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Original Article

Total Laparoscopic Hysterectomy Experience: Retrospective Results of a Tertiary Center

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ABSTRACT

Objective: In the present study, it was aimed to retrospectively evaluate the intraoperative and postoperative outcomes of all laparoscopic hysterectomy procedures carried out at the obstetrics and gynecology department between January 2018 and September 2020.

Methods: The files and operation case notes of 445 patients who underwent total laparoscopic hysterectomy for benign indications between January 2018 and September 2020 were retrieved from the hospital information management system and their intraoperative and postoperative outcomes were analysed.

Results: The mean age of 445 patients included in the present study was 51.2±8.5 and parity 2.98±1.85, and the most common indication for hysterectomy was myoma uteri. The mean operation time was determined as 100.7±36.7 min. The overall major complication rate was 3.2% and the rate of conversion to laparotomy was found to be 1.5%.

Conclusion: In patients who are not suitable for vaginal hysterectomy, total laparoscopic hysterectomy may be a reasonable option in terms of increasing the patient comfort, lower complication rates, and increasing the the experience of the surgical team.

INTRODUCTION

The innovations of medical technology, which are renewed almost everyday, are used effectively in operating theaters, and these developments increase patient and physician comfort compared to conventional methods. Laparoscopic hysterectomy offers some advantages such as shorter hospital stay, a lower intraoperative blood loss, lower postoperative pain, faster recovery, and lower infection rates. However, especially due to the lack of technical equipment, auxiliary personnel, and physician experience, and the more frequent occurrence of organ injuries such as ureter and bladder adjacent to the pelvic genital organs, abdominal hysterectomy continues to be the most commonly used type of hysterectomy.[1–5] The aim of the present study is to report the intraoperative and postoperative results total laparoscopic hysterectomies performed for benign indications at the gynecology and obstetrics clinic between January 2018–September 2020.

MATERIALS AND METHODS

In the present study, 445 patients who underwent laparoscopic hysterectomy for benign indications between January 2018–September 2020 were evaluated retrospectively after approval was obtained from the hospital ethics committee. Patients who were operated on for malignant and urogynecological indicatisons and were not followed up postoperatively in our hospital and whose

pathological results were reported to be malignant were not included in the study. In all patients, hospital admission files, anesthesia records, and operation case notes were evaluated. Age, weight, height, parity, menopausal status, caesarian or the other abdominal surgery history, and hysterectomy indications were recorded. Duration of operation, major complication rate, the postoperative fall rate in hemoglobin, and duration of admission were considered as primary outcomes. For estimated intraoperative blood loss, hemoglobin values 12 hours before and 24 hours after the operation were recorded, taking into account the postoperative decrease in hemoglobin values. Duration of operation was defined as the time from the first skin incision to the complete closure of the incision. Time from the date of operation to the date of discharge date was considered as the duration of hospitalization. In our clinic, patients scheduled for the total laparoscopic hysterectomy are admmited one day before the operation following routine anesthesia preparation, mechanical intestine evacuation is performed with oral laxative and rectal enema, and intravenous cefazolin 1 gr is administered one hour before the operation and the dose is repeated at the 12nd hour postoperatively. For thromboembolic prophlaxis, enoxaparin 0.4 ml is administered subcutaneously 8 hours before the operation and repeated every 24 hours during the hospitalization. All laparoscopic operations are performed under general anesthesia in our hospital. After the Foley catheter is placed in the bladder in the lithotomy position, the manipulator chosen by the surgeon is placed. In the lithotomy position, the abdomen is entered from the middle of the umbilicus with a closed technique with an angle of 90 degrees, and after the pneumoperitoneum is created for the camera, a 10mm port is placed from the umbilicus and the entire abdomen is explored with a telescope. After inserting two 5 mm trochars around 2–3 cm medial from both spina ischiadica anterior superior and 6 cm left of the umbilical port, a 5 mm operative trochar is inserted and the operation is initiated. For coagulation and cutting procedures, depending on the choice of the surgeon, bipolar scissor ultrasonic energy source and other bipolar vessel sealing devices are used. After the uterus is completely removed from the vagina, the vagina is closed laparoscopically or vaginally separately or continuously according to the surgeon's preference, and the operation is terminated after blood control. While some surgeons prefer to place drain catheter into the vagina, others do not. Our results are presented as descriptive statistics.

RESULTS

In 445 patients included in the present study, the mean age was 51.2±8.5 and parity was 2.98±1.85 and the most common hysterectomy indication was myoma uteri (Table 1). Other demographic data of the patients, accompanying systemic disease and open abdominal surgery history are all summarized in Table 2. The mean operation time was calculated as 100.7±36.7 minutes and 78% of them underwent bilateral salpingo-oophorectomy. Postoperative blood transfusion was required in 6 patients. The vajinal cuff was sutured laparoscopically in 78.6% with 1/0 polyglactin separately and in 21.3% vaginally sutured with 1/0 polyglactin, subsequently. The conversion from laparoscopy to laparotomy was performed in 7 patients (Table 3). Postoperatively, fourteen (3.4%) patients were diagnosed with vaginal cuff hematoma and were followed up without any additional invasive intervention. The duration of hospital stay was measured in days.

