Laparoscopic Hysterectomy versus Total Abdominal Hysterectomy: A Retrospective Comparative Study

Sudhev Sutasanasuang MD*

** Department of Obstetrics and Gynecology, Somdejprasangkharaj 17th Hospital, Suphanburi, Thailand*

Objective: *To compare the efficacy of total laparoscopic hysterectomy (TLH) patients in result and safety compare to those of total abdominal hysterectomy (TAH).*
Design: *Retrospective comparative study.*
Setting: *Department of Obstetrics and Gynaecology, Somdejprasangkharaj 17th Hospital, Suphanburi.*
Subjects: *Thirty TLH patients and thirty TAH controls who were operated on between June 2006 and May 2010.*
Material and Method: *Special data forms which were designed to collect the data of all patients involved in the present study were reviewed and analysed. Subjects were divided into two groups, 30 TLH and 30 TAH patients with matched to cases regard to time of the operation of TAH done before or next patients within 2 weeks, age (± 5 years) and body weight (± 10 kg).*
Main outcomes: *Amount of estimated blood loss, operative times, postoperative analgesic dosage, pain score (Verbral numeric score = VNS), length of hospital stay, intraoperative and postoperative complications.*
Results: *There were no differences in demographic characteristics variable between the two groups. The indications were benign condition that could be treated by hysterectomy with or without salpingo-oophorectomy (SO) or bilateral salpingo-oophorectomy (BSO). Mean age of both groups were 47.1 ± 8.2 years vs. 49.9 ± 6.3 years, BMI were 22.5 ± 4.2 vs. 23.8 ± 5.6, preoperative Hct were 38.4 ± 6.3% vs. 41.8 ± 8.5% (no anemia), uterine size less than 12 weeks of gestation (186.7 ± 89.2 gm vs. 223.0 ± 68.3 gm). Amount of blood loss (389.9 ± 125.4 cc vs. 275.5 ± 189.3 cc) and operative time (218.4 ± 79.3 min vs. 91.1 ± 53.6 min) in the TLH group there was significantly more loss and longer time than in the TAH group, respectively. Dosage of meperidine (95.4 ± 43.2 mg vs. 236.8 ± 20.7 mg), pain score (5.4 ± 0.7 vs. 8.7 ± 1.3), length of hospital stay (3.2 ± 1.1 d vs. 5.3 ± 4.3 d) in the TLH group was significantly less than in the TAH group. The overall intraoperative complication rate was 30% (18 cases), the TLH group [43.33% (13 cases)] was significantly more than the TAH group [16.67% (5 cases)]. The overall postoperative complications rate was 45% (27 cases), TLH group [46.65% (14 cases)], TAH group [43.33% (13 cases)] which showed no significant difference. However, no serious complication caused reoperation or readmission. The most complications of the TLH group were 3 cases of vaginal cuff dehiscence, 4 cases of urinary tract infection, and a case of prolonged retaining Foley catheter for 2 weeks, no conversions to TAH. No patient in either group required a blood transfusion.*
Conclusion: *Based on the present results, in women with benign disease of pelvic organ, less than 12 weeks of gestation uterus and nonobese. TLH is a safety, efficacy, improvement in the patient's quality of life, cost-effectiveness procedure and also TLH is an alternative to laparotomy. Up-to-date knowledge of TLH procedure provides good outcome, although it takes longer operative time, more blood loss and higher cost. It offers several benefits over TAH such as smaller incision, less postoperative pain, earlier ambulation, shorter hospital stay, faster recovery time and does not increase more serious complications than TAH. Its cost effectiveness of TLH relative to the TAH procedure is finely balanced. TLH is the alternative and effective choice in the management of benign gynaecologic disease by a well trained gynaecologist and team.*

Keywords: *Total laparoscopic hysterectomy, TLH, Total abdominal hysterectomy, TAH, Efficacy*

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The first surgeon, Dr Ephrain McDowell (1771-1830), removed a pelvic mass as the patient was lying on his kitchen table. The patient recovered from the operation and lived many years afterwards. Others tried again, but the mortality rate was 25-50% until the early 20th century. Chales Clay (1801-1893), in 1839, introduced the world's first hysterectomy. It was not until 1853 that the first successful hysterectomy, which survived, was performed. Ellis Burnham performed 15 further hysterectomies. However, only 3 patients survived[1]. The introduction of new instruments, aneasthesia, antiseptics, anticoagulation and antibiotic

