Total Laparoscopic Hysterectomy Compared with Abdominal Hysterectomy; Clinical Outcomes

Total Laparoskopik Histerektomi ve Abdominal Histerektomi Karşılaştırılması; Klinik Sonuçlar

Total Laparoskopik Histerektomi Sonuçları / Total Laparoscopic Hysterectomy Outcomes

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Özet

Amaç: Çalışmanın amacı, total laparoskopik histerektomi (TLH) ve total abdominal histerektomi (TAH)' nin intraoperatif ve postoperatif üstünlüklerini karşılaştırmaktır. Gereç ve Yöntem: Bu çalışma Namık Kemal Üniversitesi Tıp Fakültesi,Kadın Hastalıkları ve Doğum Anabilim Dalında Eylül 2010 ve Aralık 2012 tarihleri arasında 47 TLH ve 30 TAH yapılan hasta sunulmuştur. Bulgular: Sonuç olarak operasyon süresi TLH yapılan hastalarda TAH uygulanan hastalara oranla daha uzundu (202.56±61.53; 138.06±40.52 dakika). İki grup arasında intraoperative komplikasyon açısından anlamlı fark bulunmadı. Reoperasyon ve kan transfüzyonu gerekliliği yapılan operasyondan bağımsızdı. Hospitalizasyon süresi TLH yapılan olgularda anlamlı ölçüde kısalmıştı (3.93±0.70 ; 5.26±1.63 gün). Tartışma: Laparoskopik histerektomi laparatomiyle kıyaslandığında daha düşük perioperatif morbidite,daha iyi yaşam standardı ve kısa süreli hospitalizasyon sonrası günlük aktivitelere hızlı dönüş sağlamaktadır.

Anahtar Kelimeler

Laparoskopik Histerektomi; Total Abdominal Histerektomi; Komplikasyonlar

Abstract

Aim: The purpose of this study was to confirm the positive intraoperative and postoperative outcomes of total laparoscopic hysterectomy (TLH) and total abdominal hysterectomy (TAH). Material and Method: We presented surgical procedures performed at Namık Kemal University Faculty of Medicine, Department of Obstetrics and Gynecology between September 2010 and December 2012, 47 patients who underwent TLH and 30 patients who underwent TAH were included in the present study. Results: Operating time in TLH group was significantly longer than in the TAH group (202.56±61.53 vs 138.06±40.52 min). There were no significant differences between the two groups regarding complications, conversion to laparotomy, intraoperative bleeding. We observed no differences in reoperation and transfusion rates between the two groups. Duration of hospital stay was statistically shorter in TLH group compared to the TAH group (3.93±0.70 vs 5.26±1.63 day). Discussion: Laparoscopic hysterectomy, compared to laparotomy regarding equal outcomes and lower perioperative morbidity, improvement of quality of life, shorter hospital stay and faster return to activity.

Keywords

Laparoscopic Hysterectomy; Total Abdominal Hysterectomy; Complications

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Introduction

Laparoscopic hysterectomy was first introduced by Reich in 1989 [1]. Compared to laparotomy regarding equal outcomes and lower peri-operative morbidity, improvement of quality of life, shorter hospital stay and faster return to activity were seen after laparoscopic hysterectomy [2,3]. However, the percentage of laparoscopic hysterectomies is still very low, since abdominal hysterectomy remains the most common approach among the Obstetricians and Gynecologists [4]. An unfavorable learning curve [5,6] and extensive training of surgeons and the whole surgical team are often cited as reasons. 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 [7, 8].

The purpose of this study was to confirm the positive intraoperative and postoperative outcomes of TLH (total laparoscopic hysterectomy) and TAH (total abdominal hysterectomy).

Material and Method

We reviewed the records of 77 consecutive surgical procedures performed at our institute between September 2010 and December 2012, 47 patients who underwent TLH and 30 patients who underwent TAH were included in the present study. The study was conducted at Namık Kemal University Faculty of Medicine, Department of Obstetrics and Gynecology. The study was approved by the Medical Ethical Committee of the Namik Kemal University. The patients were classified into two groups; Group 1 included patients with TLH (n = 47) and Group 2 included patients with TAH surgery (n = 30). Hysterectomy was performed patients with myoma uteri, pelvic organ prolapsus, cervical intraepithelial neoplasia, chronic pelvic pain and ovarian cyst. Exclusion criteria for TLH were poor uterine mobility (less than half of the vagina), uterine diameter of more than 10 cm (on ultrasonography), body mass index (BMI) more than 35 kg/m2, previous pelvic or abdominal irradiation, and severe cardiopulmonary disease precluding protacted Trandelenburg position.