Table 1. Hysterectomy indications

	n	%
Abnormal uterine bleeding	228	51
Myoma uteri	40	9
Pelvic mass	57	13
Pelvic pain	69	15.5
Endometrial hyperplasia	27	6.2
Cervical intraepithelial lesion	24	5.3

Table 2. Demographic characteristics of patients

	n	%	Mean±SD (min-max)
Age±SD			51.2±8.5 (34–82)
Parity±SD			2.98± 1.85 (0–16)
Menopause	117	26.2	
Hypertension	135	30.7	
History of caeserian	127	2.5	
Lower abdominal surgery history	142	31.9	

SD: Standard deviation.

DISCUSSION

The aim of the present study is to present the results of 445 patients underwent total laparoscopic hysterectomy at the gynecology and obstetrics clinic between January 2018–September 2020. Hysterectomy still remains the primary treatment option for many uterine pathologies. In the evaluation of hysterectomy indications, the first two leading indications are abnormal uterine bleeding and myoma uteri, interchangeably.[6,7] Similarly, in the present study, the leading indications of hysterectomy were found to be myoma uteri and abnormal uterine bleeding.

It was stated in the committee statement of ACOG published in 2009 that less invasive methods should be preferred as much as possible according to the technique to be used for hysterectomy, hysterectomy indication, whether there is any other accompanying pathology, surgeon experience, and patient selection and that laparoscopic hysterectomy should be the standard approach in patients for whom vaginal hysterectomy is not suitable.[8]

Table 3. Operative and postoperative data

	n	%	Mean±SD (min-max)
Durataion of operation (min.)			100.7±36.7 (40–280)
Drain	78	17.5	
Switch to Laparotomy	7	1.5	
Bilateral Salphingoopherectomy	350	78.6	
Vaginal cuff suturation			
Laparoskopic	350	78.6	
Vaginal	95	21.3	
Duration of urinary catheterization (ho)		17.3	
Duration of hospitaization (day)			2.37±1.15 (1–14)
Preoperative hemoglobin (g/dl)			12.4±1.4 (8.2–16.1)
Postoperative hemoglobin (g/dl)			11.5±1.4 (7.1–14.9)
Total complications	31	6.9	
Lower urinary system injury			
Bladder injury	8	1.6	
Ureter injury	2	0.4	
Intestinal injury			
Small intestine	–	–	
Colon	1	0.2	
Vaginal cuff hematoma	14	3.1	
Bleeding requiring blood transfusion	6	1.3	
Bleeding not requiring blood transfusion	8	1.7	
Vesicovaginal fistula	5	1.1	
Midileus	3	0.6	
Major complications (Bladder injury, ureter injury, vesicovaginal fistula)	15	3.2	

SD: Standard deviation.

In studies comparing abdominal hysterectomy with laparoscopic hysterectomy, it was reported that postoperative pain, blood loss, duration of hospitalization, and recovery time were lower with the latter technique.[9,10] Less preference for laparoscopic hysterectomy administration over the abdominal hysterectomy may be due to insufficient training of personnel, longer duration of operation, and last but not least, higher rates of major complications as reported in previous studies.[5,11] In the evaluation of our two-year laparoscopic hysterectomy cases, lower urinary tract injuries were found at a rate of 22%, while it has been reported between 0.3% and 6% in the literature.[12–14] Consistent with the literature, the most commonly injured organ in the lower urinary tract was the bladder, and all of these injuries were detected perioperatively and repaired laparoscopically. All patients with bladder injuries had a history of previous cesarean operation and these injuries occurred during the vesicouterine cavity dissection or suprapubic trochar insertion. It is known that the risk of complications may increase in patients with a cesarean section history, especially in patients with two or more cesarean histories.[15,16] In this patient group, care should be taken in vesicouterine dissection and cystoscopy should be considered for them.

