Comparative Effects of Hysterectomy Methods on Life Quality in the Early Postoperative Stage

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Abstract

Objective: The aim of this study was to determine to what extent the hysterectomy method applied to women effects the comfort of life in the early postoperative period.

Materials and methods: This research is a case-control study. 70 women were included, 35 open hysterectomies and 35 laparoscopic hysterectomies. “Personal Information Form”, and “Early Postoperative Comfort Scale” were used to collect the data.

Results: In our study, when hysterectomy surgeries performed by TLH method were compared with TAH method, it was observed that women had lower postoperative burping time, number of painkillers administered, hospitalization time and preoperative anxiety. In addition, it was observed that the postoperative comfort level of women increased as the level of education and the number of painkillers administered increased, while the postoperative comfort level was negatively affected in the presence of chronic disease.

Conclusion: Postoperative outcomes of laporascopic hysterectomy are more favorable than abdominal hysterectomy. Due to the small sample size of our study, further multicenter studies with larger samples are strongly recommended.

Key Words: Abdominal hysterectomy, laparoscopic hysterectomy, comfort. nursing.

Introduction

Hysterectomy is one of the most common surgical procedures after cesarean section. It is most commonly performed on women between the ages of 45 and 55. Hysterectomies are performed for both gestational and malignant conditions such as irregular bleeding, pelvic pain, prolapse, myoma uteri, gynecologic cancers, pelvic inflammatory disease, endometriosis and adenomyosis[1,2]. The main purpose of hysterectomy for various reasons is to solve problems such as chronic pelvic pain, abnormal uterine bleeding and symptomatic fibroids and to improve women's physical, psychological, sexual health and quality of life[3]. Hysterectomy can be performed using abdominal or laporoscopy techniques depending on the surgical field. Abdominal hysterectomy is the most common operation technique in gynecology. With the use of this technique, postoperative complications such as bleeding, ureteral trauma, thromboembolic disease and pain can be seen in the early postoperative period, intestinal, urinary system and sexual dysfunction disorders in the later period, and severe menopausal symptoms and genital prolapse in the late period[4]. Laparoscopic hysterectomy is the removal of the uterus through three 5-10 mm incisions in the abdominal wall. Laparoscopic hysterectomy is superior to abdominal hysterectomy in terms of postoperative pain, morbidity, blood loss, time to return to activities of daily living, wound infection and length of hospital stay [1,5]. Accelerated surgery is a multimodal strategy that reduces stress, which is the hormonal response to surgery, and promotes rapid postoperative recovery in the patient. This approach ensures that the patient experiences less pain, fatigue, weakness, bowel knots, nausea and vomiting are reduced and prevented in the post operative period. In order to achieve this, the patient should be informed about the surgical process, minimum dose of opoid use, minimal surgical invasive access, shortening the preoperative fasting period, rapid postoperative nutrition, early ambulation and intravenous fluid therapy during surgery[1,6].

Methots

This study is a case-control study. This study was conducted between December 1, 2022 and December 1, 2023 in the city of Izmir in western Turkey to determine to what extent the hysterectomy method applied to women effects the comfort of life in the early postoperative period.

Population and sample of the study

The population of the study consisted of 204 women who underwent hysterectomy surgery in Izmir Bakircay University Cigli Education and Research Hospital within the last year. The sample size was determined by applying Mann Whitney U test for two independent groups as a sample calculation method. In the power analysis performed using the G power 3.1.9.2 program, a prior power analysis of the two-tailed wpote3 test in paired groups

was performed. In the study, it was desired to create at least a moderate effect, therefore, using an effect size of 0.5, a standard error of 0.05 (95% confidence interval) and a power/power value of 0.80, it was concluded that the sample size in a single group should be at least 25 people. However, due to possible loss of subjects, the number of participants was increased by 5-10 people. Therefore, 70 people, 35 open hysterectomy and 35 laparoscopic hysterectomy, were reached. The study included women who were 18 years of age or older, can speak Turkish and had undergone abdominal hysterectomy and laparoscopic hysterectomy.

Data collection materials

"Personal Information Form" and "Early Postoperative Comfort Scale (PCS)" were used to collect the data.

Personal ınformation form

This form (24 questions) was prepared by the researchers in line with the literature. The form included questions on sociodemographic (15 questions) and gynecological (9 questions) characteristics of the participants such as age, educational status, employment status, marital status, number of pregnancies and births, income level and social security status.

