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ORIGINAL RESEARCH

Total Laparoscopic Hysterectomy Experience Within Time Period

Belirli Bir Süre İçendeki Total Laparaskopik Histerektomi Deneyimi

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ABSTRACT

Objective: *The aim of this study was to evaluate the incidence of total laparoscopic hysterectomy (TLH) in our clinic during the first 6 months and the last 6 months by a single surgeon.*

Material and Methods: *Eighty-one patients who underwent TLH between January 2016 and December 2016 due to benign diseases were evaluated retrospectively using age, parity, BMI, indications, length of hospitalization, blood loss, and duration of operation time. The cases were examined in 2 groups as the first 6 months (Group 1) and the last 6 months (Group 2). Analysis of the data was done using t test.*

Results: *The mean age for Group 1 was 50,676,60 years, parity 2,291,37, and BMI 31,993,84 kg/m2. The mean age for Group 2 was 53,88.49 years, parity 2,691,44, and BMI 31,863,57 kg/m2. Endometrial hyperplasia (n=42, 51.8%) was the most common indication for hysterectomy in 81 cases included in the study. The mean length of hospitalization for Group 1 was 2.410.56 days, blood loss was 1.070.37 g/dl. The mean length of hospitalization for Group 2 was 2.360.56 days and blood loss was 1.050.44 g/dl. There was no significant difference in age, parity, BMI, length of hospitalization, and blood loss between the two groups as Group 1 and Group 2 (p> 0,05). The operation time for Group 1 was calculated as 100,2216,64 minutes and the operation time for Group 2 was calculated as 75,8118,45 minutes. When the operation times of Group 1 and Group 2 total laparoscopic hysterectomies performed by a single surgeon were compared, it was observed that the operations performed in Group 2 were significantly decreased in duration (p <0,05). Just intraoperative complications developed in group 2. Bladder injury was repaired as a primer.*

Conclusion: *Total laparoscopic hysterectomy is a safe and convenient method for gynecological diseases. Total laparoscopic hysterectomy seems safe and effective for many patients after adequate training. After a certain learning curve, the duration of the operation is shortened.*

Keywords: *laparoscopy, laparoscopic hysterectomy, operation time, experience*

ÖZET

Amaç: *TBu çalışmanın amacı, kliniğimizde tek bir cerrah tarafından total laparoskopik histerektomi (TLH) yapılan vakaların ilk 6 ay ve son 6 ay süresince değerlendirmek üzere yapılmıştır.*

Gereçler ve Yöntem: *Benign hastalıklar nedeniyle Ocak 2016 ve Aralık 2016 arasında TLH uygulanan 81 olgu yaş, parite, BMI, endikasyon, hastanede kalış süresi, kan kaybı, operasyon süresi parametreleri kullanılarak retrospektif olarak değerlendirildi. Olgular ilk 6 ay (Grup1) ve son 6 ay (Grup 2) olarak 2 grupta incelenmiştir. Verilerin analizi t test kullanılarak yapılmıştır.*

Bulgular: *Grup 1 için ortalama yaş 50,676,60 yıl, parite 2,291,37, BMI 31,993,84 kg/m2 olarak hesaplandı. Grup 2 için ortalama yaş 53,898,49 yıl, parite 2,691,44, BMI 31,863,57 kg/m2 olarak hesaplandı. Çalışmaya dahil olan 81 olgunun en fazla histerektomi endikasyonu endometrial hiperplazi (n=42, %51,8) olarak geldi. Grup 1 için ortalama hastanede kalış süresi 2,410,56 gün, kan kaybı 1,070,37 g/dl olarak hesaplandı. Grup 2 için ortalama hastanede kalış süresi 2,360,56 gün, kan kaybı 1,050,44 g/dl olarak hesaplandı. Grup 1 ve Grup 2 olarak iki grupta incelenen hastaların yaş, parite, BMI, hastanede kalış süresi, kan kayıpları arasında anlamlı bir fark bulunmamıştır (p>0,05). Grup 1 için operasyon süresi 100,2216,64 dakika, Grup 2 için operasyon süresi 75,8118,45 dakika olarak hesaplandı. Tek bir cerrahın yaptığı, Grup 1 ve Grup 2 total laparoskopik histerektomilerin operasyon süreleri karşılaştırıldığında ise Grup 2'de yapılan ameliyatların süre olarak anlamlı olarak azaldığı görülmüştür (p<0,05). Tek intraoperatif komplikasyon Grup 2'de gelişti. Mesane yaralanması primer olarak onarıldı.*

