Original Research Article

Total laparoscopic hysterectomy: A retrospective study of one year

Gauri Dank[1*], Sandhya Bhattad[2], Rucha Dhokte[3], Jyotsna Kshirsagar[4], Anuradha Palnitkar[5], Vaishali Khadke[6]

[1,2]Fellow for FMAS-G, [3,4,5]Consultant, [6]HOD, Department Of OBGY, Dr. Hedgewar Hospital, Aurangabad, INDIA.
Email:ruchachavan1989@gmail.com

Abstract

Background: Hysterectomy is one of the most common gynecological surgeries performed. This study was done to review the data of all patients who underwent Total Laparoscopic Hysterectomy. **Methods:** A one year retrospective study was performed at Dr. Hedgewar hospital, Aurangabad, Maharashtra India. Demographic data, pre-operative findings, indication for surgery, intra-operative and post-operative complications, duration of surgery were recorded and analyzed. **Results:** A total of 108 women were included in the study. Mean age of the patients was 45 years. Most common indication for the surgery was leiomyoma. Mean operating time was 140 minutes. Intra-operative urinary bladder injury was not there. 1 patient required laparotomy postoperatively for intestinal obstruction. **Conclusions:** With improving experience TLH can be performed safely without complications. As number of surgeries done increases duration of TLH reduces. TLH can be effectively used to avoid laparotomy.

Keywords: Abnormal uterine bleeding, Hysterectomy, Total laparoscopic hysterectomy.

***Address for Correspondence:**
Dr.Rucha Dhokte, Consultant, Dr. Hedgewar Hospital, Aurangabad, INDIA.
Email: ruchachavan1989@gmail.com
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INTRODUCTION

Hysterectomy is one of the most frequent gynecological surgeries performed. Although the exact prevalence of hysterectomy in India is not known, it is estimated to be 17 per 1000 married women.[1] Abdominal route for hysterectomy has been preferred over a long period of time. It is technically easier to perform, doesn't require any specialized equipment. It definitely has a shorter learning curve compared to laparoscopic surgeries. But the main disadvantage is the post-operative pain mainly because of the abdominal wall incision[2] other drawbacks of abdominal hysterectomies are longer hospital stay and a marginally increased future risk of hernias and a scar over abdomen. Hysterectomy performed laparoscopically overcomes the disadvantages of abdominal route. Laparoscopic hysterectomy was first reported by Reich in 1989.[3] Laparoscopic hysterectomy is associated with shorter hospitalization, faster post-operative recovery with less pain, lesser infections and absence of cosmetically unacceptable scar.[4] Laparoscopy has the additional benefit of magnification and better visualization of pelvic structures.[5] The main disadvantage of laparoscopy is the long learning curve, surgeon needs patience to gain competence. It is more technology dependent and requires costlier equipment and instruments. The risk of lateral spread of energy and resultant delayed urological complications is preventing most surgeons to shift to laparoscopic hysterectomy. However, with experience and taking intra operative precautions this can be minimized. This study is aimed at analysing the laparocopic hysterectomies performed at a tertiary care hospital over a period of one year. It is aimed to know the indications for surgery, the time taken to perform the surgery, complications involved and their management.

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METHODS

This retrospective study was conducted at Dr. Hedgewar Hospital, Aurangabad, Maharashtra, India from January 2022 to December 2022. A total of 108 patients were included in the study. Case records of all the patients who underwent total laparoscopic hysterectomy were reviewed. Data regarding demographic details of patients, indication for hysterectomy, duration of surgery, energy source used, any intra-operative or post-operative complications and their management were analysed.

Surgical method

Uniform surgical technique was used to perform the surgery. Energy source used was bipolar diathermy. Pneumoperitoneum was created with a safety trocar of 5mm. 10 mm primary port was created in the supra umbilical region. 2 lateral ports were created on the left side so that they made an isosceles triangle with primary port. One lateral port was created on the right side. Sankpal's vaginal manipulator was used to elevate the uterus. Round ligament, fallopian tube and ovarian ligament were coagulated and cut on either side. Uterovesical fold of peritoneum was opened and bladder was pushed down. Posterior leaf of broad ligament was opened till the level of uterosacral ligament. Uterine artery was coagulated and cut. Makenrodt's ligament was coagulated and cut. Vaginal tube was used to elevate the vaginal vault and then was opened with monopolar energy source. All patients underwent bilateral salphingectomy. Ovaries were removed only in indicated patients. Vault was sutured with vicryl number 1. All specimens was extracted by vaginal route and wherever indicated by mechanical morcellation in cases of big uterine size.

RESULTS

In this study there were a total of 108 patients who underwent laparoscopic hysterectomy over a period of 1 year. Majority of the patients, 42 (38.8 %) were belonging to the age group of 45-49 years (Figure 1). Mean age of the patients was 45 years. All the patients were parous.

