


Total Laparoscopic Hysterectomies at Tertiary Care Center: A Retrospective Analysis

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ABSTRACT

Background: After cesarean section, hysterectomy is the second most common procedure performed in the OBGY department. In this study, we analyzed the safety and complications of total laparoscopic hysterectomy (TLH) at our tertiary care center. Total laparoscopic hysterectomy is the preferred procedure over the laparotomy because of higher feasibility and lower postoperative complications.

Materials and methods: This is a retrospective cohort study conducted on 200 patients who underwent TLH due to various benign gynecological conditions from January 1, 2017 to July 31, 2022. The statistical analysis was done using EPIINFO software.

Results: The mean age of the women undergoing TLH at our center was 42 years. About 52% of the women were having parity 2, 43% were having a uterine size between 6 and 12 weeks. The most common symptom and indication for TLH were heavy menstrual bleeding (75.5%) and AUB L (leiomyoma) is about 49%, respectively. The average blood loss in the study was 150 mL. The mean duration of surgery was 50 minutes. The mean duration of hospital stay was 3 days. And 4% of the patients had intraoperative complications, 9% had postoperative complications which were identified and managed successfully.

Conclusion: Laparoscopic gynecological surgeries are safe procedures in terms of feasibility in obese patients, minimal blood loss, and postoperative complications in patients with benign uterine etiology. Greater technical challenges and advanced equipment with long learning curve make it difficult for all surgeons to practice it.

Keywords: Hysterectomy, Laparoscopy, Minimally invasive surgery, Retrospective.

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INTRODUCTION

Hysterectomy is mainly an age-old surgery practiced from ages undergoing multiple modification in the technique, routes, etc. Hysterectomy can be done through these routes abdominal, vaginal, or laparoscopic. After cesarean section, hysterectomy is the second most common procedure performed in the OBGY department.¹ Recently, increasing number of surgeries done by minimally invasive approaches, that is., total laparoscopic hysterectomy (TLH) and laparoscopic-assisted vaginal hysterectomy (LAVH). Total laparoscopic hysterectomy is the preferred approach over other modalities due to fewer complications and faster patient recovery.^{1,2} Most of the laparotomies for hysterectomies can be avoided by using the laparoscopic approach in cases of adhesions and extensive endometriosis. Most surgeons do not prefer the vaginal approach because of the inaccessibility to adnexal masses and difficulty in patients with narrow introitus and uterine sizes of more than 12 weeks.³ Laparoscopic approach has its own advantages and pitfall.^{2,4-7}

The advantages are smaller wound, shorter hospital stays, speedy recovery, decreased surgical site infection. The disadvantages are a long learning curve, high cost, and longer operative time.^{2,4-7} The aim of the study is to analyze the pros and cons of laparoscopic approach for benign uterine pathology at rural setup.

MATERIALS AND METHODS

This is a retrospective cohort study reviewed for 200 patients who underwent TLH at our institute from January 1, 2017 to July 31, 2022.

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Conflict of interest: None

Inclusion criteria: All cases of benign gynecological condition, uterine size less than 18 weeks, patients fit to undergo laparoscopic surgeries.

Exclusion criteria: Suspected or confirmed malignant gynecological cases, uterine size more than 18 weeks, patients unfit to undergo laparoscopic surgeries.

Patient's demographic details, complete patient's profile were accessed after ethical committee and institution's head approval.

The type of anesthesia decided is based on the patient profile. The team consists of anesthetist, two main surgeons, one assistant for holding camera, and one assistant for uterine manipulation, staff nurse, and OT staff for assistance. Patient was placed in modified Lloyd-Davis position. Primary 10 mm port insertion was done by direct trocar entry; port was always inserted in supraumbilical site 1 inch above the umbilicus. After the creation of pneumoperitoneum, three 5 mm accessories port were introduced. (Two lateral trocar

