

Laparoscopic hysterectomy experience and learning curve: in our clinic

Kliniğimizdeki laparoskopik histerektomi deneyimimiz ve öğrenme eğrisi

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SUMMARY


Objective: The aim of this article is to compare the perioperative results of 30 laparoscopic hysterectomies (LH) and 62 LH operations performed on patients in similar age groups and demographic characteristics.


Method: A total of 92 patients who were operated between September 2013 and June 2015 in our clinic were included in the study. Group 1 was formed with the first 30 patients who underwent LH surgery for the first time. Group 2 was formed with 62 patients.

Results: No statistically significant difference was found between the patients in Group 1 and Group 2 in terms of age, number of parity and previous pelvic surgery history ($p = 0.845$; $p = 0.266$, and $p = 0.796$). There was also no statistically significant difference between the patients in Group 1 and Group 2 in terms of operation time (min.), Delta Hb (gr / dl), hospitalization time (day) and complication rate ($p = 0.198$; $p = 0.486$; $p = 0.201$, and $p = 0.454$).

Conclusions: Although laparoscopic hysterectomy is an operation method with low complication rates and high patient satisfaction, it should be kept in mind that increased surgical experience does not always guarantee good perioperative results.

Keywords: Experience, hysterectomy, laparoscopic, pelvic surgery, vaginal hysterectomy

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ÖZET

Amaç: Bu makalenin amacı, 30 laparoskopik histerektominin (LH) ve benzer yaş gruplarındaki hastalarda yapılan 62 LH ameliyatının perioperatif sonuçlarını ve demografik özelliklerini karşılaştırmaktır.

Yöntem: Eylül 2013 - Haziran 2015 tarihleri arasında kliniğimizde opere edilen toplam 92 hasta çalışmaya dâhil edilmiştir. İlk kez LH ameliyatı geçiren ilk 30 hasta ile Grup 1 oluşturulmuştur. Grup 2 ise 62 hasta ile oluşturulmuştur.

Bulgular: Grup 1 ve Grup 2'deki hastalar arasında yaş, parite sayısı ve önceki pelvik cerrahi öyküsü açısından istatistiksel olarak anlamlı fark bulunmamıştır ($p = 0.845$; $p = 0.266$, and $p = 0.796$). Grup 1 ve Grup 2'deki hastalar arasında operasyon süresi (dk.), Delta Hb (gr / dl), hastanede yatış süresi (gün) ve komplikasyon oranı açısından istatistiksel olarak anlamlı fark yoktur ($p = 0.198$; $p = 0.486$; $p = 0.201$, and $p = 0.454$).

Sonuç: Laparoskopik histerektomi, düşük komplikasyon oranları ve yüksek hasta memnuniyeti olan bir operasyon yöntemi olmasına rağmen, artan cerrahi deneyimin her zaman iyi perioperatif sonuçları garanti etmediği unutulmamalıdır.

Anahtar sözcükler: Deneyim, histerektomi, laparoskopik, pelvik ameliyatı, vajinal histerektomi

INTRODUCTION

Today, hysterectomy is one of the most frequently used surgical treatments¹. Hysterectomy is performed primarily by three methods: these methods are abdominal, vaginal, or minimally invasive methods. Laparoscopic hysterectomy (LH) caused less blood loss, reduced wound infection, short hospitalization time, and less labor loss; these are the main factors leading to a rapid increase in its popularity^{2,3}.

It is recommended that minimally invasive methods should be applied in hysterectomies due to benign reasons⁴. Although laparoscopic procedures are often used in patients circumstances of whom are requiring urgent intervention, such as Tubo-ovarian abscess and adnexal torsion^{5,6}, it is obvious that most gynecologists are not satisfied with the percentage of LH operations and want to increase this rate⁷.

Factors such as the patient's age, parity number, and previous history of pelvic surgery should be taken into account in order to ensure a successful and safe LH^{8,9}. However, the most important factor in the low LH ratio compared to abdominal hysterectomy (AH) and vaginal hysterectomy (VH) is the lack of surgical experience⁹.

Studies have shown that education and training for LH reduce the complication rate and emphasizes the importance of the learning curve.

Defining the learning curve for LH is necessary to guide. We aimed to define our learning curve in LH, which is our first clinical experience.

In our study, the perioperative results of the first 30 LH operations and those of the second 62 LH operations, which consisted of patients with similar basic demographic characteristics, were compared.