Early Postoperative comfort scale (PCS)

The early postoperative comfort scale consists of a total of 24 statements, including 12 positive (1, 5, 6, 11, 14, 16, 18, 19, 20, 21, 23, 24), 12 negative (2, 3, 4, 7, 8, 9, 10, 12, 13, 15, 17, 22), Likert-type scale with three levels and four dimensions that constitute the theoretical components of comfort, graded between 1-6 (disagree - strongly agree). The negative scores obtained in the evaluation are reverse coded and summed with the positive items. The highest total score that can be obtained from the scale is 144 and the lowest total score is 24. The total score obtained is divided by the number of scale items to determine the average value and the result is evaluated between 1-6. As the numerical value of the result approaches 1, it can be said that the comfort level decreases, and as it approaches 6, the comfort level increases[8].

Data collection process

Data were collected by the investigators using data tools. Personal Data Collection form and Early Postoperative Comfort Scale were administered within the first 24 hours after surgery.

Ethical permission

Ethics committee approval for the research was obtained from the Izmır Bakırcay University, Turkey (Protocol No: 2777). In addition, written permission was obtained from Izmir Bakirçay University Ciğli Education and

Research Hospital on 01.011.2022 to conduct the study. participation in the study was voluntary and data collection was carried out after the submission of an informed consent form signed in writing by each patient.

Data analysis

The statistical analysis was carried out with IBMSPSS 26.0 software (IBM, Armonk, New York, US). Descriptive statistics were used for continuous variables (mean, SD), while frequency distributions were determined for categorical variables. Firstly, it was evaluated whether the data were suitable for parametric or non-parametric statistics. Normality distribution, skewness kurtosis (-1 - +1), mean, median, mode, scatter and histogram graphs and equality of variance of groups (Levene's F Test) were evaluated and it was determined that the data set was suitable for parametric statistics. Chi-square test was used for categorical variables and Independent T test was used for continuous variables with normal distribution. Pearson Correlation was used to compare the means between groups. Significance level was taken as $p<0.05$. Multiple linear regression analysis was performed to determine the extent to which comfort of life was affected in the early postoperative period. The enter method, which is the standard method, was used in regression analysis. Dependent variables were included in the model together and the joint effect of dependent variables on the independent variable was examined.

Result

The Cronbach's alpha value of the scale was found to be 0.83 in the study of Ustundag and Aslan in their study "Adaptation of Perianesthesia Comfort Scale into Turkish". In our study, the Cronbach alpha value of the scale was 0.701.

In the study conducted to evaluate the effect of the applied hysterectomy method on the comfort of life in the early postoperative period, the mean age of all women was 55.44±6.210, the mean age of women who underwent TLH was 56.57±6.307 and the mean age of women who underwent TAH was 54.31±5.989. In the study, there was no statistically significant difference between the socio-demographic characteristics of both groups ($p>0.05$) (Table 1).

In the study, the mean BMI of the women who underwent TLH was 28.12±2.529 and the mean BMI of the women who underwent TAH was 27.93±3.280, and there was no statistically significant difference between the health histories of the women in both groups ($p>0.05$) (Table 2).

When the medical diagnoses of the women in our study were compared, it was determined that 37.1% of the women in the TLH group had myoma, 57.1% had AUC, 5.7% had EC, 5.7% had UP and 28.6% had ES. Among women with TAH, 34.3% had fibroids, 57.1% had AUC, 5.7% had AC, 5.7% had UP and 28.6% had ES. Statistical

analysis showed that there was no significant difference between the medical diagnoses in both groups ($p>0.05$) (Table 3).

In the study, 65.7% of the women in the TLH group had undergone abdominal surgery before and 88.6% of them entered menopause; 71.4% of the women in the TAH group had undergone abdominal surgery before and 74.3% of them entered menopause. Statistical analysis showed that there was no significant difference between the groups ($p>0.05$) (Table 4).

When the distribution of the number of painkillers administered according to the hysterectomy method was analyzed, the median value of the number of painkillers administered was 8 in the TAH group and 10 in the TLH group. As seen in Figure 1, the distribution of the number of painkillers administered in the TAH group was in a wider range. Women in the TAH group generally received a higher number of painkillers (Figure 1).

[Place Figure 1 here]

Fig 1. Distribution of the number of painkillers administered according to hysterectomy method

When the distribution of the first gas expulsion time according to the hysterectomy method applied, although the first gas expulsion time of the women did not show a significant difference according to the type of hysterectomy, the distribution of the first gas expulsion time in the TAH group is in a wider range and tends to last longer ($p>0.05$), as seen in Fig 2 (Figure 2).

