

Study of outcome of total laparoscopic hysterectomy

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Abstract

Objective: Present study will analyse outcome of total laparoscopic hysterectomy in terms of indication, duration of surgery, post operative stay, decrease in haemoglobin after surgery, post operative pain and complications associated with procedure. Study Design: Prospective observational study at a tertiary care hospital in women undergoing total laparoscopic hysterectomy. **Results:** We studied 40 patients, Indications of total laparoscopic hysterectomy were - 40% cases were operated for fibroid uterus, 20 % for abnormal uterine bleeding, 12.5 % cases for ovarian pathology, 10 % cases for adenomyosis, 5 % cases for CIN, 7.5 % cases for endometrial hyperplasia, 2.5 % cases for post-menopausal bleeding and endometrial carcinoma each. Average operative time required was 136.56 minutes. Average haemoglobin fall was 1.18 gm% on day 2, which showed that in laparoscopic hysterectomy loss of blood is acceptable. **Conclusion:** Laparoscopic hysterectomy is an effective tool while considering intraoperative complications and postoperative course, follow up event and duration of stay in hospital and patients satisfaction.

Key Words: Laparoscopic hysterectomy, TLH, Complications.

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INTRODUCTION

Hysterectomy is one of the most common gynaecological procedure performed and there is increasing incidence for various reasons. It can be performed abdominally, vaginally or laparoscopically. On the basis of data from multiple centres worldwide number of hysterectomy performed through the abdominal, vaginal and laparoscopic presented differently depending on the experience and training in the technique, operations, indications, etc. Increasing experience and improved

laparoscopic instruments enabled gynaecologists to extend indications for laparoscopic procedures as well as the range of the operation itself. The first laparoscopic hysterectomy was performed in 1988 and published in 1989¹, but this surgical technique started gaining widespread acceptance from 1991². Since the introduction of laparoscopic hysterectomy, several modifications have been described as laparoscopic assisted vaginal hysterectomy (LAVH), laparoscopic assisted supra-cervical hysterectomy (LSCH) and total laparoscopic hysterectomy (TLH). Despite extensive literature on the benefits of minimally invasive surgery—including lower perioperative morbidity, improved quality of life, shorter hospital stay, and more rapid return to activity—abdominal hysterectomy remains the most common approach.^{3,4} Lack of available training opportunities outside of fellowships, lack of mentor surgeons, and hesitancy among established surgeons to attempt a new system with a perceived long learning curve for surgical proficiency.⁵ Nevertheless, there is a clear trend in all surgical fields, driven by patient demand and outcomes reported in the literature, toward minimally invasive

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procedures. This study will analyse outcome of total laparoscopic hysterectomy in terms of indication, duration of surgery, and post-operative stay, decrease in haemoglobin after surgery, post-operative pain and complications associated with procedure.

OBJECTIVE

To study the outcome of total laparoscopic hysterectomy in terms of indication, duration of surgery, post-operative stay, and decrease in haemoglobin after surgery, post operative pain and complications associated with procedure.

MATERIALS AND METHODS

This is a prospective observational study, in women attending gynaecology OPD and has been worked up for hysterectomy at Government Medical College, Jalgaon, from June 2018 to April 2019. Total 40 patients were included in the study as per inclusion and exclusion criteria.

Inclusion criteria

- A patient in whom vaginal hysterectomy is not feasible because of previous surgery, large volume of uterus, adhesions, endometriosis, adnexal masses, etc.

RESULT

We have studied 40 patients of total laparoscopic hysterectomy in Government Medical College, Jalgaon, performed by one surgeon. In our study average age of patient was 46.14. (Minimum age of 39 years and maximum was 62 years). Out of 40 patients 29 of them were between 41 to 50 years of age group

Table 1: Age wise distribution of patients

Age in years (In Range)	No. of patients	Percentage
36-40	1	2.5
41-45	17	42.5
46-50	12	30
51-55	7	17.5
56-60	2	5
61-65	1	2.5

In our study 24 patients had normal (18.5 to 24.5) BMI and 14 patients had BMI in overweight (25 to 29.9) group. Only 2 patients had BMI in obese (30 to 40) category. Mean BMI was 24.9 with standard deviation of 2.66.