Correspondence to:
Sutasanasuang S, Department of Obstetrics and Gynecology, Somdejprasangkharaj 17th Hospital, Songphinong, Suphanburi 72110, Thailand.
Phone: 035-531-077, Fax: 035-532-271
E-mail: sudhesut@hotmail.com

agents led to decreased morbidity and mortality and an increase in the number of hysterectomies performed as a conventional procedure. At present, hysterectomy is one of the most frequently performed worldwide. Nine out of every ten hysterectomies are performed for benign disease that have a negative impact on quality of life[2]. Thus the increasing incidence of total abdominal hysterectomy (TAH) is an accepted effective treatment, easy for general gynaecologists, visibly scarring and associated with morbidity, but highly invasive procedure. Since its introduction in the 1940s, laparoscopic surgery has played an important role in gynaecology. Laparoscopy was used in minor operations, only tubal ligation, lysis adhesion and for diagnosis in the early, then for total laparoscopic hysterectomy (TLH) and bilateral salpingo-oophorectomy (BSO)[3-9]. Gradually, laparoscopy had become more feasibility and many companies have developed new instrumentation for more complicated procedures. In the past, gynaecologic surgeons had to decide whether to remove the uterus abdominally (TAH) or laparoscopy (TLH). The advantages of TLH over TAH[4,10-19] is small incision, less bowel ileus, no morbidity associated with abdominal incisions, early ambulation, less need for pain medication, tolerance from elderly patients[12,13,16], fewer difficulties in obese patients[3,5,13,16], good sexual functioning, shorter hospital stay and faster recovery time. However, TLH have some contraindications which include suspected severe adhesion, invasive cervical or endometrial cancer, large uterus (>16 weeks gestation) and suspected malignancy of ovaries. Nowadays, the TLH with or without SO or BSO seems a more safe and feasible alternative approach in benign gynaecologic disease patients. The surgeons and team must have experience and also skilled so the operation is warranted for safety and efficacy.

Although many studies[3-6,9,10,12-16,20-22] reported laparoscopic hysterectomy that had a good outcome from 1988 and developed the technique that can be is an outpatient setting in 1994[7,8], this procedure could not be performed in many hospitals in Thailand until 2000's[6,20] because of limitations of equipment and trained gynaecologic surgeons. TLH with or without oophorectomy (SO or BSO) can be performed now at Somdejprasangkharaj 17th hospital because of the advanced technology of many equipments, optical system, more experienced surgeons and the authors' team. The purpose of the present study was to evaluate the efficacy of TLH patients in result and safety compared to those of TAH in my hospital.

Material and Method

The retrospective comparative study included 30 patients who underwent TLH with or without salpingo-oophorectomy (SO or BSO) for benign gynaecologic disease at Somdejprasangkharaj 17th general hospital from June 2006 through May 2010. They were compared to 30 control patients who had TAH performed with or without salpingo-oophorectomy (SO or BSO) during the same period. The data were obtained from the author's departmental data base of gynaecologic patients and the information was verified via a detailed review of the medical records for each patient. The TLH was performed using the same surgeon and technique in all subjects. Controls were selected from the before or next patients who had TAH within 2 weeks. They were matched to cases with regard to age ($\pm$ 5 years) and body weight ($\pm$ 10 kg). All TLH cases were selected by the uterine size not larger than 12 weeks of gestation, no underlying cardiac or pulmonary disease, no contraindication of laparoscopic surgery and preoperative Hct level of > 30%. In addition the patients did not have extensive endometriosis, pelvic adhesion, fused hip joint and a narrow pubic arch with a stenotic vagina. The present study was approved by the human research ethics committee of Somdejprasangkharaj 17th hospital.

Introduced at Somdejprasangkharaj 17th hospital in 1998, diagnostic laparoscopy and laparoscopic tubal ligation were practiced. Because of the advanced development of emerging technologies for many surgical instruments, optical system, techniques and trained surgeons for laparoscopic gynaecologic surgery in this decade, TLH procedure has been performed in Somdejprasangkharaj Hospital since 2006. The TLH procedure in the present study was done by the same surgeon and techniques. The doctor also must take the patient's history, do a physical examination, and explain the risk of the surgery, the advantages and disadvantages of TLH and to be made aware of a possible switch to a TAH if a failure of the TLH procedure should occur. The patients gave written informed consent, advised about evaluation of the pain after the operation by verbal numeric score (VNS) and were admitted at least one day prior to their operation. Complete blood count (CBC), Chest x-ray (CXR), Electrocardiography (ECG), Fasting blood sugar (FBS) were included in the preoperative investigations as routine. In addition, the others were done as each indication. General aneasthesia with endotracheal intubation was employed in all cases. Patients were draped in a sterile fashion in a dorsal lithotomy position