[Place Figure 2 here]

Fig 2. Distribution of time to first flatulence according to hysterectomy method

When the distribution of the duration of postoperative hospital stay according to the hysterectomy method was examined, it was determined that the mean duration of hospital stay of the women showed a statistically significant difference according to the type of hysterectomy ($p<0.001$), the mean duration of hospital stay in the TAH group was 3.03±.169, and the mean duration of hospital stay in the TLH group was 2.49±.562 (Figure 3).

[Place Figure 3 here]

Fig 3. Distribution of duration of postoperative hospital stay by method

When the distribution of the mean perianesthesia comfort scale scores according to the hysterectomy method was examined, the PCS scores of the women showed a significant difference according to the type of hysterectomy performed, and as seen in Figure 4, the distribution of PCS scores in the TLH group is in a wider range (the number of people with both low and high scores is higher) and tends to be higher ($p<0.05$). (Figure 4)

[Place Figure 4 here]

Fig 4. Distribution of perianesthesia comfort scale scores according to hysterectomy type

The results of multiple linear regression analysis to determine how the type of surgery, age, education, BMI, presence of chronic disease and the number of painkillers used predicted the comfort level were statistically significant (F(14,598)= 10.346, p= ,000). The independent variables in the model explain 49.6% of the total variance (R2=.496, p<0.001). When the regression coefficients were analyzed, it was found that educational status (β=.386 p<0.001) and the number of painkillers administered (β=.285 p<0.005) had a significant positive effect on comfort level, while BMI (β=-.296, p<0.05) and the presence of chronic disease (β=-.271, p<0.05) had a negative and significant effect on comfort level (Table. 5).

In our study, no statistically significant difference was found between total abdominal hysterectomy and total laparoscopic hysterectomy patients in terms of sociodemographic characteristics. Buhur and Erdem found no significant difference in sociodemographic characteristics in their study with total abdominal hysterectomy and total laparoscopic hysterectomy patients[1]. Elimizadeh et al. found no significant difference in sociodemographic characteristics in their study with total abdominal hysterectomy and total laparoscopic hysterectomy patients[6]. Our study was similar to the literature.

The majority of indications for hysterectomy are fibroids and abnormal uterine bleeding. In this study, 37.1% of the patients who underwent total laparoscopic hysterectomy were operated for fibroids and 57.1% for abnormal uterine bleeding, while 34.3% of the patients who underwent total abdominal hysterectomy were operated for fibroids and 57.1% for abnormal uterine bleeding. In the study of 40.8% of women underwent hysterectomy due to fibroids and 33.3% due to abnormal uterine bleeding[1].

In our study, we compared the results of abdominal hysterectomy (n=35) and laparoscopic hysterectomy (n=35) in 70 patients who underwent hysterectomy. In our study, we found that women who underwent surgery with TLH method had shorter burping time and hospitalization time. A wider range of painkillers were administered to women who underwent surgery with the TAH method. When the distribution of perianesthesia comfort scale scores and the hysterectomy method applied were examined, it was observed that women who underwent surgery with the TLH method had lower anxiety. Elimizadeh et al. found that prescribed painkillers, duration of first burp and length of hospital stay were lower in patients undergoing laparoscopic hysterectomy compared to patients undergoing abdominal hysterectomy[6]. Buhur and Erdem found that patients who underwent total laparoscopic hysterectomy had less hospitalization time than patients who underwent total abdominal hysterectomy[1].

In our study, the mean BMI of women who underwent TLH was 28.12 and the mean BMI of women who underwent TAH was 27.93. In the study of Chinolla-Arellano et al., the mean BMI of women who underwent hysterectomy was 25.7[9]. In the study of Elimizadeh et al., the mean BMI was found to be 28.8 in patients with

total abdominal hysterectomy and 29.2 in patients with total laparoscopic hysterectomy[6]. Our study is similar to the literature.

Maheux-Lacroix et al. reported that it is safe to discharge patients on the same day after total laparoscopic hysterectomy[10]. In our study, PCS scores of women showed a significant difference according to the type of hysterectomy performed and anxiety was lower in women who underwent TLH method. In the study of Sahin and Rızalar examining the comfort level and the factors affecting it in patients undergoing surgery, it was found that the disease and the type of surgery performed made a difference between the comfort scores of the PCS scores[11].

Conclusion

Hysterectomy is the surgical removal of the uterus. Different surgical techniques can be used in the operation. In our study, when the hysterectomy surgeries performed with TLH method were compared with TAH method, it was observed that the women had lower postoperative burping time, number of painkillers administered, hospitalization time and preoperative anxiety. In addition, it was observed that the postoperative comfort level of women increased as the level of education and the number of painkillers administered increased, while the postoperative comfort level was negatively affected in the presence of chronic disease. Finally, due to the small sample size of our study, further multicenter studies with larger samples are strongly recommended.