MATERIAL AND METHODS

A total of 92 patients who were operated between September 2013 and June 2015 in our clinic and Gynecology were included in our study.

All operations were performed by the same surgeon. A signed consent form was obtained from all patients prior to the operation. Bimanual pelvic examination, transvaginal ultrasound (USG), cervicovaginal smear, and endometrial sampling were performed to all patients prior to surgery. Patients with malignancy were not included in the study. Diagnostic cystoscopy (CYS) was performed with LH with or without adnexa. The patients' data were analyzed

retrospectively from the records of the Faculty of Medicine Education and Research Hospital.

In our study, patients were grouped as being those under 55 years of age and those 55 years old or older. Those who had no menstruation for one year were accepted being menopausal patients. The patients who have been considered as the history of pelvic surgery are the patients with previous cesarean section and pelvic, genital organs or pelvic, genital organs adjacent to the gastrointestinal tract / urinary tract surgery

One gram of cefazolin was administered to all patients as prophylactic antibiotics preoperatively. The patients were given aqueous diet for 24 hours before the operation. Oral laxatives were given one day before the operation and rectal enema at 8-hour intervals. The time between the first incision made to the skin and the last suture applied when the skin was closed defined as the duration of the operation in minutes (min). The change between the preoperative hemoglobin (Hb.) Value and the Hb value at the 6th hour postoperatively was called delta Hb (gr / dl). Major vascular injuries, peritoneal or postoperative period, gastrointestinal system and urinary tract trauma, operation return to AH, and the need for reoperation for any reason were accepted as major complications. The hospitalization period was recorded in days. Patients who did not need opioids had normal defecation, spontaneous micturition, and with no mobility were discharged.

Group 1 was the first 30 patients to be performed by the same surgeon after LH operation was started first. Group 2 was formed with 62 patients who were operated on after the first 30 patients. Both groups were compared for LH operation results.

Operation technique

All operations were performed under general anesthesia and in the neutral lithotomy position. The bladder was catheterized. A nasogastric tube was applied to all patients. The maneuver, which is completely seated in the vaginal fornix, is placed in the uterine cavity.

Pneumoperitoneum is provided by Verres needle applied from the umbilicus. A 10 mm telescope was then inserted into the trocar sheath. 5 mm trocar sheaths were placed in both hypochondria. The device was placed on the palmer point, and the device was operated with tissue fusion technology. 5 mm diameter trocar arm placed on

both sub-dials and 5 mm diameter dissector and retaining forceps were placed. The operations were performed by increasing the uterine pelvic floor with the help of manipulator. Tissue dissection was performed on both sides in the round ligament, uterooverian or infundibulopelvic ligament with tissue fusion technology to provide hemostasis.

All surgical procedures were performed closest to the uterus. The anterior and posterior leaves of the peritoneum were opened to reveal uterine artery traces. The tissue fusion technology device coagulated the uterine arteries. The peritoneal folds and bladder were removed and dissected from the uterus and upper vagina. From the level of the vaginal fornices, all the vaginal walls were circularly separated from the cervix by a monopolar L-shaped needle. The surgical material was taken out through the vagina. The vaginal cuff is sutured vaginally or laparoscopically with late fusible sutures. Then, a rigid cystoscope was used for diagnostic cystoscopy. All walls of the bladder were systematically observed. Cystoscopy revealed jet flow from both ureteric openings.

Statistical analysis

Mean, standard deviation, and ratio values were used in descriptive statistics of the data. Independent sample t-test was used to evaluate quantitative data. All data recorded in SPSS

v21.0. $p < 0.05$ were considered statistically significant.

RESULTS

The mean age of patients included in our study was 50.29 +/- 7.62 years. The mean number of parity was 2.9 (min.0- max.9). Seventeen patients (18.4%) had undergone previous pelvic surgery. Of the patients in our study, 30 (32.6%) were in menopause. The most common indication for operation was myoma uteri detected in 39 patients (42.3%). The average operation time was 138.21 +/- 34.56 min. The major perioperative complication was detected only in 4 (4.6%) patients. One patient (1.1%) case was required reoperation, and 3 patients had trauma (3.5%). The mean delta Hb value was 1.46 +/- 1.39 g / dl in all patients with LH. None of the patients developed postoperative febrile morbidity.

No statistically significant difference was found in terms of age, median parity number and past history of pelvic surgery among the patients in Group 1 and Group 2 ($p = 0.845$; $p = 0.266$, and $p = 0.796$).