using adjustable stirrups. One gram of ampicillin was given intravenously as prophylaxis about 30 to 60 minutes before starting surgery. A Foley catheter was inserted in the bladder, pelvic examination to confirm position, tenaculum was used to fixed cervix, a uterine elevator was placed and then pneumoperitoneum achieved with carbon dioxide 2-3 litres, with pressure not higher than 15 mmHg, by insertion of verres needle at subumbilical point. A 10-mm trocar was inserted through the subumbilical incision. Two 5-mm ports were placed approximately 4 to 5 cm below the umbilicus in the right and left paramedian positions for the operative instruments. The Trendelenburg position was done during the operation. Inspection of the whole upper and lower abdomen was done first to find the adhesion by 10-mm 0-degree laparoscope, then lysis adhesion was done until the adnexae could be freely mobilized. Both round ligaments, infundibulopelvic ligaments (BSO) or fallopian tubes, ovarian ligament (SO), broad ligaments, uterine vesssels, uterosacral ligaments and cardinal ligaments were dissiccated and cut by bipolar or plasma kinetic system (PKS) cutting forceps. Vesicouterine peritoneum was cut open with scissors and the bladder was dissected away from the uterus. The uterine elevator and tenaculum were removed and then inserted in the vaginal tube into the vagina, confirmed the good position from the intraperitoneal view by pushing the vaginal tube upward until locked with the fornix. The cul-de-sac and anterior fornix were cut into the vagina around the cervix completely by unipolar electrode hook, then the specimens were removed downward vaginally accompanyed with vaginal tube. The vaginal tube was reinserted into the vaginal canal again to block the gas leakage and to identify the vaginal cuff for assisting to suture the vaginal cuff by laparoscope device. Typically, horizontal mattress sutures of No. 0 braided polyglycolic acid were placed and tied about two or three stitches. The pelvic cavity was examined laparoscopically. All bleeding sites were coagulated and irrigated with isotonic solution until clear. Then the surgical instruments were removed and carbon dioxide was released from trocars. The abdominal wounds were closed with simple non-absorbable interrupted stitches. Finally, pelvic examination was done to confirm the tightness of vaginal cuff suturing.

All of these practiced, pain score evaluation (VNS), close observation in recovery room, meperidine for analgesic, off Foley catheter, CBC within 24 hours were included in post operative guideline. TAH with or without bilateral salpingo-oophorectomy was performed in the control group by the same surgeon using standard surgical techniques.

Interested variables in the present study included age, height, body weight, body mass index (BMI [calculated as weight in kilograms divided by height in meters squared]), parity, abortion, residence, occupation, indication for hysterectomy, previous abdominal surgery, adhesion, adnexae operation (SO or BSO). The authors also included hematocrit (%) before and after operation, estimated blood loss (cc), operative times, uterine weight (grams), analgesic dosage (mg of meperidine), pain score (verbal numeric score [VNS]) and length of hospital stay (days). Other variables were intraoperative complications and postoperative complications. The authors also looked for patients who were readmitted within 30 days of discharge and those who returned to be reoperated. In addition, estimated blood loss and operative times data were subdivided into 2 groups, TLH group only and TLH with or without SO or BSO group, for evaluation the affect from cooperative procedure. Statistical analyses were performed to evaluate associations between independent and dependent variables of interest. The present study used 30 cases in each group because of the least sample size was 27.29 cases which calculated from pilot study 20 cases in each group, based on quantitative, continuous data, 5% (2-tailed) error type I and 10% (1-tailed) error type II of principal variable. Statistical tests were considered significant at $p < 0.05$. Frequency, percent, paired t-tests, unpaired t-test, Chi-square tests and Fisher's exact test were used as appropriate.

Results

The present study included 60 patients requiring surgical management of hysterectomy with or without SO or BSO, assigned to TLH (30 cases) or TAH (30 cases), were carried out during June 2006 to May 2010. There were no differences in demographic and clinical characteristics variable between the two groups (Table 1). The average ages were 47.1 ± 8.2 (TLH) and 49.9 ± 6.3 (TAH) years. Most of the patients were from Suphanburi province (83.33%, 76.67%) and especially in Songphinong district (53.33%, 53.33%). None of the TLH procedures had to be converted to TAH and a reoperation, because the TLH patients had none of severe adhesion, large uterus (186.7 ± 89.2 gm) and obesity (BMI < 25.0%).