were inserted 2 inches above and medial to anterior superior iliac spine and one central trocar at midpoint of a line between pubic symphysis and umbilicus, Trocar was inserted one inch lateral toward left side) After inserting the 10 mm, 30° laparoscope, the uterus and adnexal pathologies were identified. Energy source for the surgery consisted of Harmonic scalpel (J & J Ethicon ultrasonic device) and bipolar cautery/shearer/vessel sealer (Alan Indian make). Electro surgical unit (ESU) used was from Alan with bipolar, monopolar, and vessel sealing function. Vaginal manipulation was done by a patented specialized Sukhadia manipulator. The main advantage of this manipulator was that it allows anteversion, retroversion, and side to side movements of uterus and allowed ease of access to bilateral uterine arteries; also the vaginal tube made the vault cutting safe and secure by pushing the bladder downward and ureters laterally. During difficult dissection for bladder and rectum, the dictum followed was fat in the dissecting plane always belongs to rectum and bladder.

SURGICAL STEPS

Right round ligament, ovarian ligament and fallopian tube were coagulated and cut if ovaries are to be conserved. Infundibulopelvic ligament were coagulated and cut in cases of associated ovarian pathologies. Similar procedure repeated on the left side. Separation of the bladder was done with the help of harmonic scalpel and utero-vesical fold and bladder were pushed down. Posterior peritoneum was dissected down and ureters were identified. In cases with advanced bladder or bladder adhesion [in cases of previous 1 or more lower segment caesarean section (LSCS)] sharp dissection was done and bladder dissection is done through the lateral window technique. The vaginal manipulation helped and facilitated the bladder dissection by traction and counter traction technique. In difficult cases where cervix is pulled up due to previous multiple caesarean surgeries/cervical fibroid/pelvic surgeries/advanced endometriosis, myoma screw was used for uterine manipulation. Bilateral uterine arteries were identified at the level of isthmus, coagulated, and cut. Hemostasis was confirmed. Bilateral uterosacral ligament was coagulated and cut using harmonics. Vault was cut by giving circumferential incision over the vaginal manipulator. Specimen was delivered out by vaginal route. Wherever necessary, the manual morcellation was carried out vaginally. Vaginal vault was sutured by vicryl round body no 1 by continuous interlocking intracorporeal suturing technique. Bladder, bowel, and hemostasis were checked. All accessories port were removed under vision. Carbon dioxide (CO₂) desufflation was done. Main port was removed. Port sites were sutured with ethilon 2-0/stainless steel clip. Sterile dressing was done. Patient’s postoperative course was monitored. Patient catheter was removed on day 2, oral started after 8 hours. Patient discharged on day 3 and follow-up on day 7 and day 21.

RESULTS

The demographic characteristics of the patients who underwent TLH at our study center include (1) the mean age of the patient in the study was 42 years; (2) parity in the majority (56%) was 2, while 59% of the patients had a history of previous 1 surgery. (Tables 1 and 2)

About 70% of the cases were operated under regional spinal anesthesia, while 30% of the patients underwent surgery under general anesthesia. Majority of the patients had fibroids as an indication for the surgery (49%), (Fig. 1) operative time declined throughout the study progressively with a mean operative time

Table 1: General characteristics of patients

Characteristics	Numbers (%)
Age-group	
30–40	10 (5%)
41–50	182 (91%)
51–60	08 (4%)
Parity	
1	13 (6.5%)
2	112 (56%)
More than 2	75 (37.5%)
History of previous surgeries	
0	53 (26.5%)
1	118 (59%)
2	21 (10.5%)
More than 2	8 (4%)

Table 2: Clinical characteristics of patients

Characteristics	Numbers (%)
Presenting symptoms	
Heavy menstrual bleeding	151 (75.5%)*
Pain in the abdomen	131 (65.5%)*
White discharge per vaginum	43 (21.5%)
Lump in the abdomen	10 (5%)
Inter-menstrual bleeding	12 (6%)
Uterine size	
Normal	09 (4.5%)
Bulky	81 (40.5%)
6–12 weeks	88 (44%)
12–16 weeks	22 (11%)

