference. Later on with experience and new techniques debate started on TLH versus VH.<sup>[6]</sup> Presently TLH is considered to be the day care surgery with minimal complication.<sup>[7]</sup> Most of the studies have been done in the private set up with single experienced surgeon. In this study we have evaluated the safety and benefits of laparoscopic hysterectomy in a university

medical college with different surgeons with different level of expertise. Aim of the study is to evaluate the outcome of Total laparoscopic hysterectomy with respect to duration of surgery, intra operative complication, post-operative pain and duration of hospital stay.

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## MATERIALS AND METHODS

This is a retrospective observational study carried out in IMS and SUM Hospital Bhubaneswar. All the TLH performed during the period from July 2014 to June 2015 were taken into account. Total number of 286 TLH cases was studied. The surgeries were performed by different surgeons. The bed head records of all the patients were retrieved and were analysed with using statistical method like percentage, mean and standard deviation.

Data regarding the age, parity, indication of surgery, history of previous surgery, size of the uterus, concomitant surgery performed, were noted. All the patients were operated by taking proper consent after explaining the advantages and disadvantages of laparoscopic procedure. All patients were given dulcolax 2tab HS on the day before surgery for bowel preparation. Duration of surgery was noted from the bed head ticket which was considered to be the time between the umbilical incision and port closure. As a hospital protocol the blood loss during operation was calculated from the difference between the volume of fluid introduced into the cavity and volume of fluid aspirated from the abdominal cavity and it was retrieved from the operation note.

Most of the surgeries were done under general anaesthesia and in a modified lithotomy position. In many cases combined epidural and general anaesthesia was administered. Pre-operative

ceftriaxone was given to all cases as antibiotic prophylaxis. Surgeries were done by using bipolar forceps, monopolar and harmonic. Abdominal entry was mostly by direct 10 mm trocar except a few cases where veress needle was used. Uterine manipulator was used in almost all the cases. Only in a small number of cases myoma screw was used for uterine elevation. High definition camera with light source was used. Only in case of very big uterus laparoscopic morcellator was used, in rest of cases specimen was retrieved through vagina. Vault closure was done by endosuturing in majority of cases. All the intra operative complications like injury to bowel and urinary tract were retrieved from the operation theatre note. Conversion to laparotomy and post-operative morbidities like fever, UTI, port infection, respiratory infection, vault bleeding were also noted.

Duration of hospital stay is usually 48 hours in cases of TLH. Patients requiring more stay were analysed.

## RESULTS

**Table 1: Demography.**

Age	No of cases N=286	Percentage (%)	Para	No of cases N=286	Percentage (%)	H/O previous surgery	No of cases N=286	Percentage (%)
30-35	6	2.09	Nulliparus	9	3.14	0	198	69.23
35-40	52	18.18	Para-1	51	17.83	1	56	19.58
40-45	92	32.16	Para-2	152	53.14	2	27	9.44
>45	136	47.55	>Para -2	74	25.87	>2	5	1.74

Table 1 Shows majority of patients (47.55%) belongs to the age group of more than 45 years. Out of 286 cases only 9 cases (3.14%) are nulliparus while 96.84% cases are parus and majority of cases (69.23%) do not have history of any previous surgery. Only 19.58% cases have history of one previous surgery.

Table 2 Shows majority of cases (196, 68.53%) in the study group have uterine size of 12-16 wks of size. Only 2.79% cases are beyond 20wk of size.

Table 3 shows most common indication of hysterectomy in our study is fibroid uterus which accounts for 40.2% of cases and all the patients were operated for benign conditions by laparoscopy. No malignant cases were operated by laparoscopy in our study. Second most common cause for hysterectomy in our study is abnormal uterine bleeding (28.32%).

**Table 2: Size of the uterus and hysterectomy.**

Size of uterus	No of cases (N=286)	Percentage (%)
6-12wk	45	15.73
12-16wk	196	68.53
16-20wk	37	12.93
>20wk	8	2.79

**Table 3: Indication of hysterectomy.**

Indications	No of cases (N=286)	Percentages (%)
AUB	81	28.32
Fibroids	115	40.20
Adenomyosis	27	9.44
Endometriosis	11	3.84
Post menopausal bleeding	15	5.24
Cervical dysplasia	6	2.09
Ovarian cyst	27	9.44
Preventive hysterectomy	2	0.69
Chronic pelvic pain	1	0.34
Ovarian mass	1	0.34

**Table 4: Intra operative events.**

Duration of surgery in hr	No of cases (N=286)	Percentage (%)	Amount of blood loss	No of cases (N=286)	Percentage (%)
<1hr	4	1.39	<100ml	30	10.48
1-2hr	80	27.97	100-150ml	56	19.58
2-3 hr	161	56.29	150-200ml	151	52.79
>3hr	41	14.33	>200ml	49	17.13
Mean time	2.34±0.67hrs		Average blood loss	150.9±58.8ml	

Table 4 shows mean time of surgery in TLH is 2.34±0.67hrs and average blood loss is 150.9±58.8ml.