Sonuç: *Total laparoskopik histerektomi jinekolojik hastalıklar için güvenli ve uygun bir yöntemdir. Total laparoskopik histerektomi yeterli eğitimin ardından hastalar için birçok açıdan güvenli ve etkin olarak görünmektedir. Belirli bir öğrenim eğrisinden sonra operasyon süresi kısalır.*

Anahtar Kelimeler: *laparoskopi, laparoskopik histerektomi, operasyon süresi, deneyim*

INTRODUCTION

Hysterectomy is one of the most frequently performed surgeries within the discipline of gynecologic surgery.International gynecologic societies recommend vaginal hysterectomy as the most acceptable technique; however, over the past 20 years, operative laparoscopic methods have gained in standing and they play an increasingly more important role than the classic approaches of abdominal and vaginal hysterectomy (1). Laparoscopic hysterectomy (LH) is more preferable because it offers a more rapid recovery period, less blood loss, lower risk of incisional infection, and earlier discharge from hospital (2). Beside these factors, laparoscopic hysterectomy cannot be successfully accomplished in a substantial number of patients, in whom conversion to an open surgery is required.

As a result, a number of relative contraindications, such as morbid obesity, large fibroids and a history of abdominal surgery, have been proposed to help determine whether a patient is a suitable candidate for laparoscopic hysterectomy (3,4).

Laparoscopic hysterectomy gained popularity in the recent years and experience is growing. Hasson et al. in 1991, they found the average operation time as 212 minutes (5). Salman et al. in 2015, mean duration of operation was 132 minutes (6).

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Although there is literature about the experience on LH there is still a lack of knowledge about a single surgeon experience evaluating within a time period to assess the learning curve for LH and therefore, we evaluated the patients who underwent LH in our clinic.

MATERIAL AND METHODS

The data of 81 patients who underwent a LH operation at the Eskisehir Osmangazi University School of Medicine, Department of Obstetrics and Gynecology between January 2016 and December 2016 were investigated. The files of the patients were evaluated retrospectively with respect to age, parity, body mass index, indications of hysterectomy, duration of operation, intraoperative and postoperative complications, estimated blood loss, length of hospitalization and intraoperative or postoperative transfusion requirement in patients.

Patients who are operated in the first and second six month period were classfied as Group 1 and Group 2 respectively.

Before the operation, pelvic examinations, cervico-vaginal smears, and endometrial samplings were performed. All patients were administered a prophylactic antibiotic with 1 g of cefazolin. All operations were performed under general anesthesia and in the dorsal lithotomy position. A manipulator which completely fits over the vaginal fornices was applied in the uterine cavity. Pneumoperitoneum was enabled by entering into the abdomen with a Veress needle. Subsequently, the abdomen was entered with a 10-mm trocar and then with a 10-mm 0-degree telescope. Because the surgeon worked on the left of the patient, the first 5-mm ipsilaterally lower trocar was inserted approximately 2 cm medial to the left crista iliaca anterior-posterior and lateral to the inferior epigastric artery. The second 5 mm trocar was placed in the periumbilical area on the same line, and the third 5 mm trocar was inserted in the right lower quadrant. Advanced bipolar electrocoagulation (Ligasure, Covidien Company, MA, USA) was used in the operations. As a uterine manipulator, a VCare uterine manipulator (Conmed, NY, USA) was employed. After monitoring the intra-abdominal area and the passageway of the ureter, the round ligament, uteroovarian, and infundibulopelvic ligament on both sides were cut after being coagulated. After the anterior and posterior leaves of the broad ligament were dissected, the bladder was separated from the cervix by blunt and sharp dissection. Uterine arteries were coagulated and then cut on both sides. After parametrial tissues around the cervix were coagulated with Ligasure and then cut and bleeding areas were coagulated, the entire vaginal wall was circularly separated from the cervix using monopolar L-tipped cautery with the help of a uterine manipulator. The surgical material was removed through the vaginal route. The vaginal cuff was laparoscopically closed with late absorbable suture materials. The duration of the operation was calculated by measuring the time between the first incision on the skin and the last suture on the skin. The difference between preoperative and postoperative hemoglobin (Hb) values was calculated. Body mass index (BMI) was calculated. All operations were performed by the one surgeon (TO), and large vascular injuries, gastrointestinal system injuries, urinary system injuries, and the need for re-operation due to any reason were accepted as major complications. The patients were mobilized in the same day of surgery. Postoperative micturition, bloating and pain complaints were recorded. Patients were discharged on the second day of the operation and invited to the hopital one week after the operation to discuss the pathology results and to evaluate unexpected complications and re-admission to the hospital.