*Since the patients had multiple complaints, thus the aggregate is more than 100%

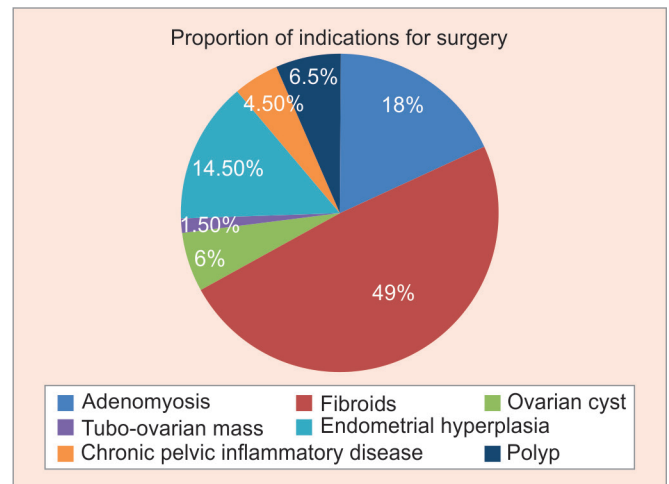


Fig. 1: Indications for surgery

of 50 minutes. The mean duration of the hospital stay was 3 days. About 10 cases required blood transfusion, while 5.5% had blood loss more than the mean blood loss in the study, that is, more than 150 mL (Table 3).

DISCUSSION

The proportion of laparoscopic hysterectomies has been increasing compared with hysterectomies performed through laparotomy. Despite the fact that hysterectomy is the most frequently performed major gynecological surgery, there are still controversies regarding the optimal route for hysterectomies.⁷⁻⁹ According to the study done by Garry et al., a surgeon needed to perform 25 cases to complete the learning curve and gain adequate experience.¹⁰ The mean age of women undergoing TLH in the present study was 42 years (Table 1) which was comparable with the findings of the study done by Mani et al.,¹¹ Shin et al.,¹² Bastidas-Guarin et al.,¹³ and Dojki and Bano colleagues.¹⁴

About 59% of the patients had a history of prior abdominal surgery in the present study which was higher as compared with the findings of the study by Dojki and Bano colleagues.¹⁴ Only 33% of patients had prior abdominopelvic surgery.

Patients had multiple symptoms on admission and were presented with the most common symptom as heavy menstrual bleeding (75.5%), followed by pain in the abdomen (65.5%). These findings were similar to the findings in the study by Bastidas-Guarin et al.,¹³ Dojki and Bano colleagues,¹⁴ and Suisted and Chittenden.¹⁵

In the present study, majority of the patients (70%) underwent TLH under regional spinal anesthesia, while only 30% required general anesthesia. These findings were comparable with the study findings Chilkund JN and colleague.¹⁶

The average surgical time in the present study was 50 minutes. The operative time in the study done was Bettaiah et al.¹⁷ ranged from a minimum of 20 minutes to a maximum of 2 hours. About 10 patients required blood transfusion in the present study.

The most common indication for hysterectomy in the present study is fibroids which contribute to 49%. These findings were similar to the study findings of Rentiya FM and colleagues¹⁸ and Shin et al.¹² The mean blood loss in our study was 150 mL. The mean blood loss in the study done by Mani K and coworkers,¹¹ Suisted and Chittenden¹⁵ were 163 mL and 153 ± 116.1 mL, respectively.

