



EFFECT OF PATIENT'S AGE AND BMI ON SAME DAY DISCHARGE AFTER TOTAL LAPAROSCOPIC HYSTERECTOMY AMONG WOMEN IN EGYPT

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ABSTRACT

Background; Laparoscopy has many potential advantages as an approach for hysterectomy of being efficient with low estimated blood loss, the concept of postoperative same day discharge is increasing nowadays for its great outcomes on the patients and health care systems.

Aim and objectives; To detect the Effect of patient's age and BMI on same day discharge after total laparoscopic hysterectomy.

Patients and Methods; This prospective observational study was conducted at the Department of the Obstetrics & Gynecology, Helwan University Hospitals, on 50 patients who underwent laparoscopic hysterectomy and then the idea of same day discharge was offered to the patients when possible.

Results: Fifty laparoscopic hysterectomies were performed. Forty-nine percent (n=47) of the patients were discharged home the same-day. There was statistically non-significant relation between same day discharge and either age or body mass index. **Conclusion:** We found that no significant difference according to age and BMI in cases undergoing laparoscopic hysterectomy, moreover same-day discharge after uncomplicated laparoscopic hysterectomy is a safe alternative to overnight admission in healthy patients.

Keywords: Hysterectomy, Laparoscopic hysterectomy, Age, BMI

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Introduction

One of the most commonly carried out surgical procedures is the hysterectomy. There are still arguments about which of the three hysterectomy techniques is better, open, vaginal, and laparoscopic [1].

Nonetheless, a number of studies have shown that minimally invasive techniques (such as robotic surgery or laparoscopy) result in better postoperative results [2]. Complete laparoscopic hysterectomies seem more advantageous than abdominal or vaginal hysterectomies [for example, quicker operating time, higher efficiency, and less blood loss]. In people who are fat, it is also more feasible [3]. Moreover, there were less postoperative complications, a shorter hospital stay, and a quicker return to normal daily activities after laparoscopic hysterectomy [LH][4].

Many hemodynamic, pulmonary, and endocrine effects of intraperitoneal carbon dioxide (CO₂) insufflation and adjustments in patient position during laparoscopic surgery. During laparoscopic surgery, a number of surgical problems, such as subcutaneous emphysema, pneumothorax, pneumomediastinum, gas embolization, severe

bleeding, and bowel or bladder perforation, might arise [5]. Few studies have attempted to determine the likelihood and safety of an early hospital release after a laparoscopic hysterectomy. After an elective laparoscopic hysterectomy, a study found that the perioperative multimodal recovery programme is safe and feasible in a particular group of women. Fast-track (multimodal) care included full preoperative verbal and written information, intravenous dexamethasone (8 mg) during surgery, removal of the urinary catheter at the conclusion of surgery, early mobilization, and solid food intake [6].

The aim of this study to detect the Effect of patient's age and BMI on same day discharge after total laparoscopic hysterectomy.

Patients and Methods

This prospective observational study was conducted at the Obstetrics & Gynecology Department, Helwan University Hospitals, on 50 patients underwent total laparoscopic hysterectomy.

Inclusion and exclusion Criteria:

Age: 35 to 85 years old, indication for hysterectomy (as: abnormal uterine hemorrhage, persistent deep

pelvic discomfort, fibroids, not treated by any other medical therapy), and no preoperative malignant tumour diagnosis were included in our patient population. Exclusion criteria: We disqualified patients who met the following requirements: Age: 35 or >85 years old, Genital Tract Malignancy Diagnosis, and Difficult Procedures.

Intervention

Preoperative examination includes a thorough history taking, personal history including age, marital status, parity, residence, employment, and any unusual behaviors, as well as each participant's complaint. Menstrual history: with a focus on the timing and regularity of periods.

Obstetric history includes the number of abortions, whether they were forced or spontaneous, whether they were evacuated surgically or not, and any problems that occurred after the abortion. History of contraception: (Type & duration)

Prior history of any medical condition, including diabetes mellitus, hypertension, deep vein thrombosis (DVT), blood intake history, medicine allergies, and any prior laparotomies, including caesarean sections (CS).

clinical assessment vital indicators, including temperature, pulse, and blood pressure Size, weight, and BMI

Investigation:

Clinical examinations include electrocardiography and BMI calculations.

Complete blood count, liver function tests, renal function testing, and blood sugar curve are examples of biochemical studies.

abdomen U/S and CXR radiological tests

Vaginal ultrasound for ultrasound assessment Uterine fibroids, adenomyosis, an ovarian mass or cyst, endometriosis, an endometrial polyp, and adnexal masses are all considered diseases.