The indications for surgery (Table 2) were not significantly different in both groups. Most of the indications were endometriosis/adenomyosis, cervical

Table 1. Baseline demographic statistics

Valuable		TLH (n = 30)	TAH (n = 30)	p-value
Age (yr)		47.1 ± 8.2	49.9 ± 6.3	0.059
Height (cm)		146.2 ± 48.1	157.8 ± 65.4	0.412
Body weight (kg)		51.8 ± 8.8	55.1 ± 7.5	0.064
BMI (kg/m^2)		22.5 ± 4.2	23.8 ± 5.6	0.064
Parity		2.4 ± 0.8	2.6 ± 1.1	0.129
Abortion		0.5 ± 0.6	0.8 ± 0.8	0.078
Previous history of abdominal surgery		8 (26.67)	13 (43.33)	0.279
Residences	Muang Suphanburi	3 (10.00)	2 (6.67)	
	Songphinong district	16 (53.33)	16 (53.33)	0.891
	U-thong district	6 (20.00)	5 (16.67)	
	Others	5 (16.67)	7 (23.33)	
Occupation	Government official	9 (30.00)	11 (36.67)	
	Merchant	8 (26.67)	6 (20.00)	
	Employee & agriculture	4 (13.33)	6 (20.00)	0.670
	Housewife	5 (16.67)	4 (13.33)	
	Others	4 (13.33)	3 (10.00)	

p-value < 0.05
Data were present as mean ± SD, n (%)

Table 2. Indications for surgery

Diagnosis	TLH (%) n = 30	TAH (%) n = 30	Total all patients (%)
CIN3/CIS*	4 (13.33)	6 (20.00)	10 (16.67)
Endomtriosis/adenomyosis	12 (40.00)	14 (46.67)	26 (43.33)
Benign ovarian tumor	6 (20.00)	3 (10.00)	9 (15.00)
DUB**	6 (20.00)	3 (10.00)	9 (15.00)
Pelvic pain	2 (6.67)	4 (13.33)	6 (10.00)
Chi-square = 3.22, df = 4		p = 0.522	

Data were presented as n (%)
* CIN3 = cervical intraepithelial neoplasia grade III (severe dysplasia)/CIS = carcinoma in situ of cervix
** DUB = dysfunctional uterine bleeding

intraepithelial neoplasia grade III (CIN3)/carcinoma in situ of cervix (CIS), benign ovarian tumor, dysfunctional uterine bleeding (DUB), pelvic pain. Indication for surgery of CIN3 in the present study was used in the patients might be loss to follow-up and older than 40 years old.

Amount of blood loss (389.9 ± 125.4 cc vs. 275.5 ± 189.3 cc) and operative time (218.4 ± 79.3 min vs. 91.1 ± 53.6 min) in the TLH group were significantly more than in the TAH group. Postoperative Hct (34.0 ± 5.2% vs. 37.9 ± 6.3%), dosage of meperidine (95.4 ± 43.2 mg vs. 236.8 ± 20.7 mg), pain score (5.4 ± 0.7 vs. 8.7 ± 1.3), length of hospital stay (3.2 ± 1.1 d vs. 5.3 ± 4.3 d) in the TLH group were significantly less than in the TAH group. There was no significant difference in a number of peritoneal adhesion cases (16.67% vs. 26.67%), the value of preoperative Hct (38.4 ± 6.3% vs. 41.8 ± 8.5%), decreasing of Hct (4.4 ± 5.5% vs. 3.9 ± 7.4%), uterine weight (186.7 ± 89.2 gm vs. 223.0 ± 68.3 gm) in the two groups (Table 3). The

Table 3. Clinical characteristics statistics of both group

Variable	TLH (%) n = 30	TAH (%) n = 30	p-value Proportion test
Peritoneal adhesion	5 (16.67)	8 (26.67)	0.729
Variable	Mean	Mean	p-value (t score) df = 29 two-tailed 95% CI
Preoperative HCT (%)	38.4 ± 6.3	41.8 ± 8.5	0.05 71
Postoperative HCT (%)	34.0 ± 5.2	37.9 ± 6.3	0.010*
Decreasing of HCT	4.4 ± 5.5	3.9 ± 7.4	0.690
Estimated blood loss (CC)	389.9 ± 125.4	275.5 ± 189.3	0.000*
Operative time (min)	218.4 ± 79.3	91.1 ± 53.6	0.000*
Uterine weight (gm)	186.7 ± 89.2	223.0 ± 68.3	0.053
Dosage of meperidine (mg)	95.4 ± 43.2	236.8 ± 20.7	0.000*
Pain score (VNS)	5.4 ± 0.7	8.7 ± 1.3	0.000*
Length of hospital stay (d)	3.2 ± 1.1	5.3 ± 4.3	0.002*

p-value < 0.05* = significance
Data were present as mean ± SD, n (%)

meperidine at 50 mg was prescribed post-operatively for pain relief every 4-6 hours as requested by the patients if no contraindication. The average dosage of meperidine was found to be significantly lower in the TLH group than in the TAH group that were compatible with the pain score and length of hospital stay.

