ARAŞTIRMA MAKALESİ/ ORIGINAL ARTICLE

Kocaeli Med J 2018; 7; 3:140-145

İkinci Basamak Hastanede Beş Yıllık Total Laparoskopik Histerektomi Deneyimiz

Five-year Total Laparoscopic Hysterectomy Experience in Second-Line Hospital

Mehmet Adıyeke[1], Gökhan Tosun[1], Nuri Peker[2],

1Buca Doğum Ve Çocuk Hastanesi, Kadın Hastalıkları Ve Doğum Kliniği, İzmir, Türkiye

2Uşak Eğitim Ve Araştırma Hastanesi, Kadın Hastalıkları Ve Doğum Kliniği, Uşak, Türkiye

ÖZ

GİRİŞ ve AMAÇ: *İkinci basamak hastanede yapılan total laparoskopik histerektomi operasyonları ile ilgili deneyimlerimizi sunmayı amaçladık*

YÖNTEM ve GEREÇLER: *Ocak 2012- Kasım 2017 tarihleri arasında hastanemizde yapılmış olan 250 total laparoskopik histerektomi vakasının tıbbi kayıtlarını retrospektif olarak incelendi. Hastaların yaşı, paritesi, vücut kitle endeksi (BMI), histerektomi nedenleri, geçirilmiş abdominal cerrahi öyküsü, ameliyat öncesi ve sonrası ortalama hemoglobin (Hb) ve hemotokrit (Htc) değerleri arasındaki fark, operasyon sırasında ve sonrasında kan transfüzyonu ihtiyacı, operasyon süresi, hastanede yatış süresi, komplikasyonlar, laparatomiye geçiş sıklığı ve uterus ağırlığı değerlendirildi.*

BULGULAR: *Hastaların ortalama yaşı 48.01±5,7 yıl olarak saptandı. Ortalama operasyon süresi ve ortalama hastanede yatış süresi sırasıyla 156.5±49,4 dakika ve 3.75±1,04 gün olarak hesaplandı. Laparaskopiden laparatomiye geçiş sadece bir hastada (%0.4) meydana geldi. Ortalama uterus ağırlığı 201.03±107.2 gr olarak saptandı. Üç hastaya (%1.2) intraoperatif kanama nedeniyle eritrosit süspansiyonu verildi. Cerrahi sırasında 1 (%0.4) hastada rektum seroza hasarı, 3 (%1,2) hastada mesane perforasyonu, 1 (%0.4) hastada rektum tam kat hasar meydana geldi. Postoperatif dönemde vajen kaf hematomu ve vezikovajinal fistül sırasıyla 1 (%0.4), 1 (%0.4) hastada gelişmiştir. Dört hastada (%1.6) postoperative ateş ve C-Reaktif Protein (CRP) yüksekliği tespit edildi. Toplam komplikasyon oranı %5.6 olarak saptandı*

TARTIŞMA ve SONUÇ: *Total laparoskopik histerektomi deneyimli ellerde başarılı bir şekilde uygulanabilen morbidite ve mortalitesi laparotomiye kıyasla daha az olan, postoperatif daha kısa derlenme süresine ve daha iyi kozmetik sonuçlara sahip minimal invaziv bir işlemdir.*

Anahtar Kelimeler: *laparoskopik histerektomi, laparoskopik komplikasyonlar, jinekolojik cerrahi*

ABSTRACT

INTRODUCTION: *We aimed to present our experience with total laparoscopic hysterectomy operations in second-line hospital*

METHODS: *250 cases who underwent total laparoscopic hysterectomy in the obstetrics and gynecology clinic between January 2012 and November 2017 were retrospectively evaluated in terms of age, parity, body mass index (BMI), preoperative and postoperative hemoglobin (Hb) and hematocrit (Htc) values, hysterectomy indications, the rate of switching from laparoscopy to laparotomy, blood transfusion requirement, operation time, complications, the length of hospital stay and uterine weight. In the morning of operation, venous blood was taken for measuring preoperative Hb and Htc values.*