Table 2: Distribution of patients as per BMI

BMI	No. of patients	Percentage
NORMAL	19	47.5
OVERWEIGHT	19	47.5
OBESE	2	5
MORBID OBESITY	0	0

Indications of total laparoscopic hysterectomy were - 40% cases were operated for fibroid uterus, 20 % for abnormal uterine bleeding, 12.5 % cases for ovarian pathology, 10 % cases for adenomyosis, 5 % cases for CIN, 7.5 % cases for endometrial hyperplasia, 2.5 % cases for post menopausal bleeding and endometrial carcinoma each. Most common indication is fibroid uterus.

Exclusion criteria

- Severe cardio-respiratory disease
- Gynaecological malignancy
- Conditions like Pelvic infection, Peritonitis, Bowel obstruction, Diaphragmatic hernia
- Anaesthetic concerns during preoperative anaesthetics check-up, unfit for surgery

A complete clinical history and examination was carried out. Pap smear and ultrasound examination done for each patient. Hysteroscopy directed endometrial biopsy done in cases of abnormal uterine bleeding. Patients who were qualified and were willing for Total laparoscopic hysterectomy were evaluated for anaesthetic fitness. All basic routine investigations have been done. With written informed consent, pre-op preparation, patients were posted electively for total laparoscopic hysterectomy procedure, under general anaesthesia. All the surgeries were performed by a single surgeon. All findings and details were recorded. Standard post-op care was taken. Follow up were advised as first on day 8 for suture removal, histopathology report review and second on 6th week for per abdominal examination-inspection of port site per speculum examination-inspection of vaginal vault. Data analysed statistically with Pearson's chi-square test and other tests.

Table 3: Distribution of patients as per indications for total laparoscopic hysterectomy

Indication of Surgery	No. of patients	Percentage
FIBROID UTERUS	16	40
AUB	8	20
OVARIAN PATHOLOGY	5	12.5
ADENOMYOSIS	4	10
CIN	2	5
ENDOMETRIAL HYPERPLASIA	3	7.5
ENDOMETRIAL CARCINOMA	1	2.5
POST MENOPAUSAL BLEEDING	1	2.5

Mean operative time of total laparoscopic hysterectomy in this study is 136.56 minutes with standard deviation 25.23 with minimum operative time 100 minutes. 34 patients is having mean operative time between to 100 to 150 minutes and 6 patient having operative time between 150 to 203 minutes. Mean volume of uterus removed was found to be 371.64 CC. Maximum volume of uterus was 1092 CC. as we didn't have uterine morcellator. We removed large size uterus by debulking with scissors which increased operative time. So as volume of uterus increased, intraoperative time also increased.

Table 4: Distribution of patients as per the weight of the Uterus removed

Weight Of Uterus Removed (in gram)	No Of Patients	Percentage
50 To 150	8	20
150 To 300	10	25
300 To 450	10	25
450 To 600	4	10
600 To 750	3	7.5
750 To 900	2	5
900 To 1050	1	2.5
1050 To 2000	2	5

In the present study Mean preoperative haemoglobin was 10.984 gm% with standard deviation 1.3496 with 95% confidence interval 10.5- 11.3. Mean postoperative haemoglobin was 9.962 gm% with standard deviation of 1.451 and standard error 0.205. Difference in preoperative and post operative haemoglobin was 1.018 gm% with standard deviation 0.9393.

Table 5: Mean, SE and SDV of pre and post operative Haemoglobin level

Variable	Observation	Mean	SEM	SD	95%CI
Preop Hb	40	10.98	0.19087	1.3496	10.5964 11.3635
Postop Hb	40	9.962	0.205314	1.4517	9.54940 10.3746

Three patients required postoperative packed cell transfusion. In the present study difference in pre operative and post operative haemoglobin is 1.1 As the above study states that 1.5 +/- 0.1 gm /dl is due to IV fluid hence this difference is not suggestive of significant blood loss. In our study average duration of stay was 69.8 hours with standard deviation of 36.42 hours. In the present study mean pain score on day 0 is 1.98. Mean pain score on day 1 is 4.24. Mean pain score on day8 is 0.48 (day 0 is the day of surgery).