The overall intraoperative complication rate, as shown in Table 4, was 30% (18 cases), in the TLH group [43.33% (13 cases)] was significantly more than the TAH group [16.67% (5 cases)]. However, no serious complication caused reoperation but only one case in the TLH group had to have a Foley catheter retained for 2 weeks longer. The overall postoperative complications rate was 45% (27 cases), those were 46.65% (14 cases) and 43.33% (13 cases) in the TLH and TAH groups respectively, these showed no significant difference. The most postoperative complications of the TLH group were 3 cases of vaginal cuff dehiscence, which was the most disturbing to the patients and 4 cases of urinary tract infection.

The TLH group was performed in co-operation with adnexal surgery 19 cases (66.33%), two cases had ovarian cystectomy, compared to 21 cases (70.00%) in the TAH group that was not significantly different (Table 5). The TLH group was divided into with or without adnexal surgery, then analysed this factor effect to prolong the operative times or promote more amount of blood loss. The operative time and amount of blood loss in the TLH group only were not significantly different in TLH with and without adnexal surgery group (Table 5). No patient in either group had a readmission and required a blood transfusion.

Discussion

Hysterectomy by TAH is the second most common major operation and conventional procedure[1,2]. These numbers are expected to increase in Thailand, creating a major economic effect and the need to look for others conservative and less invasive options compared with the traditional method. Because of the advance of medical investigation especially ultrasound, colposcopy, accuracy of pathological science, the patients can be early diagnosed and increasingly hysterectomized[1-3]. The development of laparoscopic surgery has certainly been the most important step forward in gynaecologic surgery over the past 30 years[3]. The feasibility of total hysterectomy via laparoscopy has been proved today because laparoscopic visualization of the pelvic cavity enables surgeons to lyse pelvic adhesion, resect pathological adnexae and facilitated hysterectomy with good outcome, less pain and less recovery time than laparotomy. In the present study, the authors compared the first 30 cases of TLH performed in Somdejprasangkharaj 17th hospital with another 30 patients who underwent TAH at the same period of before or next 2 weeks. Patients were matched in terms of the time to achieved operation, age and body weight

Table 4. Intraoperative and postoperative complications

Intraoperative Complications	TLH (%) n = 30	TAH (%) n = 30	p-value Fisher's exact test
Bleeding > 350 cc	8 (26.67)	4 (13.33)	0.333
Bowel Trauma	2 (6.67)	1 (3.33)	1.000
Bladder Trauma	1 (3.33)	0 (0.00)	0.313
Ureteral Trauma	2 (6.67)	0 (0.00)	0.492
All types of Intraoperative complications 18 (30%)	13 (43.33)	5 (16.67)	0.047*
Postoperative Complications	TLH (%) n = 30	TAH (%) n = 30	p-value Fisher's exact test
Fever	1 (3.33)	2 (6.67)	1.000
Surgical Wound infection	3 (10.00)	2 (6.67)	1.000
Urinary Tract Infection	4 (13.33)	3 (10.00)	1.000
Surgical Wound Hematoma	2 (6.67)	1 (3.33)	1.000
Bowel Ileus	1 (3.33)	4 (13.33)	0.353
Vaginal cuff dehiscence	3 (10.00)	0 (0.00)	0.237
Atelectasis	0 (0.00)	1 (3.33)	0.492
All types of Postoperative complications 27 (45%)	14 (46.67)	13 (43.33)	1.000

p-value < 0.05* = significance
Data were presented as n (%)

Table 5. Co-operative of adnexal operation (SO or BSO) in both group, amount of blood loss and operative in TLH with or without additional adnexal surgery

Co-operative procedure	TLH (%) n = 30	TAH (%) n = 30	p-value
SO or BSO	19 (66.33)	21 (70.00)	0.584
No oophorectomy	11 (36.67)	9 (30.00)	
Proportion		p = 0.784	
TLH group only	No oophorectomy n = 11	SO or BSO n = 19	p-value
Operative time (min)	193.2 ± 88.4	221.9 ± 104.9	0.115
Estimated blood loss (cc)	357.5 ± 113.7	392.1 ± 82.3	0.073

Data were presented as n (%) and mean ± SD

and they did not have significant difference in demographic characteristics, but subjects could still differ in other unknown aspects, as the allocation of treatment was not randomized. The uterus size larger than 12 weeks of gestation, age more than 60 years, nonobese patients (BMI > 25.0 kg/m^2), severe pelvic adhesion and relaxation of urogenital organ were not included in the present study which might be a confounding factor in assessment of outcome and reduce sample selection bias.