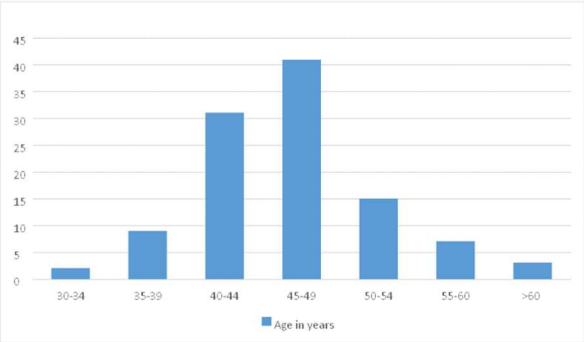

Figure 1: Mean age of the patients in years.

Table 1: Indications for TLH

Indication	No.of patients
Leiomyoma	50
Endometrial Hyperplasia	12
Adenomyosis	10
AUB not relieved by medical management	13
Leiomyoma and adenomyosis	4
Ovarian cyst	12
Endometrial polyp	3
Carcinoma Endometrium	1
Postmenopausal bleeding	3

Most common presenting symptom was heavy menstrual bleeding in 65 patients (60 %) patients, followed by dysmenorrhea in 18(16.6 %) patients. Most common indication for the surgery was leiomyoma uteri in 50 (46.2 %) patients. Some patients had more than one indication for the surgery (Table 1).

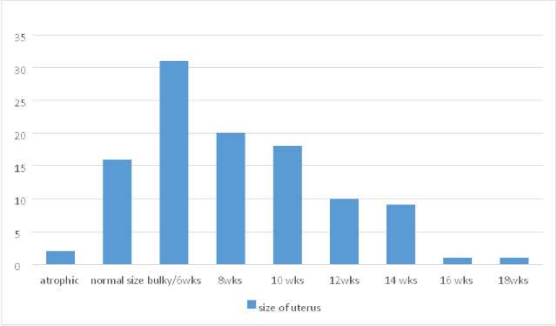

Figure 2: Size of the uterus on clinical examination

On bimanual examination size of the uterus corresponded to 6weeks gravid uterus in 31 (28.7%) patients (Figure 2). Ovarian cyst was found on clinical examination among 12 (11.1%) patients, largest one corresponding to 18 weeks.

Table 2: patients with medical illness

Medical illness	No. of patients
Type II DM	4
Hypertension	18
DM and Hypertension	2
Hypothyroidism	17
Anemia	6
Dust allergy	1
Depression	1

There were 18 (16.6 %) patients with pre-existing hypertension, 4(3.7%) with type II diabetes, 2(1.8%) with both hypertension and type II diabetes, 15 (13.8 %) with hypothyroidism. There were 6 (5.5 %) patients with corrected anemia who required blood transfusion preoperatively (Table 2).

Table 3: patients with prior surgeries

Tubal ligation	**29**
Abdominal	18
Laparoscopic	11
Previous caesarean	**24**
1 LSCS	11

2 LSCS	13
Laparoscopic appendicectomy	5
Laparotomy	1
D andC polypectomy	6
Laparoscopic cholecystectomy	2
Spine surgery	2

Past history of undergoing surgery was present in 73 (67.5%) patients. There were 18 (16.6%) patients who had undergone abdominal tubal ligation, 11(10.1%) laparoscopic sterilization. There were 24 (22.2 %) patients with history of previous cesarean of whom 11 had one previous surgery, 13 had 2 previous cesareans (Table 3). Surgery done was hysterectomy with bilateral salphingectomy in 7 (6.48%), hysterectomy with bilateral salphingo-oophorectomy in 101 (93.5%). Energy source used was bipolar with monopolar electrocautery in all patients. Vaginal vault was sutured vaginally in 42 (38.8%) patients and laparoscopically in 66 (61.1%).

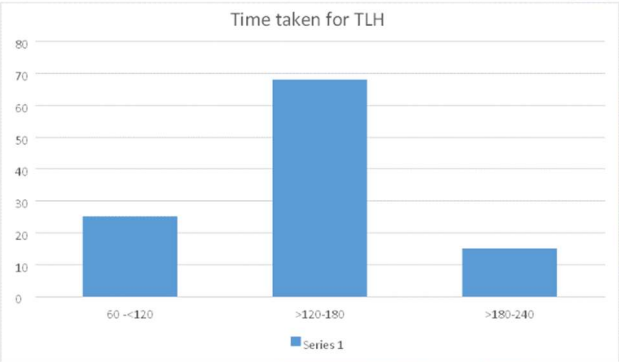

Figure 3: Mean time taken for TLH.

Time taken was 121-180 minutes in most 68 (62.96%). It was done in 120 minutes or less in 25 (23.1%) patients. Time taken was more than 180 minutes in 15 (13.8%) patients and in these patients, there was either history of previous cesareans or big fibroids where specimen retrieval also takes time. (Figure 3). Vaginal morcellation in patients with larger uteri prolonged the overall duration. Blood loss was 100-200 ml in 77 (71.2%) and less than 100 ml in 30(27.7%) patients. Mean operating time has reduced over the 1-year period. The procedure was converted to laparotomy in 1 (0.9%). Reason for conversion to laparotomy was due to dense adhesions because of endometriosis.