Surgery tecniques

The TLH and TAH were performed by surgeons. All of the patients underwent operation were admitted to the hospital 1 days before for preoperative bowel preparation. The patients underwent the same standard preparation before surgery; Cefazolin sodium 1 gr was given intravenously 30 minutes before and in 1 dose every 12 hours after the surgery. After tracheal intubation, an orogastric tube was placed to promote emptying the stomach of gastric contents (and removed immediately before tracheal extubation). Patients undergoing TLH were placed in the Trendelenburg position, whereas the supine position was used for TAH.

Intraoperative and postoperative evaluations included intraoperative blood loss (mL), the duration of the operation in minutes (from the first incision to the last suture), frequency of intraoperative and early postoperative complications, conversion rate and duration of hospital stay (days).We estimated blood loss by calculating the blood volume of the suction machine during surgery excluding liquid used for intraperitoneal washing and by weighing swabs. Operative time began at the first incision and finished after skin closure.

After induction of general anesthesia, the patient is placed in the low lithotomy position,

At the beginning of total laparoscopic hysterectomy, the uterine cavity was measured and a colpotomizer system (KOH Cup Vaginal Fornices Delineator; CooperSurgical, Shelton, Connecticut) was placed on the cervix and connected to a uterine manipulator (RUMI system, CooperSurgical). This step of the operation required approximately 10 minutes for each patient. We then proceed to the abdominal portion of the procedure.

The laparoscopic operation was accomplished using an intraumbilical 10-mm 0-degree videolaparoscope(Hopkins,Storz,Tuttlingen,Germany).

TLH is performed through 4 punctures with trocars: 1 in the umbilicus (direct view technique with insufflation); 2 lateral to the umbilicus to the right and to the left; and 1 in the left upper quadrant (transillumination and direct view). This allows the surgeon to operate with two hands and the assistant to run the camera and assist with counter traction. Different tissue sealing device (Enseal, Ethicon Endosurgery, Inc, Cincinnati, OH: Ligasure, Covedien, US) have been reported for use in total laparoscopic hysterectomy. The abdominal pressure was maintained at 12 mm Hg. Pelvic and abdominal structures were first carefully inspected. The dissection of adhesions is done either sharply or with the monopolar or bipolar energy sources. The totally amputated uterus was removed transvaginally, when the uterus was large, it was morcellated transvaginally. The vaginal vault was closed transabdominally, for suturing the vaginal cuff, we typically use traditional laparoscopic needle holders with number: 0 polyglactin (Vicryl) suture.

Statistical Analysis

The statistical analysis performed using Statistical Package Social Sciences for Windows software (Version 16.0 SPSS, Chicago, IL). Data are presented as mean and SD or percentage. The Shapiro-Wilk W test was used to identify whether the variables were normally distributed. The differences between groups were assessed by using unpaired t-tests for parametric data (age and BMI) and Mann-Whitney U-test for nonparametric data (estimated blood loss. Operating time and duration of hospitalization). Fisher's exact and x2 test analysis were used for comparison of cross-tabulated data (required blood transfusion, ureteral trauma, febril morbidity and prior abdominal surgery). Differences between groups were considered statistical significant at $P<0.05$.

Results

The baseline characteristics of the patients were showed in Table 1. The mean ages (50.02±5.89 vs 47.62±4.98 years; P= 0.07) and the average BMI (28.95±4.84 vs 28.53±4.57 kg/m2; P= 0.701) for the TLH and TAH groups, respectively, were comparable. The surgical procedures were performed succesfully for all patients. In two cases conversion to conventional laparotomy were needed because of inadequate visualization

Table 1. Baseline characteristics of patients and indication for surgery

	TLH (n =47)	TAH (n = 30)
Age (years)	50.02± 5.89	47.62± 4.98
BMI (kg/m2)*	28.95± 4.84	28.53± 4.57
Prior abdominal surgeryy	21 (% 44.7)	17 (%56.7)
Indicationy	47	30
Uterin myoma	39	26
Pelvic organ prolapsus	4	-
Cervical intraepithelial neoplasia	1	
Chronic pelvic pain	2	-
Ovarian cyst	1	4

* Statistically significant. Data presented as mean ± SD.
y Data presented as number of patients (%).

due to abdominal wall adhesions . In TLH group, operating time in TLH group was significantly longer than in the TAH group (202.56±61.53 vs 138.06±40.52 min). There were no significant differences between the two groups ragarding complications, conversion to laparotomy, intraoperative bleeding in Table 2. One ureteral injury was reported in TLH group. We observed no differences in reoperation and transfusion rates between the two groups. One of the patients in the TLH group needed a blood transfusion, whereas 2 (6.6%) in the TAH group.