The most comparative studies of laparoscopic hysterectomy with TAH in Thailand were laparoscopic assisted vaginal hysterectomy (LAVH)[6,20-22], but TLH technique in the present study was used to compare

with TAH. Most hysterectomies currently requiring an abdominal route maybe performed with laparoscopic dissection in part or all of abdominal portion followed by removal of the uterus vaginally (LAVH). TLH involves the entire operation including suturing of the vaginal vault done laparoscopically. It is a recent technique and allows the surgeon the best option provided patient safety. However, the only one factor that makes the TLH more difficult than LAVH was suturing the vaginal cuff laparocopically that affect to longer operative times than LAVH[6,9,13,20-22], both techniques show the same quicker recovery, less complication, less patient discomfort and less post operative pain than TAH.

The TLH or LAVH requires an operative time of about 100-240 minutes[3,4,6,9,12,14,19-22] that is longer than the TAH and costs the patient double because of it requiring both special equipment and advanced skilled surgeon[11,12,16,17,21,22]. The present results of main outcome, amount of blood loss, operative times, severity of pain, length of hospital day, complications, agreed with many previous studies[3,6,9,10,12,20-22]. Amount of blood loss, operative times in the TLH group were somewhat more than the TAH group because of the complicated and nonfamiliarized procedure. But the operative time of the series (114 ± 33.2 min) is not longer than those times reported in most Thai[6,20-22] and international literature, because of the new plasma kinetic system (PKS) cutting forceps that can coagulated to stop bleeding and cut the tissue at the same time which offer safety, efficacy and time saving.

The complication rate in the present series: intraoperative was 30% (18 cases) for all patients, 43.3% (13 cases) in TLH group, 16.67% (5 cases) in TAH group and postoperative was 45% (27 cases) for all patients, 46.67% (14 cases) in TLH group, 43.33% (13 cases) in TAH group, all of these look a high rate but they were not serious complications and affect for worse outcome. Although intraoperative complications in TLH group was more significant than TAH, it had no severe morbidity, reoperation and readmission case or prolonged course of treatment. Most intraoperative complication of the present study was bleeding more than 350 cc, 26.67% in TLH group and 13.33% in TAH group, it showed that incidence of blood loss in TLH was more than TAH group. Howerver, amount of estimated blood loss in TLH group (389.9 ± 125.4 cc) was more significant than TAH group (275.5 ± 189.3), the decreasing of Hct had no significant difference. That might not be too much and body physiology could compensate, and no case needed a blood transfusion, compatible with other Thai studies[6,20-22]. Although TLH is a difficult procedure, additional SO or BSO was not increased blood loss, operative time and serious complications more than TAH. The complications rate of other studies were 3.5-23% and common complications were bladder injury, UTI, wound infection and bowel damage as reported in Thai and international journals[3-6,8,10,16,17,19-22].

There was no case for being converted to laparotmy secondary to intraoperative complications[20-22]. The most commonly reported reason for conversion was severe adhesion[3,15,17], large uterus[10] and obese patient[12], those were not included in the present study. In some studies, the learning curve clearly showed more experienced surgeons, the shorter the operative time, less blood loss and fewer complications[6,14,22]. In addition, a published random study comparing laparoscopic hysterectomy and abdominal hysterectomy demonstrated that surgery for laparoscopy hysterectomy can take the same time as for abdominal hysterectomy[14,22]. These reasons might encourage other surgeons to look for alternatives to laparotomy and laparoscopic hysterectomy. Arguments often mentioned hampering the implementation of laparoscopic procedures are the high operative costs and the long learning curve. However, despite the fact that operative costs are higher for laparoscopy due to expensive disposables, it might be that the overall costs will be finely balanced between both procedures due to reduction of morbidity and shorter recovery time plus shorter hospital stay[11,12,16,17,20-22].