In the present study, the ureteral injury was detected at a rate of 0.2%. One of these patients had deep pelvic endometriosis, and this patient had a whole-layer ureteric cut that occurred during sharp dissection, the other patient had ureteral injury occurred during monopolar energy use during colpotomy. In both cases, the ureteral injury was noticed perioperatively and laparoscopic ureteroneocystostomy was performed. Unlike bladder injuries, ureteral injuries are usually noticed postoperatively and increase mortality.[17] It has been reported that surgeons with less than 30 laparoscopic hysterectomy case experiences encounter bladder injury twice and ureteral injury four times more often than those with more than 30 cases.[18] Supporting the experienced surgeons until the learning curve is completed may reduce the complication rates.[6] In the study of Karaman et al.,[19] among 1120 laparoscopic-assisted vaginal hysterectomy and laparoscopic hysterectomy cases, major complications developed at a rate of 1% and no urinary system complication was observed. Similarly, in the study of Donnez et al.,[7] in which they compared laparoscopic hysterectomy with abdominal and vaginal approaches with 3190 cases, it was concluded that the laparoscopic approach is not associated with major complications in experienced hands. In the present study, the rate of major complications in the laparoscopic hysterectomy group was 3.2%, which is in line with with many studies in the literatüre, although it is quite higher than that reported by Donnez et al. and Karaman et al..[4,14,20–22]

The rate of switching to laparotomy varies between 0% and 19% in the literature.[23] In the present study, the rate of conversion to laparotomy was comparable to the literature (7%). Its most common causes include anesthesia problems due to respiratory tract events in obese patients, uncontrollable bleeding, and failure to maintain pneumoperitoneum during colpotomy. Gastrointestinal system (GIS) injuries are reported less frequently than urinary system injuries in the literature. However, they may occur especially in cases with endometrisiosis, or during dissection of adhesions from previous operations and usually while entering the abdomen. In addition, they may also occur during electrocoagulation, albeit more seldom.[24,25] GIS injuries are injuries that require special attention by surgeons, as they may lead to death due to delayed diagnosis.[26] In the present study, a colonic serosal injury occurred in one patient during adhesiolysis and the defect was repaired with a primary suture, and no postoperative complications developed.

The operation time is longer in laparoscopic hysterectomy than in abdominal hysterectomy.[6,27] In the present study, the mean operation time was found to be 100.7±36.7 min-

utes, which is consistent with the literature. The long operation time associated with the long laparoscopic preparation process and the technical deficiencies of the surgical equipment can be expected to decrease with the greater number of cases and hence the experience of the surgical team.

In conclusion, in the present study, we attempted to present our clinical experience from our retrospective patients series. In the light of these experiences, it can be suggested that total laparoscopic hysterectomy is a minimally invasive procedure that can be successfully carried out in experienced hands with lower morbidity and mortality rates, better cosmetic results, and shorter recovery time compared to total laparotomy. The surgical practical experience gained together with the theoretical knowledge about the laparoscopy technique can help with lower mortality rates and shorter duration of treatment of complex cases.

Ethics Committee Approval

This study approved by the Kartal Dr. Lutfi Kirdar City Hospital Clinical Research Ethics Committee (Date: 08.07.2020, Decision No: 2020/514/181/9).

Informed Consent

Retrospective study.

Peer-review

Internally peer-reviewed.

Authorship Contributions

Concept: E.M., E.C.G.; Design: E.M., G.B.; Supervision: E.M., G.B.; Materials: E.M., B.K.; Data: E.B.Ö., T.G.Y., B.K., D.K.; Analysis: A.K., P.Y.; Literature search: D.K., U.C.; Writing: E.M., T.G.Y., E.B.Ö., U.C.; Critical revision: A.K., E.C.G., P.Y.

Conflict of Interest

None declared.

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Total Laparoskopik Histerektomi Deneyimi: Tersiyer Bir Merkezin Geriye Dönük Sonuçları

Amaç: Bu çalışmada, Ocak 2018–Eylül 2020 tarihleri arasında kadın doğum ve jinekoloji kliniğinde yapılan total laparoskopik histerektomi operasyonlarının intraoperatif ve ameliyat sonrası sonuçlarının geriye gönük bir değerlendirmesinin yapılması amaçlanmıştır.

Gereç ve Yöntem: Ocak 2018–Eylül 2020 tarihleri arasında benign endikasyonlar nedeniyle total laparoskopik histerektomi uygulanan 445 hastanın dosyaları ve operasyon vaka notları hastane bilgi yönetim sisteminden alınarak intraoperatif ve ameliyat sonrası sonuçları analiz edildi.

Bulgular: Çalışmaya dahil edilen 445 hastanın ortalama yaşı 51.2±8.5 ve parite 2.98±1.85 idi ve en sık histerektomi endikasyonu myoma uteri idi. Ortalama operasyon süresi 100.7±36.7 dakika olarak belirlendi. Genel majör komplikasyon oranı %3.2 ve laparatomiye geçiş oranı %1.5 olarak bulundu.

Sonuç: Vajinal histerektomiye uygun olmayan hastalarda total laparoskopik histerektomi, hasta konforunu artırması ve cerrahi ekibin deneyiminin artmasıyla komplikasyon oranlarının daha düşük olması nedeniyle makul bir seçenek olabilir.

Anahtar Sözcükler: Komplikasyon; laparoskopik histerektomi; minimal invaziv cerrahi; myoma uteri.