Table 6: Mean Pain score in Total Laparoscopic Hysterectomy

Time period	Mean pain score (n=40)
Day 0	1.98
Day 1	4.24
Day 8	0.48

Table 7: Distribution of patients as per complications of TLH

Complication	Number of patients	Percentage
Laprotomy	4	10
Bladder injury	1	2.5
Bowel injury	1	2.5
Urinary Retention	1	2.5

In present study 4 patients needed conversion to laparotomy (10 %), due to 1 bowel injury, 1 bladder injury, 2 difficult surgery (large uterus was associated with dense adhesion).In a study conducted by Charles M¹⁴ the rate of conversion to laparotomy was 5.4% (n = 12). In one-third of the patients (n = 4) the decision for laparotomy was taken after a simple diagnostic laparoscopy before TLH began. One patient needed critical care unit support for anaesthetic complication and that patient was k/c/o hypertension .Two patients had post operative urinary tract infection and treated with antibiotics of which one developed urinary retention on day2 post operative, Foleys catheter kept for 4 days. These complications were comparable to other studies

DISCUSSION

In our study average age of patient was 46.14. (Minimum age of 39 years and maximum was 62 years). Out of 40 patients 29 of them were between 41 to 50 years of age group. In a study conducted by Elena Igwe⁶ average age was 47.4 +/- 11.1 years for total laparoscopic hysterectomy which is same as our study. In our study 24 patients had normal (18.5 to 24.5) BMI and 14 patients had BMI in overweight (25 to 29.9) group. Only 2 patients had BMI in obese (30 to 40) category. Mean BMI was 24.9 with standard deviation of 2.66. In a study conducted by Katherine A. et al⁷ in 2014, mean BMI of patient was 27.6. Indications of total laparoscopic hysterectomy were - 40% cases were operated for fibroid uterus, 20 % for abnormal uterine bleeding, 12.5 % cases for ovarian pathology, 10 % cases for adenomyosis, 5 % cases for CIN, 7.5 % cases for endometrial hyperplasia, 2.5 % cases for post menopausal bleeding and endometrial carcinoma each. Most common indication is fibroid uterus. Malinowski An et al⁸ studied 155 cases, 55% operated for fibroid, 12.66% operated for ovarian pathology, 12.02% pelvic pain. In another study conducted by Deeksha Pandey et al⁹ most common indication for hysterectomy including was the symptomatic fibroid uterus 39.9%. This study is comparable regarding indications hysterectomies. Mean operative time of total laparoscopic hysterectomy in this study is 136.56 minutes with standard deviation 25.23 with minimum operative time 100 minutes. 34 patients is having mean operative time between to 100 to 150 minutes and 6 patient having operative time between 150 to 203 minutes. Study conducted by Katherine A et al.⁷ mean duration was 130 minutes. Study conducted by Puntambekar et al¹⁰ average time required for surgery was 88.75 ± 52.72 minutes. Mean operative time in present study is slightly more than study conducted by skilled laparoscopic surgeons. In the present study Mean preoperative haemoglobin was 10.984 gm% with standard deviation 1.3496 with 95% confidence interval 10.5-11.3. Mean postoperative haemoglobin was 9.962 gm% with standard deviation of 1.451 and standard error 0.205. Difference in preoperative and post operative haemoglobin was 1.018 gm% with standard deviation 0.9393. Three patients required postoperative packed cell transfusion. In study by Dina J. Chamsy et al¹¹ of the 629 patients, only 3 (0.48%) required a postoperative blood transfusion and all were symptomatic. In the present study difference in pre operative and post operative haemoglobin is 1.1 As the above study states that 1.5 +/- 0.1 gm /dl is due to IV fluid hence this difference is not suggestive of significant blood loss. Also in Malinowski A⁸ Mean HB drop was 1.29 g/dl (0, 1-3 g/dl) that is comparable to present study .In our study average

duration of stay was 69.8 hours with standard deviation of 36.42 hours. In a study conducted by Fidias M et al¹² in 2013 it was observed that average duration of stay after laparoscopic procedure was 72 hours. In the present study mean pain score on day 0 is 1.98. Mean pain score on day 1 is 4.24. Mean pain score on day 8 is 0.48 (day 0 is the day of surgery), it is comparable to study conducted Joseph Gauta¹³ 2009-2010.

CONCLUSION

So with above findings in our study we conclude that laparoscopic hysterectomy is an effective tool while considering intraoperative complications and postoperative course follow up event and duration of stay in hospital and patients satisfaction. Continued evaluation of laparoscopic procedure should be done to improve laparoscopic techniques. Medical and paramedical staff in operation theatre should be trained, as the learning curve improves, we can use laparoscopic technique for more and more difficult gynaecological diseases. This will help in reducing post-operative morbidity and hospital stay; early resumption of routine activities and patient's satisfaction.

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