RESULTS: *The mean age of the patients was 48.01 ± 5.7. The mean operation time and the mean duration of hospitalization were 156.5 ± 49.4 minutes and 3.75 ± 1.04 days respectively. Mean uterine weight was 201.03 ± 107.2 grams. In one patient (0.4%), there was a transition from laparoscopy to laparotomy. Perioperative-postoperative blood transfusion was needed at three patients (%1.2). Intraoperative complications were sigmoid colon serosa injury in 1 patient (%0.4) and bladder perforation in 3 patients (%1.2) and a. full-thickness rectum injury in one patient (%0.4) has occurred. In postoperative period, vaginal cuff hematoma was and the vesicovaginal fistula was developed in 1 (%0.4) and 1 (%0.4) patient respectively. The postoperative fever and C-Reactive Protein (CRP) elevation were detected in four patients (1.6%). The overall complication rate was %5.6.*

DISCUSSION and CONCLUSION: *Total laparoscopic hysterectomy is a minimally invasive procedure with less morbidity and mortality than experienced laparotomy, shorter postoperative follow-up, and better cosmetic results.*

Keywords: *laparoscopic hysterectomy, laparoscopic complications, gynecologic surgery*

İletişim / Correspondence:

Dr. Nuri Peker

Uşak Eğitim Ve Araştırma Hastanesi, Kadın Hastalıkları Ve Doğum Kliniği, Uşak, Türkiye

E-mail: dr.ata1980@hotmail.com

Başvuru Tarihi: 06.05.2018

Kabul Tarihi: 06.10.2018

INTRODUCTION

Hysterectomy is the most commonly performed operation among gynecologic surgical procedures and was performed in 430,000 patients in 2010 in the United States (1). Hysterectomy can be performed vaginally, abdominally or laparoscopically (2). Although hysterectomy has conventionally been performed vaginally, abdominally and using laparoscopical approach, robotic approach started to be used since 2005. When deciding the surgical approach for hysterectomy, it should be taken into consideration that it should be the most reliable approach to meet the medical needs of patient and the most suitable approach in terms of cost-efficiency. The studies published in the literature have suggested that vaginal approach should be the first choice in hysterectomy performed for benign reasons, since it has lower complication rates and better postoperative outcomes (2, 3, 4). However, laparoscopic hysterectomy is a better alternative for abdominal hysterectomy as it causes less postoperative pain, less blood loss, a shorter recovery after surgery, fewer wound site infections, and a shorter length of hospital stay (3,4, 5 5, 6, 7). Nevertheless, having a longer learning curve, obtaining two-dimensional image and limited hand-wrist movements are among the major disadvantages of the method.

In the study, we aimed to retrospectively evaluate the total laparoscopic hysterectomy cases performed in our clinic between October 2014 and June 2016

METHODS

250 cases who underwent total laparoscopic hysterectomy in the obstetrics and gynecology clinic between January 2012 and November 2017 were retrospectively evaluated in terms of age, parity, body mass index (BMI), preoperative and postoperative hemoglobin (Hb) and hematocrit (Htc) values, hysterectomy indications, the rate of switching from laparoscopy to laparotomy, blood transfusion requirement, operation time, complications, the length of hospital stay and uterine weight. In the morning of operation, venous blood was taken for measuring preoperative Hb and Htc values. The Hb and Htc values were measured for check on the first postoperative day. Uterine weight information was obtained from pathology reports. Approval of the Ethics Committee was not obtained since the study was retrospective. Our results were presented by performing descriptive statistics.

Surgical Technique

After sterile conditions were obtained and the patient was dyed with povidone iodine, a foley catheter was inserted into the bladder and the stomach air was evacuated, using orogastric tube. To facilitate uterine mobilization and surgical vision, a uterine manipulator was placed in the cervix. Bipolar grasper, monopolar hook and Ligasure (COVIDIEN, US) were used as energy modalities. Infundibulo-pelvic ligaments, fallopian tube meso, ovarian ligament and round ligaments were sealed with ligasure and cut. The anterior leaf of the broad ligament was then dissected and the bladder was moved away with blunt and sharp dissection. The bilateral uterine artery-vein and upper cardinal ligaments were sealed and cut. With the help of Rumi I, the uterus and/or adnexae were taken out of the abdomen vaginally by carrying out colpotomy from the junction level of the upper sacrouterine ligament. Subsequently, the vaginal cuff was sutured using Z sutures one by one. Following hemostasis, CO2 insufflation was terminated. The trocars were taken out of the abdomen by checking the fascia points and the 10-mm trocar incisions along with the fascia were primarily repaired. Five-millimeter incisions were primarily closed with cutaneous-subcutaneous sutures.