Complete laparoscopic hysterectomy (TLH) as an operating technique

preparing for surgery: Anesthesia: General anaesthesia with endotracheal intubation was used for all laparoscopic surgeries. Position: The patient is set up in stirrups in a modified lithotomy posture with the hips flexed 30 to 45 degrees. The patient's arms are placed by their sides. To see the pelvic structures, the patient is positioned in a 20° to 30° Trendelenburg posture.

Draping: The abdominal field does not include the vagina or perineum, which are sterilely prepared and draped. A uterine manipulator and Foley catheter are inserted.

Before laparoscopy, the abdomen is cleaned and draped to create a sterile area.

Lee-Huang Point peritoneal access using the closed Veress needle approach (midway between xiphoid process and umbilicus along midline). With a high-flow (> 3 L/min) insufflator operating at pressures (15 mm Hg), CO₂ is insufflated.

A supra-umbilical port is used to enter the laparoscope, which allows for the visualisation of the upper abdominal contents. In addition to the supra-umbilical port utilised for the laparoscope, a four-trocar method was used. Trocars were inserted with the aid of a laparoscope. Three to four centimetres medial and just above the level of the anterior superior iliac spines, two 5-mm sheaths were positioned. These sheaths were positioned to avoid the inferior epigastric vessels. As a result, two extra 10-mm sheaths are positioned in the suprapubic region. Location of the anterior abdominal wall's deep and superficial veins. Trocar placement recommendations are shown by black circles (William et al., 2011). To see the anatomical markers, the pelvis used non-traumatic forceps to move the bowel. Via the medial leaf of the wide ligament, the path of each pelvic ureter could be seen. The round ligament on either side was lifted and separated after a uterine manipulator was inserted, the uterus was put in lateral traction, and the procedure.

Using non-traumatic graspers, medial pressure on the utero-ovarian ligament was applied. Prior to the fallopian tube and infundibulopelvic ligament, the peritoneum of the wide ligament was opened.

The window in the broad ligament was made using endoscopic scissors above the level of the ureter in order to manage the infundibulo-pelvic ligament with LigaSure. The ureter will continue to adhere to the medial leaf of the broad ligament. The anterior vesico-uterine peritoneum was cut, and the bladder peritoneum was grabbed using atraumatic grasping forceps. Sharp dissection of the bladder flap resulted in the bladder being forced away from the anterior cervix, and the uterus was raised and guided posteriorly.

Using the bipolar grasper at internal cervical os level to decapitate the ascending uterine arteries. Keep in mind that the uterine arteries may be moved away from the ureter by pressing cephalad with the uterine manipulator.

After locating the pelvic section of the ureters, the uterosacral ligament was incised using diathermy coagulation, and the ligament was transected. The incision was made in order to identify the ureter-safe region during the transection of the cardinal ligament. While performing a laparoscopic hysterectomy, the uterus was occasionally piecemeal removed using a morcellator. In the case of a supracervical hysterectomy, the vaginal cuff was then closed with a continuous 1-0 vicryl suture, and a pneumoperitoneum was subsequently reconstructed to ensure hemostasis. The information from the procedure will then be captured and logged intraoperatively, including: the length of the procedure, Complications developing or not:

These complications were categorised: difficulties during surgery, including bleeding, bladder, bowel,

and vascular damage Hemorrhage and postoperative fever are surgical complications.

Blood loss was calculated using two distinct techniques:

Examining the quantity of blood in the suction container and surgical sponges allows for the intraoperative assessment of blood loss. if a blood transfusion was done, how many units of blood were given.

After surgery, patients were given NSAID analgesics for 24 hours, then only at the patient's request, along with 1 gm of ceftriaxone intravenously, 2 gm of flagyl intravenously twice day, and 40 mg of clexane subcutaneously once daily.

Discharge: Then postoperatively, the idea of same-day discharge will be suggested in all cases with evaluation of the likelihood of this based on: patient condition, complications, financial concerns, and re-evaluation of complications or need for readmission after that will be done for one month postoperatively. In order to determine the pathological diagnosis, the specimens were transported to pathology.

Operational strategy: After introducing himself and outlining the purpose of the study, the researcher requested each participant to take part.

All participants were given thorough explanations of the study's goal and anticipated advantages. The whole project was conducted with the utmost ethical attention.

Administrative structure:

Approvals: All participants provided written permission after being fully informed, and information confidentiality was guaranteed.

Faculty's ethics committee: The institutional review board gave its OK, and permission was also acquired from the medical ethics council at Helwan University.