Duration of hospital stay was statistically shorter in TLH group compared to the TAH group (3.93±0.70 vs 5.26±1.63 day; P = .001).

Table 2 . Clinical outcomes

	TLH (n = 47)	TAH (n = 30)	P Value
Estimated blood loss (mL)	292 ± 89.1	314 ±80.9	.05
Operating time (min)	202 ± 61.5	138 ±40.5	.001
Hospitalization (d)	3.93 ± 0.7	5.26 ±1.63	.001
Major complication*			
Hemorrhage (required blood transfusion)	1	2	NS
Intraoperative	0	0	
Postoperative	1 (2.1%)	2 (6.6%)	NS
Bladder trauma	0	0	
Bowel trauma	0	0	
Ureteral trauma	1 (2.1%)	0	
Converted to laparotomy in TLH	0	0	
Minor complication*			
Febrile morbidity (.38₃ C)	0	1 (3.3%)	NS

Data presented as mean ± SD. A p value .05 is considered statistically significant
*Data presented as number of cases (%). NS: Statıstıcally not sıgnıfıcant

Discussion

The aim of this study was to evaluate the surgical outcomes between TLH and TAH. Recently, there were several studies in which intraoperative blood loss, operating times, and the rate of complications compared between these operations. The laparoscopic approach is an acceptable treatment modality in the current gynecologic practice [9].

Jahan et al performed a prospective comparative study on the efficiency and outcome of LAVH, TAH, vaginal hysterectomy on 750 patients. Their results showed that LAVH and vaginal hysterectomy were more beneficial to patients because of less estimated blood loss, less analgesia use, less intraopretative and postoretative complication rates, less postoperative pain, more rapid recovery, and shorter hospital stays [10]. In the current study, we observed significantly longer operative time in TLH compared with TAH group (202 vs. 138 min). A similar result was earlier reported. However, Malur et al, in a randomized population, demonstrated comparable operative time between LAVH and TAH [11, 12].

All previous studies showed significantly shorter hospitalization with laparoscopy compared with laparotomy. We found a mean duration of hospital stay after TLH of 3 days compared with 6 days after TAH. Similar results were demonstrated in other European studies. However, the duration of hospitalization in North American studies is usually shorter compared with European, may be because of the different health insurance status [13, 14].

According to previous study it has been reported that intraoperative and perioperative blood loss is lesser in the LAVH group compared to the abdominal surgery [15]. In agreement with this study we found that intraoperative blood loss in the TLH group was significantly less than in the TAH group. One of the subjects in the TLH group required transfusion, whereas 2 of subjects required in the TAH group.

The overall complication rate of 2.1% in this series compared favorably with that reported in other TLH studies (7.9-20%). The relatively lower rate of complications encountered in the present study was due to the small number of patients. Some studies have demonstrated that a low complication rate can be achieved by extensive training in laparoscopy and optimizing of the technique [16, 17]. Johnson et al. published a meta-analysis of prospective randomized trials and stated that the rate of urinary complications was higher with laparoscopy. In our study we had just one cases in which ureteral injury was detected and repaired postoperatively. There were no urinary complications in TAH group [18].

The complication rate for TLH has gradually been decreased with increased surgical experience at our institute, thus, less experienced gynecologic surgeons may experience higher complications when attempting TLH. The total conversion rate of 4.2 % in the present study is comparable to the rates reported in other TLH series [17, 19]. Regarding a previous study, there is no clear evidence on the superiority of the hysterectomy methods one to another [20]. In the present study, the mail reason for conversion was an inability to obtain adequate exposure for the critical region of interest due to a pelvic adhesion and/or a fixed uterus. The major limitation of our study was relatively small number of patients. Further research is required with full reporting of all relevant outcomes, in particular important long-term outcomes, in large randomized controlled trials to minimize the possibility of a reporting bias.

In conclusion, Though operating time in TLH is longer, it is more beneficial than the traditional TAH for decreasing the lenght of postoperative hospital stays and intraoperative blood loss with no difference in operative complications.

Competing interests

The authors declare that they have no competing interests.

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