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Table 1. Comparison of socio-demographic characteristics

	TLH n(%)	**TAH n(%)**	**χ^2 (p)**
Age	56.57±6.307	54.31±5.989	0.301(0.129)
Education			
illiterate	12(34.3)	10(28.6)	
Literate	12(34.3)	12(34.3)	5.656(0.358)
Primary School	11(31.4)	8(22.9)	
Middle School	-	2(5.7)	
High School	-	1(2.9)	
University	-	2(5.7)	
Marital status			
Married	35(100)	34(1)	0.000(0.500)
Single	-	97.1(2.9)	
Employment status			
Yes	7 (20.0)	7 (20.0)	0.108(1.000)
No.	28(80.0)	28(80.0)	
Occupation			
Not working	29(82.9)	30(85.7)	1.080(1.000)
Self-employment	6 (17.1)	5(14.3)	
Income perception			
Income less than expenditure	8(22.9)	8(22.9)	
Income matches expenditure	24(68.6)	26(74.3)	1.080(0.764)
Income more than expenditure	3(8.6)	1(2.9)	
Place of residence			
County	6(17.1)	7(20.0)	0.759(1.000)
City	29(82.9)	28(80.0)	
Type of house lived in			
Apartment	33(94.3)	34(97.1)	0.094(0.500)
Detached	2(5.7)	1(12.9)	
Number of people living at home			
1	-	1(2.9)	
2	18(51.4)	17(48.6)	1.283(1.000)
3 and above	17(48.7)	17(48.6)	

χ^2: Chi-Square Test

Table 2. Comparison of health history

	TLH n(%)	TAH n(%)	χ^2 (p)
BMI	28.12±2.529	27.93±3.280	1.651(0.791)
Chronic Disease History			
Yes	15(42.9)	16(45.7)	-.029(1.000)
No	20(57.1)	19(54.3)	
Heart Disease History			
Yes	4(11.4)	3(38.6)	0.048(1.000)
No	31(88.6)	32(91.4)	
DM Disease History			
Yes	7(20.0)	5(14.3)	0.076(0.750)
No	28(80.0)	30(85.7)	
Neurological Disease History			
Yes	7(20.0)	10(28.6)	0.699(0.403)
No	28(80.0)	25(71.4)	
Hypertension Disease History			
Yes	3(8.6)	1(2.9)	1.061(0.303)
No	32(91.4)	34(97.1)	
Lung Disease History			
Yes	2(5.7)	2(5.7)	0.000(1.000)
No	33(94.3)	33(94.3)	
Smoking			
Yes	15(42.9)	17(48.6)	0.230(0.631)
No.	20(57.1)	18(51.4)	
Number of Cigarettes			
Does not use	20(87.0)	18(85.7)	0.014(1.000)
1-10	2(8.7)	2(9.5)	
11-15	1(4.3)	1(4.8)	

χ^2: Chi-Square Test

Table 3. Comparison of medical diagnoses

	TLH n(%)	TAH n(%)	χ^2 (p)
Myoma			
Yes	13(37.1)	12(34.3)	0.062(0.803)
No	22(62.9)	23(65.7)	
Abnormal Uterine Bleeding			
Yes	20(57.1)	20(57.1)	0.000(1.000)
No	15(42.9)	15(42.9)	
Adnexal Mass			
Yes	2(5.7)	2(5.7)	0.000(1.000)
No	33(94.3)	33(94.3)	
Uterine Prolapse			
Yes	2(5.7)	-	2.059(0.151)
No	33(94.3)	35(100.0)	
Endometrial hyperplasia			
Yes	10(28.6)	10(28.6)	0.000(1.000)
No	25(71.4)	25(71.4)	

χ^2: Chi-Square Test

Table 4. Comparison of obstetric characteristics

	TLH n(%)	TAH n(%)	χ^2 (p)
Abdominal surgery			
Yes	23(65.7)	25(71.4)	0.265(0.607)
No	12(34.3)	10(28.6)	
Menopause			
Yes	31(88.6)	26(74.3)	2.362(0.124)
No	4(11.4)	9(25.7)	
Menopause period			
0-2 years	12(34.3)	16(45.7)	1.564(0.496)
3-4 years	7(20.0)	8(22.9)	
5 years and above	16(45.7)	11(31.4)	