Statistic evaluation

SPSS (Statistical Program for the Social Sciences) version 26 was used for data analysis. Where necessary, the chi square test, fisher exact, and Fisher exact tests were used to compare categorical data. Categorical variables were presented using their absolute frequencies. Chi square for trend test was used to compare ordinal data between two groups. To validate the assumptions employed in parametric testing, the Shapiro-Wilk test was applied. Depending on the kind of data, the means, standard deviations, or median and interquartile range of quantitative variables were used to characterize them. The Mann Whitney test (for data that are not regularly distributed) was developed to compare quantitative data between two groups. For data that were not regularly distributed, Spearman rank correlation coefficients were utilised to determine the strength and direction of the association between two continuous variables. Using binary logistic regression, it was possible to pinpoint independent risk variables linked to certain health issues. P 0.05 was used as the statistical significance.

Results

Baseline characteristics of the included patient	
Age (year) Mean \pm SD	48.9 \pm 9.08
BMI (Kg/m ²) Mean \pm SD	29.36 \pm 3.24
Parity: Median (IQR)	3(2 – 4)
medical and surgical history	
Hypertension	15 (30%)
Diabetes	6 (12%)
Hyperthyroidism	1 (2%)
Hypothyroidism	2 (4%)
Previous laparotomies:	
No	37 (74%)
One	12 (24%)
Two	1 (2%)
Appendectomy	8 (61.5%)
Cholecystectomy	2 (15.4%)
Exploration	1 (7.7%)
Right salpingectomy, appendectomy	1 (7.7%)
Umbilical hernioplasty	1 (7.7%)
Previous CS:	
Absent	29(58%)
Present	21(42%)
Operative data of the studied patients	
Duration of operation (minute) Mean \pm SD	40.5 \pm 16.3
Amount of blood loss (ml) Median (IQR)	60 (50 – 92.5)
Intraoperative complications:	
Absent	47 (94%)

Present	3 (6%)
Bladder injury	1(33.3%)
Minor vascular injury	1 (33.3%)
Thermal bowel injury	1 (33.3%)
Blood transfusion	
Absent	44 (88%)
Present	6 (12%)
Distribution of the studied patients according to duration of hospital stay	
Same day discharge: Absent	3 (6%)
Present	47 (94%)
Average duration of stay: Median (IQR)	8(7 – 10)
Distribution of the studied patients according to postoperative events	
Postoperative phone call: Absent	46 (92%)
Present	4 (8%)
Reason	
Low grade fever	1 (25%)
Loin pain	1 (25%)
Vomiting	1 (25%)
Sore throat	1 (25%)
Emergency visit: Absent	47 (94%)
Present	3 (6%)
Reason	
Low abdominal pain	1 (33.3%)
Severe loin pain	1 (33.3%)
Vaginal bleeding	1 (33.3%)
30 days readmission: Absent	47 (94%)
Present	3 (6%)
Reason	
Low abdominal pain	1 (33.3%)
Severe loin pain	1 (33.3%)
Vaginal bleeding	1 (33.3%)
Postoperative complications Absent	49 (98%)
Present	1 (2%)
Reason Vesicovaginal fistula	1 (100%)

This study included 50 patients with age range from 35 to 83 years with mean age 48.9 years. body mass index ranged from 20 to 38. Concerning comorbidities, 30%, 12%, 2% and 4% had comorbid hypertension, diabetes, hyperthyroidism, and hypothyroidism respectively. Previous CS was reported in 42% of them with a range from 1 to 5 with median 2. Operative duration mean 40.5 minutes. intraoperative blood loss range from 20 to 500 ml with median 60 ml and six patients (12%) needed blood transfusion. Intraoperative complications occurred in three patients (6%); one had bladder injury, minor vascular injury and

thermal bowel injury Average duration of stay ranged from 6 to 48 hours with median 8 hours. three patients had stayed in hospital for more than 24 hours Four patients (8%) made postoperative phone call (for low grade fever, loin pain, vomiting and sore throat). three patients (6%) made emergency visits (for lower abdominal pain, severe loin pain and vaginal bleeding). Three patients needed readmission within 30 days (for lower abdominal pain, severe loin pain and vaginal bleeding). postoperative complications occurred in only one patient (vesicovaginal fistula).

	GroupI(3) Patients were not discharged	GroupII(47) Patients were discharged	P
Age (year) Median (IQR)	48(48 – 65.6)	46(42 – 54)	0.212
BMI Median (IQR)	32(26 – 32.5)	29(28 – 30)	0.665
Parity Median (IQR)	6(5.5 – 6.5)	3(2 – 4)	0.006
Hypertension	0 (0%)	15 (31.9%)	0.545
Diabetes	0 (0%)	6 (12.8%)	1
Hyperthyroidism	0 (0%)	1 (2.1%)	1