Table 5 shows 55 cases that are 19.32% of cases had complication peri-operatively. While 4.54% cases had major intra operative complications, minor post-operative complications were there in 14.68% cases. Here the conversion to laparotomy rate is 1.39%. Only one case of ureteric injury and one case of bladder injury is reported here .In 2 cases bowel injury were there. In case of the bowel injury one was injury to bowel by the scissor which was

repaired primarily, other case was due to the injury due to thermal damage which was detected on the third post-operative day and colostomy was done and repair was done later on. The ureteric injury was detected in the 14h post-operative day which was again due to thermal injury. Ureteric repair was done by the urologist. Among the port site infection, in two cases port site tubercular infection were detected which was treated with anti-tubercular drugs. Vaginal discharge and fever are two common minor complications in our study.

**Table 5: Preoperative complication.**

Complication	No of cases(N=286)	Percentage (%)
Major		
ureteric injury	1	0.34
Bladder injury	1	0.34
Bowel injury	2	0.69
Laparotomy conversion	4	1.39
Major bleeding	5	1.74
Total no of cases with major complications	13	4.54
Minor		
Fever	16	5.59
Dysuria	6	2.09
Vaginal discharge	10	3.49
Port site infection	10	3.49
Total no of cases with minor complications	42	14.68

**Table 6: Duration of hospital stay.**

Duration of hospital stay	No. of cases	Percentage (%)
Within 4 days	261	91.25
4days-8days	8	2.79
More than 8days	17	5.94
Mean duration of stay	2.58±1.98days	

## DISCUSSION

In the present study the demographic character demonstrated majority of cases (47.55%) are beyond the age of 45 years and 96.84% cases are parous. Most of cases (69.23%) do not have history of any previous surgery. Caesarean section was the most common operation in the patients with history of previous operation.

### Indication-

The most common indication in this study was found to be fibroid uterus (40.20%). The second most common indication for hysterectomy was AUB (28.32%). According to Bharatnur in a study commonest indication of hysterectomy was DUB (34%).<sup>[8]</sup> Chakraborty et al reported fibroid to be the most common cause of hysterectomy accounting for 38.5% in the study.<sup>[9]</sup> Bettaiyan Ramesh reported

54.4% of cases which was the main benign surgical indication in their study.<sup>[10]</sup>

### Operation time and blood loss-

The average operation time in case of total laparoscopic hysterectomy in our study is 2.34±0.67hrs. Nanavati et al in their study mentioned the average operating time in TLH is 108min.<sup>[11]</sup> In another study by Schindlebeck et al the average operating time for TLH is 130 mins.<sup>[12]</sup> Actually the duration of surgery depends on the expertise of the surgeon and also on the vessel sealing device. In our study the average blood loss is 150.9±58.8ml ml. In a study by Agarwal et al shows average blood loss is 145ml.<sup>[13]</sup> According to Aniulienė et al [14] and schindlebeck et al<sup>[12]</sup> average blood loss in TLH is 123ml and 200ml respectively which is almost similar to our study. The average time of operation and the average blood loss also depend on the expertise of the surgeon along with the quality of the

vessel sealer used. Usually the blood loss in TLH is less as in laparoscopy the vision is magnified and the skin incision length is very small. The bleeding also very much dependant on the coagulation device used.

### **Complication-**

Agarwal P et al has reported major complication rate TLH is 1.6%.<sup>[13]</sup> According to Nanavati et al major complication rate is 2%.<sup>[11]</sup> Bettaiah et has reported still less major complication rate that is 0.9%.<sup>[10]</sup> Karaman et al<sup>[15]</sup> and Brummer et al<sup>[17]</sup> described major complication rate to be 1 and 1.8% respectively while in our study the major complication rate is 4.54%. This complication rate is more compared to other studies. This may be due to the fact that in our study there are different surgeons with different level of expertise. O' Halan<sup>[17]</sup> reported urinary tract injury, GI tract Injury to be 2.8% and 0.8% respectively in case of TLH. In the present study incidence of urinary tract injury is 0.69% and bowel injury is also 0.69%. According to the study by Bettaiah conversion to laparotomy rate is 0.93% while in the present study is 1.39%.<sup>[10]</sup> In the minor complications fever is the most common complication accounting for 5.59% of cases. In this study most of the patients who had history of previous operation landed up in complication. Here 3 out of 4 cases in which laparotomy conversion was required had a history of previous surgery and the other one was a case of 24 week size uterus. Mean duration of hospital stay in our study is 2.58±1.98days which is similar to study by nanavati et al and Agrawal et al<sup>[11, 13]</sup>. The limitation of this study is that in this study the operations were done by different surgeon with different level of expertise and we have not taken the post-operative pain evaluation. Post-operative pain evaluation could not be done as this was a retrospective study and pain scoring was not done in none of the cases.

## **CONCLUSION**

The present study shows clearly total laparoscopic hysterectomy is definitely advantageous with regards to amount of intra operative bleeding, duration of hospital stay. Regarding the safety of the procedure, it is also safe but the complication rate can be further decreased with proper experience and technique.

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