χ^2: Chi-Square Test

Table 5. Variables predicting the total score of the early postoperative comfort scale

PCQ	B	Std. Error	Beta	t	p
(Constant)	5.220	1.060		4.923	0.000
Type of surgery	0.117	0.120	0.091	0.981	0.331
Age	-0.011	0.011	-0.105	-0.976	0.333
Education	0.223	0.061	0.386	3.684	**0.000**
BMI	-0.066	0.023	-0.296	-2.861	**0.006**
Chronic disease	-0.353	0.136	-0.271	-2.596	**0.012**
Number of painkillers administered	0 .055	0.018	0.285	2.997	**0.004**
R= ,704, R^2= ,496 F(14,598)= 10,346, p= ,000					

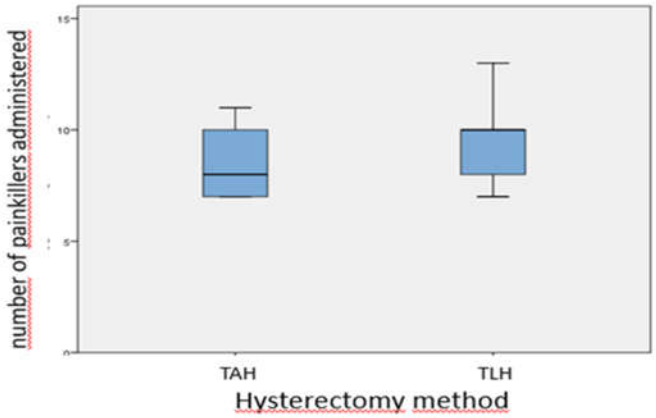

Fig 1. Distribution of the number of painkillers administered according to hysterectomy method

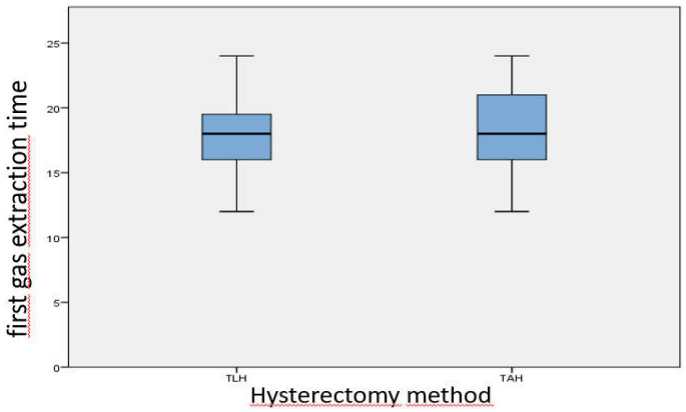

Fig 2. Distribution of time to first flatulence according to hysterectomy method

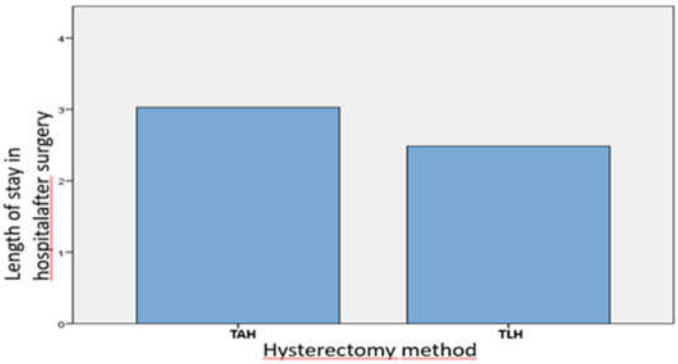

Fig 3. Distribution of duration of postoperative hospital stay by method

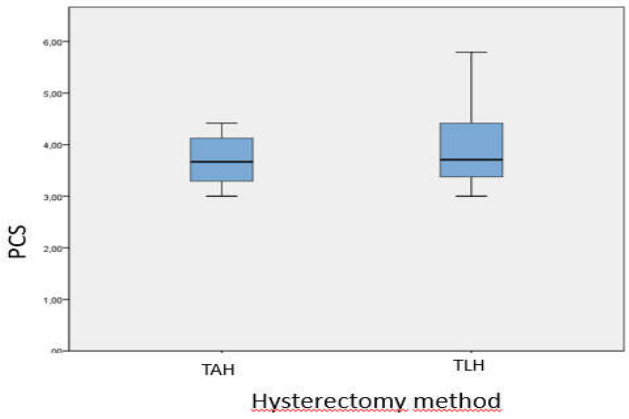

Fig 4. Distribution of perianesthesia comfort scale scores according to hysterectomy type