RESULTS

Of the 250 cases included in the study, the mean age was 48.01±5.7 years, the mean parity was 2.5± 1.2, the mean change in the preoperative and postoperative Hb and Htc values was 1.65±0.9 gr/dl and 4.86± 2.7, the mean operative time was 156.5±49.4 minutes, the mean uterine weight was 201.03±107.2 gr. The mean length of hospital stay of the patients was found to be 3.75±1.04 days (Table 1). Only in one patient (0.4%), the procedure was converted to laparotomy, although it was started laparoscopically. 3 patients (1.2%) developed intraoperative bleeding during the surgical procedure and blood was transfused.

Sigmoid colon serosal injury occurred in one (0.4%) patient, full-thickness perforation occurred in the rectum of one (0.4%) patient, and bladder perforation occurred in three (1.2%) patients. In the postoperative period, vaginal cuff hematoma and vesicovaginal fistula developed in one (0.4%) and one (0.4%) patient, respectively. Four patients (1.6%) were found to have postoperative fever and elevated C-reactive protein (CRP). The overall complication rate was found as 5.6% (Table 2). In the case of full-thickness rectum perforation, the diagnosis was made by performing laparotomy after acute abdomen findings, fever and elevated CRP findings arose on the postoperative 3rd day. A non-linear rupture, approximately 2 cm in length, was observed in the rectum of the patient in the exploration performed after lower umbilical median incision. The patient was followed up in the intensive care unit for three days after laparotomy, but died on the sixth postoperative day. Two of three patients, who had bladder perforation, had a history of delivery by cesarean section. In these patients, the bladder was repaired laparoscopically, and the bladder catheter was removed on the seventh postoperative day. In the case of vesicovaginal fistula, the fistula was repaired laparoscopically. Three patients received blood transfusion during the procedures.

Table 1. Characteristics of the cases, intraoperative and postoperative results

Age* (year)	48.01±5.7	31-66
Parity*	2.5±1.2,	0-6
Operation time(min.)*	156.5±49.4	95-280
Uterine weight (gr.)*	201.03±107.2	56-584
Changes in the preoperative and postoperative Hb values (gr/dl.)*	1.65±0.9	
Changes in the preoperative and postoperative Htc values (gr/dl.)*	4.86±2.7	
length of hospital stay (day)	3.75±1.04	2-8
Converted to laparotomy	1	
Blood transfusion number	3	

Table 2. Preoperative and Postoperative Complications

Full-thickness perforation occurred in the rectum **	1	0.4
Sigmoid colon serosal injury **	1	0.4
Vesicovaginal fistula **	1	0.4
Bladder perforation **	3	1.2
Vaginal cuff hematoma **	1	0.4
Postoperative fever and elevated C-reactive protein (CRP)**	4	1.6
Intraoperative bleeding **	3	1.2
Total Complications **	14	5.6

***: n: given as a percentage (%)*

TLH operation was performed only in 57 of our patients, while 193 patients underwent simultaneous bilateral salpingo-oophorectomy (BSO) procedure.

Although the most common indication for operation was myoma uteri (n: 107), other indications for operation were respectively dysfunctional uterine bleeding (DUB) (n: 93), pelvic organ prolapse (POP) (n: 7), endometrial hyperplasia (n: 24), chronic pelvic pain and/or simultaneous endometriosis (n: 12) and adnexal mass (n: 7). (Table 2). Laparoscopic sacrocolpopexy was added to the operations of two of the seven patients who were operated with the diagnosis of pelvic organ prolapse (POP). Transobturator Tape (TOT) procedure was added to the operations of the five patients due to simultaneous stress urinary incontinence.

DISCUSSION

Nowadays, lots of gynecologic operations can be performed successfully by using laparoscopic technique, however the laparoscopic surgery has not yet come to the desirable point because the learning curve of surgeon to perform the procedure is long, longer times are required to perform more complex interventions. Of hysterectomies performed for benign reasons in the United States in 2009, 56% were performed abdominally, 20% were performed laparoscopically, 19% were performed vaginally and 5% were performed robotically (6, 8).