Complications noted in the present study (Fig. 2) were bladder injury (0.5%) over the dome of the bladder, one case of thermal ureteric injury (0.5%) followed by ureterovaginal fistula on day 10. In the case of bladder injury over dome – the central portion diagnosed intraoperatively during the dissection of uterovesical fold in the case of previous 2 LSCS with fibroids was managed by suturing the bladder in two layers with vicryl 3-0 and omental interposition followed by keeping the Foley for 14 days. While in another case of thermal ureteric injury followed by ureterovaginal fistula on postoperative day, 10 patients complained of leaking per vaginum and they immediately underwent contrast CT. On examination using contrast enhanced computed tomography (CECT), the ureterovaginal fistula was confirmed. Bladder integrity was maintained. It was found that the patient had double ureters on the side of the injury with upper and lower moiety drained separately by two ureters. The opinion of the urologist was taken followed by DJ stenting. Urine leakage from the vagina stopped after 3 weeks and DJ stenting was removed after 6 weeks. Thus, all intraoperative and postoperative complications were recognized and managed successfully as per standard protocols. These findings were similar to single-center study done by Puntambekar et al.¹⁹ The number of cases converted was 3 (1.5%), which was comparable to the study conducted by Bettaiah et al.¹⁷ (0.9%) Out of the 3 cases, 2 cases were having large cervical fibroids while in the other case, it was severe endometriosis making it difficult to proceed for TLH (Fig. 2).

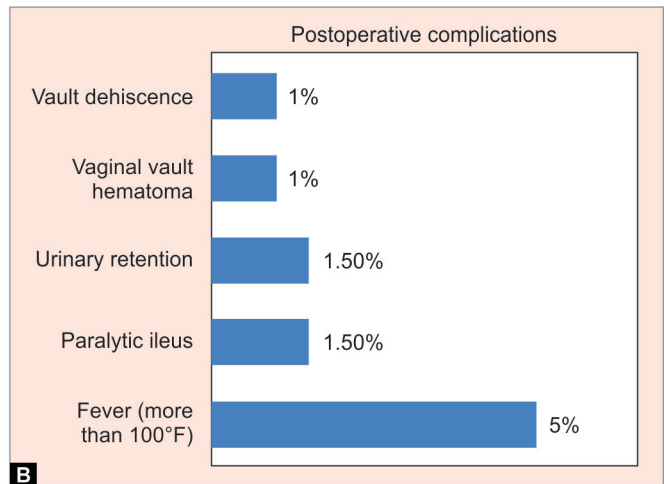
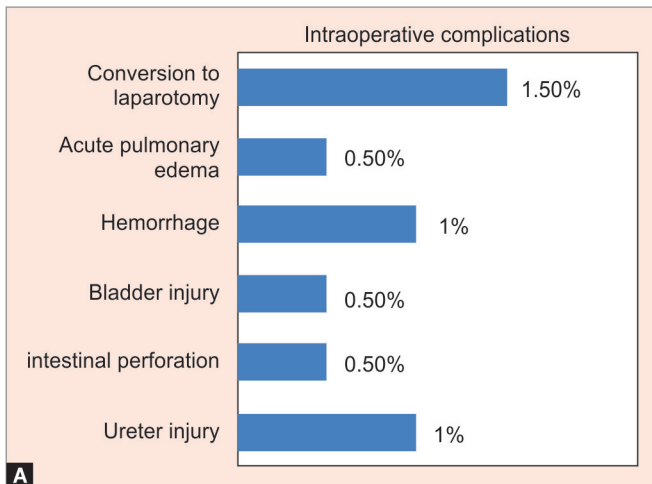
None of the cases needed re-exploration in the present study.

Table 3: Intra- and postoperative events

Characteristics	Numbers (%)
Intraoperative blood loss (in mL)	
Less than 100 mL	73 (36.5%)
100–150 mL	116 (58%)
150–200 mL	11 (5.5%)
Duration of surgery (hours)	
Less than 1 hour	69 (34.5%)
1–1.5 hours	118 (59%)
1.5–2 hours	13 (6.5%)
Duration of hospital stay (days)	
3	190 (95%)
4–5	10 (5%)

CONCLUSION

Total laparoscopic hysterectomy is an effective and safe procedure with minimal blood loss, minimal pain with shorter duration



Figs 2A and B: Complications among the study population – intraoperative and postoperative

of hospital stay when performed by an expert surgeon. With improvement in surgical skills, TLH is being considered the day care surgery. Standard operating procedure (SOP) and high case volume are milestones for safe surgery.

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