In conclusion, based on the present results, in women with benign disease of pelvic organ, less than 12 weeks of gestation uterus and nonobese. TLH has safety, efficacy, improvement in the patient's quality of life, cost-effectiveness procedure and also TLH is an alternative to laparotomy. Up-to-date knowledge of TLH procedure provides good outcome, although it takes longer operative time, more blood loss and higher cost. It offers several benefits over TAH such as smaller incision, less postoperative pain, earlier ambulation, shorter hospital stay, faster recovery time and does not increase more serious complications than TAH. Its cost effectiveness of TLH relative to the TAH procedure is finely balanced. TLH is the alternative and effective choice in the management of benign gynaecologic disease by well trained gynaecologists and team.

Potential conflict of interest

None.

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การศึกษาเปรียบเทียบผลการรักษาผ่าตัดมดลูกผ่านกล้องเทียบกับผ่าตัดเปิดหน้าท้อง

สุเทพ สุทัศนทรวง

วัตถุประสงค์: *เพื่อศึกษาเปรียบเทียบประสิทธิภาพ และความปลอดภัยของการผ่าตัดมดลูกผ่านกล้องกับการผ่าตัดมดลูกแบบเปิดหน้าท้อง*

รูปแบบการศึกษา: *Retrospective comparative study*

สถานที่ศึกษา: *แผนกสูติ-นรีเวช โรงพยาบาลสมเด็จพระสังฆราชองค์ที่ 17 สุพรรณบุรี*

ประชากรศึกษา: *ผู้ป่วยที่ได้รับการผ่าตัดมดลูกผ่านกล้อง และผ่าตัดมดลูกแบบเปิดหน้าท้อง (กลุ่มควบคุม) ตั้งแต่เดือนมิถุนายน พ.ศ. 2549 ถึง เดือนพฤษภาคม พ.ศ. 2553 จำนวนกลุ่มละ 30 ราย*

วัสดุและวิธีการ: *ทบทวนและวิเคราะห์ข้อมูลจากแบบฟอร์มที่ออกแบบไว้ และข้อมูลจากบันทึกเวชระเบียนของผู้ป่วย ที่ได้รับการผ่าตัดมดลูกจาก 2 กลุ่ม คือ กลุ่มที่ได้รับการผ่าตัดมดลูกผ่านกล้อง และกลุ่มที่ได้รับการผ่าตัดมดลูก แบบเปิดหน้าท้องกลุ่มละ 30 ราย และทำการจับคู่ผู้ป่วยทั้งสองกลุ่มโดยยึดผู้ป่วยที่ผ่าตัดมดลูกแบบเปิดหน้าท้อง รายที่ทำก่อนหรือหลังรายที่ผ่าตัดมดลูกผ่านกล้องภายใน 2 สัปดาห์ และ อายุแตกต่างกัน $\pm$ 5 ปี น้ำหนักแตกต่างกัน $\pm$ 10 กก.*