The American Gynecological & Obstetrical Society suggest to perform vaginal hysterectomy (VH) in the first place (7 9). However, vaginal hysterectomy is replaced by laparoscopic hysterectomy because it is more useful to evaluate the abdomen and pelvis laparoscopically in cases such as simultaneous endometriosis, pelvic inflammatory disease, adnexal pathology, chronic pelvic pain.

Compared with laparotomy, the amount of bleeding during the procedure, postoperative pain and the length of hospital stay were found to be statistically significantly lower in laparoscopic hysterectomy (7, 8, 9, 10, 11, 9, 10, 11, 12, 13). In our study, the mean operative time was found as 156.5±49.4 minutes. Our longer operative time can be explained by the inclusion of the time spent for sacrocolpopexy-like complementary surgeries or for eliminating preoperative complications in the total time.

In our study, the complication rate was found to be 5.6% including major and minor complications. In four patients (1.6%), tract injuries occurred in the urinary system organs and this rate is similar to the literature. Two of the three patients who developed bladder perforation had a history of previous delivery by cesarean section. In the study of Mäkinen et al., the complication rate of the urinary system was found to be between 0.2% and 0.5% in abdominal hysterectomy, while it was 1.1 and 1.3% in the laparoscopic approach. These rates are known to rise up to 3% in the current literature (5, 12-14 7, 14-16). In the patient who developed vesicovaginal fistula, ureteral injury occurred at the location where the ureter enters the bladder, and it was repaired laparoscopically. Inadequate knowledge of the anatomical urinary tract, the use of monopolar energy source longer than necessary while performing vaginal colpotomy, and inadequate positioning of the uterus due to inappropriate placement of uterine manipulator can be regarded as the major factors in the occurrence of such complications.

The complication of intestinal injury during laparoscopic hysterectomy occurs in patients with endometriosis or during the elimination of adhesions that develop after previous open abdominal operation, and usually while entering abdomen. However, it may more rarely occur during electrocoagulation (15, 16, 17, 18). The rate of colon injury during laparoscopy is 0.62-1.6% (17, 19). Although there is no need for intervention to serosal injuries, primary suturing is sufficient in full-thickness injuries, if intestinal cleansing is performed well. In the study we conducted, sigmoid serosal injury was observed in one patient and full-thickness rectal perforation was observed in one patient; the total number of complication was two and the rate was found to be 0.8% which is similar to the literature. Sigmoid colon serosal injury was seen in the preoperative period and was repaired by primarily suturing. However, the diagnosis of full-thickness rectal perforation was made during emergency laparotomy as a result of acute abdomen findings developed in the patient on the third postoperative day. Although required medical and surgical treatments were administered, the patient passed away on the sixth postoperative day.

In terms of cosmetic results, the laparoscopic method is more successful than conventional abdominal hysterectomy. In addition to better cosmetic results, there are randomized controlled studies that show laparoscopic approach causes less pain in the postoperative period (18-20). Previous abdominal surgery is considered as a relative contraindication for laparoscopy. In such cases, the abdomen can be entered by open technique, also called the Hasson technique; moreover, pneumoperitoneum can be created by safely entering the abdomen from the Palmer's point below the costal margin in the midclavicular line with the veress needle technique. Previous surgery also increases the rates of conversion from laparoscopic surgery to laparotomy. This rate ranges from 2.7% to 3.9% in TLH. Intraabdominal intense adhesions, uncontrolled bleeding, unsuccessful pneumoperitoneum, and intraabdominal organ injuries are the main causes of conversion to laparotomy (5, 7).

In our series, only one patient (0.4%) required conversion from laparoscopy to laparotomy due to severe intestinal adhesions.

In conclusion, total laparoscopic hysterectomy is a minimally invasive procedure which can be

successfully performed in experienced hands and has lower morbidity and mortality rates than laparotomy, better cosmetic results, and also requires shorter postoperative recovery time. Based on the fact that surgery is a teamwork, we believe that the success rate will be higher in surgical procedures performed by the same team.

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