Hypothyroidism	0 (0%)	2 (4.3%)	1
Previous laparotomies			
no	2 (66.7%)	35 (74.5%)	0.848
one	1 (33.3%)	11 (23.4%)	
two	0 (0%)	1 (2.1%)	
Previous CS:			
Absent	2 (66.7%)	27 (57.4%)	1
Present	1 (33.3%)	20 (42.6%)	
Operative time	90(75 – 95)	35(30 – 44.5)	0.005
Average LOS (hours) Median (IQR)	24(24 – 36)	8(7 – 9)	0.003
Intraoperative complications:			
Absent	1 (33.3%)	46 (97.9%)	0.007
Present	2 (66.7%)	1 (2.1%)	
Postoperative phone call			
Absent	2 (66.7%)	44 (93.6%)	0.226
Present	1 (33.3%)	3 (6.4%)	
Emergency visit:			
Absent	2 (66.7%)	45 (95.7%)	0.173
Present	1 (33.3%)	2 (4.3%)	
30 days readmission			
Absent	2 (66.7%)	45 (95.7%)	0.173
Present	1 (33.3%)	2 (4.3%)	
Postoperative complications			
Absent	2 (66.7%)	47 (100%)	0.06
Present	1 (33.3%)	0 (0%)	
Amount of blood loss Median (IQR)	150(125 – 325)	50(50 – 80)	0.015
Blood transfusion			0.324
Absent	2 (66.7%)	42 (89.4%)	
Present	1 (33.3%)	5 (11.6%)	

There was statistically significant relation between same day discharge and parity , operative time and average LOS, intraoperative and post operative complications and amount of blood loss p=value <0.05. on the other hand, There was statistically non-significant relation between same day discharge and either age or body mass index, comorbid hypertension, diabetes, hyperthyroidism or hypothyroidism, previous laparotomies or previous CS, postoperative phone call, emergency visits, 30 days readmission or postoperative complications and blood transfusion (p-value > 0.05).

Discussion

Several studies have examined the efficacy and safety of performing an outpatient vaginal hysterectomy. Nevertheless, the procedure is not as simple in younger women without prolapse as it is in older women. Additionally, the vaginal approach does not allow enough access to the pelvic cavity when the requirement for a hysterectomy is due to persistent discomfort or adnexal disease. While some studies indicate an increased risk of harm to the urinary system, laparoscopic hysterectomy may enable individuals who would otherwise need an abdominal incision to benefit from vaginal hysterectomy.

In both obese and non-obese females, laparoscopic hysterectomy resulted in fewer postoperative comorbidities, shorter hospital stays, and quicker return to regular daily activities. Nonetheless, other studies found that a higher body mass index was associated with a higher risk of abdominal hysterectomy[8].

In the current investigation, there was no statistically significant correlation between same-day discharge and either age or BMI in the group under review.

As mentioned by Soliman et al (2018). Moreover, they discovered no link between age and the security, efficacy, or risks of laparoscopic hysterectomy for benign conditions[9]. According to Bhandari et al.,[10] (2014) laparoscopic hysterectomy was less practical for obese individuals with BMIs more than 30 kg/m². They justified this by pointing out that, although being more satisfying for the patient, laparoscopy in obese individuals might be technically difficult for the gynecologist[10].

Lowell and Kessler (2000) concluded that laparoscopic hysterectomy resulted in more estimated blood loss than abdominal hysterectomy. They did not rule out massive myomata uteri weighing 500 gm, despite the fact that this was linked to the lack of selection of specified criteria for patients requiring laparoscopic hysterectomy[11].

Laparoscopic hysterectomy patients' postoperative hospital stays were also shown to be much shorter than those who had abdominal hysterectomy, according to Sesti et al(2008) . [12].

According to Fathy et al. (2018), patients who had laparoscopic hysterectomy saw shorter mean hospitalization times than patients who underwent abdominal hysterectomy[13]. 88% of the patients, according to Lassen et al. (2019), were discharged from the hospital the same day. Due to an expectantly treated port hematoma, one lady needed an overnight stay in the hospital. The other two remained overnight for medical conditions unrelated to surgery (migraine; post-anesthesia vertigo)[14]. Throughout the first month, three women (12%) were recommended for an urgent care visit. One had lower abdomen discomfort for no apparent cause, one had a vaginal cuff hematoma that was managed with oral antibiotics, and one developed distinct vaginal bleeding that necessitated hospitalization. We are aware of several limitations in our work; for example, the small sample size makes it difficult to generalize the findings. Another issue is that our research does not consistently account for confounding factors, which might lead to biased findings and an underestimating of potential harmful outcomes. To clarify the therapeutic significance of our findings, more long-term investigations in multicenter settings are required. Future study will also provide physicians and academics fresh insights into the idea of early hospital release after laparoscopic hysterectomy.

Conclusion

We found that no significant difference according to age and BMI in cases undergoing laparoscopic hysterectomy, moreover same-day discharge after uncomplicated laparoscopic hysterectomy is a safe alternative to overnight admission in healthy patients.

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