There was no statistically significant difference in terms of operation time (min.), Delta Hb (gr / dl), duration of hospitalization (day) and complication rate among the patients in Group 1 and Group 2 ($p = 0.198$; $p = 0.486$; $p = 0.201$, and $p = 0.454$) (Table 1).

Table 1: Comparison of age, parity number, pelvic surgery history, operation time, delta hb, hospitalization time and complication rates in both groups

	Group	N	\bar{X}	SD	df	t	p
Age	Group 1	30	50.57	4.57	90	0.441	0.845
	Group 2	62	50.34	5.49			
M. Parite No.	Group 1	30	4.13	2.40	90	0.062	0.266
	Group 2	62	3.44	2.98			
Pelvic Surgery	Group 1	30	1.80	0.41	90	0.610	0.796
	Group 2	62	1.82	0.38			
Operation Time	Group 1	30	131.51	26.35	90	0.118	0.198
	Group 2	62	141.45	37.73			
Delta Hb	Group 1	30	1.82	1.18	90	0.067	0.486
	Group 2	62	1.66	0.99			
Hospitalization Time	Group 1	30	2.90	1.60	90	0.0951	0.201
	Group 2	62	3.34	1.49			
Complication	Group 1	30	1.93	0.25	90	0.136	0.454
	Group 2	62	1.97	0.18			

DISCUSSION

The factors affecting the results of LH due to the benign reasons were investigated in many studies. In our study, our results, such as total major complication rate, operation time, delta Hb value, and hospitalization time were similar to the other studies in the literature. Brummer et al. during operation 1000 ml. The rate of blood loss was 3%, and the rate of urinary tract trauma was found to be 0.3%⁸. O .Hanlan et al. It has been shown that the rate of return to the abdominal or vaginal approach is less than 1% due to any problem in hysterectomies performed by minimally

invasive methods and the mean time of operation for LH is 132 +/- 55 min and 1.4 +/- 0.9 days¹⁰. Chopin et al. while the average operation time is 120 min. and the duration of hospitalization was found to be 3 days¹¹. Malinowski et al. They found the delta Hb value as 1.29 g / dl in LH¹². In our study, the operations performed by the same surgeon within a period of 21 months were evaluated.

Many studies have shown that the complication rates in LH increase with age and the operation results are adversely affected⁸. It is known that the laxity of the vaginal membrane increases with delivery¹³.

In women with low parity, it has been shown to be a more difficult procedure to exclude the operation specimen through vagina¹⁴. It has been previously established that the number of parity and the length of hospitalization after LH is reduced¹⁵.

In our study, there were no statistically significant differences between the first 30 patients and the remaining 62 patients in terms of patient age, parity number, and pelvic surgery. The lack of the effect of previous pelvic surgery on the results of our study may be due to the maturation of the surgeon's learning curve, but Twijnstra et al. reported that pelvic surgery adversely affects LH results⁹. Ayala-Yáñez et al. reported that pelvic surgery increased the risk of major complications in LH¹⁶.

In many studies examining the factors affecting perioperative and postoperative outcomes, the experience of headache was focused on¹². Duration of operation, perioperative complications, and adverse postoperative outcomes are generally predicted to decrease based on the surgeon's growing experience⁹. It has been advocated that the experience of the surgeon is increased with every LH performed, and consequently, there is a significant improvement in operative outcomes after 30 LHs in particular¹³. O. Hanlan et al. The operative time, perpetual blood loss, and duration of hospitalization were significantly reduced with the increase of surgical experience¹⁰. Lower urinary tract trauma has been shown to decrease with increasing experience in LH¹³. In our study, age, parity number, and previous history of pelvic surgery were compared with those of the first 30 LH and the other 62 LH. However, the operation time, delta Hb, and hospitalization time were not changed after the first 30 LH. Our major complication rate was similar between the first 30 patients operated and the other group patients. Twijnstra et al. similar to our study, increased perioperative blood loss with increasing experience, but LH did not guarantee good operation results⁹. The reason for this is that the surgeon chooses the laparoscopic approach in patients who may have more

successful results with AH or VH as the number of operations increases.

Although LH is an opacity method with low complication rates and high patient satisfaction, it should be kept in mind that increased surgical experience is not a factor that positively affects the complication rates and operating results.

Declaration of conflicting interests:

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