ผลการศึกษา: *ไม่มีความแตกต่างกันในลักษณะของประชากรที่ศึกษาระหว่างทั้งสองกลุ่ม ข้อบ่งชี้สำหรับการผ่าตัดคือ โรคทางนรีเวชที่สามารถรักษาได้ด้วยการผ่าตัดมดลูก หรือ รังไข่หนึ่งข้างหรือสองข้างร่วมด้วย โดยไม่มีความแตกต่างกันของตัวแปรคือ อายุเฉลี่ย 47.1 $\pm$ 8.2 ปี เทียบกับ 49.9 $\pm$ 6.3 ปี ดัชนีมวลกาย 22.5 $\pm$ 4.2 กก./ม^2 เทียบกับ 23.8 $\pm$ 5.6 กก./ม^2 ค่าความเข้มข้นเลือดก่อนผ่าตัด 38.4 $\pm$ 6.3% เทียบกับ 41.8 $\pm$ 8.5% (ไม่มีรายใดมีภาวะซีด) ขนาดมดลูกเล็กกว่าการตั้งครรภ์ 12 สัปดาห์ (186.7 $\pm$ 89.2 กรัม เทียบกับ 223.0 $\pm$ 68.3 กรัม) แต่ปริมาณเลือดที่เสียขณะผ่าตัด (389.9 $\pm$ 125.4 มิลลิลิตร เทียบกับ 275.5 $\pm$ 189.3 มิลลิลิตร) ในกลุ่มผ่าตัดผ่านกล้อง (TLH) มีมากกว่า และระยะเวลาในการผ่าตัด (218.4 $\pm$ 79.3 นาที เทียบกับ 91.1 $\pm$ 53.6 นาที) ในกลุ่มผ่าตัดผ่านกล้อง (TLH) นานกว่ากลุ่มผ่าตัดแบบเปิดหน้าท้อง (TAH) ส่วนขนาดของยาแก้ปวด meperidine (95.4 $\pm$ 43.2 มก. เทียบกับ 236.8 $\pm$ 20.7 มก.) ค่าคะแนนความปวด (5.4 $\pm$ 0.7 เทียบกับ 8.7 $\pm$ 1.3) ระยะเวลาในการนอนโรงพยาบาล (3.2 $\pm$ 1.1 วัน เทียบกับ 5.3 $\pm$ 4.3 วัน) ในกลุ่มผ่าตัดผ่านกล้อง (TLH) มีค่าตัวแปรเหล่านี้น้อยกว่ากลุ่มผ่าตัดเปิดหน้าท้อง (TAH) ภาวะแทรกซ้อนขณะผ่าตัดรวม คือร้อยละ 30 (18 ราย) ซึ่งกลุ่มผ่าตัดผ่านกล้อง (TLH) [ร้อยละ 43.33 (13 ราย)] มีมากกว่ากลุ่มผ่าตัดเปิดหน้าท้อง (TAH) [ร้อยละ 16.67 (5 ราย)] ภาวะแทรกซ้อนหลังผ่าตัดรวม คือ ร้อยละ 45 (27 ราย) ซึ่งกลุ่มผ่าตัด ผ่านกล้อง (TLH) [ร้อยละ 46.6% (14 ราย)] กับกลุ่มผ่าตัดเปิดหน้าท้อง (TAH) [ร้อยละ 43.33 (13 ราย)] พบว่าไม่แตกต่างกัน แต่อย่างไรก็ตามไม่มีภาวะแทรกซ้อนรุนแรงใด ๆ ในทั้งสองกลุ่ม จนทำให้ผู้ป่วยต้องรับการผ่าตัดใหม่ หรือ กลับมานอนโรงพยาบาลซ้ำ ภาวะแทรกซ้อนที่พบได้มากของกลุ่มผ่าตัดผ่านกล้อง (TLH) คือแผลแยกที่ vaginal cuff 3 ราย ติดเชื้อของระบบทางเดินปัสสาวะ 4 ราย และมีผู้ป่วยเพียงรายเดียวที่ต้องคาสายสวนปัสสาวะนาน 2 สัปดาห์ ไม่มีผู้ป่วยรายใดต้องเปลี่ยนแผนการผ่าตัดผ่านกล้องไปเป็นผ่าตัดเปิดหน้าท้อง หรือ ต้องให้เลือดทดแทน*

สรุป: *จากผลการศึกษานี้ โดยยึดข้อมูลของผู้ป่วยหญิงที่มีขนาดมดลูกไม่เกินการตั้งครรภ์ 12 สัปดาห์ของการตั้งครรภ์ ไม่อ้วน ซึ่งเป็นโรคทางนรีเวชที่สามารถรักษาได้โดยรับการผ่าตัดมดลูกหรือร่วมกับตัดรังไข่ โดยการผ่าตัดมดลูกผ่านกล้อง (TLH) นั้นถือว่ามีความปลอดภัย มีประสิทธิภาพ สามารถเพิ่มคุณภาพชีวิตของผู้ป่วยได้ ถือว่าเป็นหัตถการที่มีประสิทธิผล ต่อราคาสูง และยังจัดว่าเป็นการผ่าตัดทางเลือกหนึ่งของการผ่าตัดมดลูกเปิดหน้าท้อง จากความรู้ในปัจจุบันของการผ่าตัดมดลูกผ่านกล้องพบว่าสามารถให้ผลที่ดีถึงแม้จะใช้ระยะเวลาในการผ่าตัดนานกว่า เสียเลือดมากกว่า และแพงกว่าการผ่าตัดเปิดหน้าท้องก็ตาม แต่ก็ให้ผลการรักษาที่ดีกว่าคือ แผลเล็กกว่า ความปวดหลังผ่าตัดที่น้อยกว่า สามารถเคลื่อนไหวและการฟื้นตัวหลังผ่าตัดเร็วกว่า จำนวนวันที่นอนโรงพยาบาลน้อยกว่า รวมถึงมีภาวะแทรกซ้อน ที่รุนแรงน้อยกว่า ดังนั้นการผ่าตัดมดลูกผ่านกล้องจึงจัดว่าเป็นการผ่าตัดที่คุ้มค่า และมีประสิทธิภาพที่สมดุลกับการผ่าตัดเปิดหน้าท้องจึงถือเป็นทางเลือกของการรักษาที่มีประสิทธิภาพสำหรับโรคทางนรีเวชโดยแพทย์ และทีมงานที่มีความเชี่ยวชาญ*