Table 4: Intra and post-operative complications

Complication	No. of patients
Haemorrhage requiring transfusion intraop	1
Paralytic ileus	2
Secondary haemorrhage	2

Intra operatively in one patient DJ stenting was done prior to hysterectomy as patient had large endometriotic cysts on both sides. None of the patients had any complications in the intra-operative period except 1 (0.84%) requiring blood transfusion. Postoperatively 5 patients needed packed cell transfusion as they had pre-existent anemia though it was corrected preoperatively. One patient was a diagnosed case of endometrial carcinoma. She underwent lymph node dissection also along with hysterectomy. One patient underwent umbilical hernia repair and 2 patients had hemorooidectomy done concurrently with hysterectomy. One patient required laparotomy in week 2 for small bowel obstruction. She was a case of irritable bowel syndrome and had taken inadvertent doses of immodium on her own in post op period after discharge. That resulted in decreased motility and adhesion of small intestine at vault which required resection anastomosis. All patients were discharged on third post-operative day. Mean hospital stay was 3.4 days. Delayed post-operative complications in the form of secondary haemorrhage was seen in 2 (1.85%) patients. Both were treated conservatively with antibiotics and anti-fibrinolytics. 1 patient required re-admission. There was no case of urological or bowel injury in this study. There was no case intra-operative or delayed post-operative injury to the ureters in this study. Most of the patients were on regular follow up and none had any delayed post-operative complication except 12 (11.11%) in whom there were symptoms of hot flashes. These patients had undergone oophorectomy.

DISCUSSION

Patient satisfaction and wellbeing following any procedure is based on post-operative pain, recovery and hospital stay. The route which achieves all the purposes would be preferred by the patients. With increasing experience in laparoscopy and improvement in the technology TLH can be safely performed without any increase in major complication rates. The findings in this study regarding mean age of the patients was years and the most common indication for hysterectomy being leiomyoma was similar to study done by Bonilla *et al.*[6] In recent years there are better options both pharmacological and non-surgical for management of causes of AUB. Most studies report leiomyoma as the leading indication for hysterectomy as with the present study.[7] Various studies have compared abdominal, vaginal and laparoscopic route for hysterectomy, in an attempt to conclude which, one is the best. TLH, when compared with Vaginal hysterectomy, a meta-analysis found no significant differences in urinary tract injuries between both methods.[8] The evaluate study is one such randomized study which concluded that laparoscopic hysterectomy is associated with less postoperative pain and quicker recovery. But the study also stated that laparoscopic hysterecyomy was associated with longer operating time and urological complications when

compared with AH.[9] However the conclusions from study has been widely debated and higher complication rates have been attributed to inexperience of the surgeon, non-standardized surgical procedure and faulty instruments.[10-12] A meta-analysis comparing vaginal hysterectomy to laparoscopic hysterectomy showed no difference in complications and duration of hospital stay. But vaginal hysterectomy has the definite advantage of shorter operative time. Conversion to laparotomy is much less required in cases of vaginal route.But the laparoscopic route was associated with lower post-operative pain.[13] When compared to abdominal hysterectomy, many studies have stated that laparoscopic hysterectomy has higher complication rates and particularly the urological complications.[14] But there is increasing evidence in recent years which concludes that in experienced hands and with a perfect technique, laparoscopic route is not associated with any increase in complications rate and even urological complications are not more.15,16

Conversion rate in the present study was 0.9% as only 1 patient needed laparotomy. Conversion rate reported by Bettaiah R *et al.*[7] was 0.93% and Vaisbuch E *et al.* was 1.8%.[17] Conversion rate of 10.9% was reported by Sinha R *et al.* it was needed for intractable hemorrhage, bladder injury and inability to reach all pedicles.[18]. Conversion rate is also proportional to the surgical volume at any institution. With improving skill of the surgeon and the team, the conversion rate decreases.[19]

Mean operating time in the study was minutes. Bonilla *et al.* reported mean operating time of 156 minutes[6] Mean operating time of 115±36 minutes was noted by Mereu *et al.*[20] This variability in mean operating time among different studies is due to the fact that TLH has a learning curve and a plateau which is quoted by these studies. Also, it is observed that mean operating time has remained static in our study and the reason being difficult surgeries were done in the recent months.

Various investigators have studied the learning curve for TLH. A study shows that the learning curve for TLH plateaus after about 75 cases after which operating time as well complication rates reduce.[21,22] Cochrane review states that TLH can be done when vaginal hysterectomy is not possible to avoid abdominal hysterectomy.[23] The aim is to avoid laparotomy as far as possible so that the disadvantages of laparotomy can be avoided.

CONCLUSION

TLH is an ideal approach to hysterectomy. With increasing competency and experience in TLH there is good evidence that it can be done safely with no undue increase in complication rates. Although laparoscopic approach is associated with longer operating time which eventually decreases as the surgeon's experience increases. Following a uniform surgical procedure and timing each step is the key to prevent complications and reduce the operating time.

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