RESULTS

The mean age, parity and BMI of the patients were for Group 1 50,67 (6,60) years, 2,29 (1,37) and 31,99 kg/m2 (3,84). for Group 2 53,89 (8,49) years, 2,69 (1,44) and 31,86 kg/m2 (3,57) respectively. The patients characterics were summarized in Table 1.

Table 1: Patient Characteristics.

Patient characteristics	Group 1	Group 2	p
Patient, n	31	50	
Age, (years)	50,67 ▌ 6,60	53,89 ▌ 8,49	>0,05
Parity, n	2,29 ▌ 1,37	2,69 ▌ 1,44	>0,05
BMI, kg/m2	31,99 ▌ 3,84	31,86 ▌ 3,57	>0,05

The most common indications for LH were endometrial hyperplasia (n= 42) (51.8%) and myoma uteri (n= 28 34.5%). All the indications were shown in Figure 1.

Indications for laparoscopic hysterectomy	Patient, n	*Percentage, %*
Endometrial hyperplasia	42	51,8
Myoma uteri	28	34,5
Pelvic mass	5	6,1
CIN	4	4,9
GTN	2	2,4

Figure 1: Indications of laparoscopic hysterectomy.

The mean length of hospitalization, the difference between preoperative and postoperative Hb level and mean operation time for patients in Group I and II were summarized in Table 2.

Table 2: Post-operative evaluation.

Post-operative evaluation	Group 1	Group 2	
Patient, n	31	50	p
Length of Hospitalization, (day)	2,41 ▌ 0,56	2,36 ▌ 0,56	>0,05
Blood loss, (g/dl)	1,07 ▌ 0,37	1,05 ▌ 0,44	>0,05
Operation time, (min)	100,22 ▌ 16,64	75,81 ▌ 18,45	<0,05

Data are given as mean ± standard deviation.

DISCUSSION

We evaluated the operations performed by the same surgeon and the surgeries were performed in the first 6 months and last 6 months. There was no significant difference in age, gravida, and BMI in the operations We found statistically important difference in operation time when the same surgeon's opeartions were compared during the first and last six month period. However, bladder laceration occured in the second six month period, which is diagnosed and repaired intraoperatively.

Hysterectomy is the second most common gynecologic surgery after cesarean sections performed by gynecologists. It has a wide range of indications, including dysfunctional uterine bleeding, myoma uteri, gynecologic cancers, uterovaginal prolapse, endometriosis, adenomyosis and pelvic inflammatory disease(7). Abnormal uterine bleeding and myoma uteri constitute the largest indication group for TLH (8). In our study, the most frequent indications were found to be endometrial hyperplasia and myoma uteri at the rate of 70%. There are different data in the literature about the complications associated with TLH. In a multicenter study including 3643 patients, which was conducted by Johnson et al. (9), it was reported that vaginal and laparoscopic hysterectomies were more advantageous than abdominal hyster- ectomy, and patients recovered more rapidly, but bladder and ureter injuries were observed more frequently in patients who underwent LH. In the study of Makinen et al. (10) conducted with 2434 patients, the rate of complications was found to be 19% in patients to whom LH was applied. Malik et al. (11) observed 11 urinary complications in their study including 106 patients. In our study, bladder laseration which was diagnosed intraoperatively and repaired primaly in the same operation.

One of the limitation of the study were the low number of patients. Another is the study grup that adding the knowledge of rates of open laparatomy and converting the surgery to an open procedure would give more information about the surgery experience. Besides, it was the best part of the study that the data were comparable because of the operation of a single surgeon. Previously, studies were performed comparing duration of operations, but operations performed by a single surgeon were not compared. Studies should be conducted with groups of patients with more patients and more indications for studies to be performed in the future and data on how many operations and how long the learning curve should be included in this frame should be found.

CONCLUSION

Total laparoscopic hysterectomy is a more preferable hysterectomy technique than abdominal hysterectomy for patients who cannot undergo vaginal hysterectomy. Although the duration of operation is longer than other techniques, it is considered a safe surgical technique that increases patient satisfaction in many aspects when the surgical team reaches an adequate experience level.

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