

Total Laparoscopic Hysterectomy Versus Total Abdominal Hysterectomy Due to Benign Genital Lesions in Obese Patients: Randomized Clinical Trial

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Abstract

Background: Hysterectomies are considered as the most common non-obstetric operation which performed in the United States and Western countries, with 23.3% of women aged 18 years or older undergoing the procedure. Abnormal uterine bleeding (45 %), uterine prolapse (14.5 %), endometriosis (11 %), and malignancies of the genital tract (10%) are the most common reasons for hysterectomy. Obesity is the common risk factor for these diseases. Obesity prevalence has doubled since 1980 and has reached ‘epidemic’ levels across the world, challenging health care systems and economies in developed and developing countries. According to the WHO, with 1.3 billion overweight (25 < body mass index [BMI] < 30) people and 600 million obese (BMI > 30) people in the world, the obesity rate exceeds 10% for both genders. In general, open surgery in obese patients has a number of drawbacks and has a budgetary impact. Therefore, the obese patients should undergo laparoscopic hysterectomies which has less adverse impacts on health and economy.

Aim of the Work: The aim of this study is to compare between total laparoscopic hysterectomy (TLH) and total abdominal hysterectomy (TAH) for benign genital diseases in the obese patients as regard to safety in the following parameters i.e. operative blood loss, conversion to laparotomy/return to theatre, postoperative hospital stay, the operative time, need for blood transfusion, organs injuries (bladder/ureter/bowel), postoperative vault hematoma, postoperative febrile disease, surgical site infection and wound dehiscence, postoperative pain and quality of life concerning about urinary, rectal and sexual functions.

Patients and Methods: This study was conducted at Ain Shams University Maternity Hospital. It included 20 obese patients undergoing total laparoscopic hysterectomy (TLH) in group A and another 20 obese patients undergoing total abdominal hysterectomy (TAH) in group B. The study duration was from July 2019 to July 2020.

Results: In this study the obese patients with benign pathology in the genital tract were divided into two groups according to approach of hysterectomy: group A contained 20 TLAs and group B contained 20 TAHs. The comparison between both groups showed statistically insignificant difference ($p>0.05$) as regard to clinic-demographic characteristics e.g., age, body mass index, parity, medical history, surgical history and indication of hysterectomy. However, TLH had less operative blood loss than TAH ($p<0.001$). As well, TLH was less painful than TAH as illustrated by subjective visual pain scale at 6h and 24h after surgery ($p<0.001$) and subjective postoperative number of analgesic ampoules ($p<0.001$). Although TLH had shorter postoperative hospital stay than TAH ($p<0.001$), the operating surgeon consumed significantly more time during the procedure in TLH than TAH ($p<0.001$). In contrast, there was no statistically significance difference between both groups regarding to need for blood transfusion, organs injuries (bladder/ureter/ bowel), conversion to laparotomy or re-operation, postoperative vault hematoma, postoperative febrile disease, wound complications (cellulitis/pus/dehiscence/hernia) and quality of life ($p>0.05$).

Conclusion: The study shows that total laparoscopic hysterectomy is a safe procedure for benign lesions of the genital tract in obese patients. It has physical, technical and economic advantages. Therefore, it can replace total abdominal hysterectomy with no considerable drawbacks.

Key words: total laparoscopic hysterectomy; total abdominal hysterectomy; obesity; benign gynecological disease

Introduction

The surgical removal of the uterus, known as a hysterectomy, can be done in a variety of methods. Vaginal hysterectomy is the oldest known method. Although there are medical documents of vaginal hysterectomy for prolapse dating back to 50 BC, the first planned hysterectomy was done by KonradLangenbeck, Surgeon General of the Hannoverian army. The first abdominal hysterectomy was performed in 1809 by Ephraim McDowell for a woman of five who had a huge ovarian lump on her kitchen table. Then, Harry Reich in Pennsylvania conducted the first laparoscopic hysterectomy in 1988 [1].

Today, minimally invasive hysterectomy (MIH) techniques offer less discomfort, a shorter hospital stay, faster recovery, and smaller scars. These procedures include laparoscopic supracervical hysterectomy (LSH), total laparoscopic hysterectomy (TLH), laparoscopically-assisted vaginal hysterectomy (LAVH), vaginal hysterectomy (VH) and Robotic-assisted hysterectomy (RAH) [2].

The surgical approach of hysterectomy is influenced by patient characteristics e.g. the reason for hysterectomy, uterine size, descent of the uterus, presence of diseased tissues surrounding the uterus, previous surgery in the pelvic region, obesity, history of pregnancy, the possibility of endometriosis, or the need for an oophorectomy [3].

When vaginal surgery is not possible, the laparoscopic surgery has several advantages; however, it takes longer time [3] to abdominal hysterectomy, total laparoscopic hysterectomy has a short inpatient treatment duration and a quicker return to normal activities; plus, it allows the possibility to diagnose and treat other pelvic diseases. However, it necessitates a high level of laparoscopic surgical expertise and there is an increased length of surgery [4] (King et al., 2016).

For obese persons, the laparoscopic technique is the preferable method [5] (Blikkendaal et al., 2015) particularly in light of the rising prevalence of obesity in recent decades; in Europe fluctuating between 6 and 37 % [6], and in the United States, the prevalence of BMI ≥ 35 kg/m² remained relatively stable around 15 % [7].

Aim Of the Work

The aim of this study is to compare between total laparoscopic hysterectomy (TLH) and total abdominal hysterectomy (TAH) for benign genital diseases in the obese patients as regard to safety in the following parameters i.e. operative blood loss, conversion to laparotomy/return to theatre, postoperative hospital stay, the operative time, need for blood transfusion, organs injuries (bladder/ureter/bowel), postoperative vault hematoma, postoperative febrile disease, surgical site infection and wound dehiscence, postoperative pain and quality of life concerning about urinary, rectal and sexual functions.

Patients And Methods

- **Type of Study:** Interventional comparative randomized controlled trial.
- **Study Setting:** Ain Shams University Maternity Hospital
- **Study Period:** From July 2019 to July 2020
- **Study Population:** obese women undergoing hysterectomy with/without salpingo-oophorectomy due to benign lesions of the genital tract

Inclusion and exclusion criteria: During the pre-selection phase (after admission into the Hospital) inclusion and exclusion criteria were applied.

Inclusion Criteria: All obese women (BMI equals or is greater than 30) with benign lesion of the genital tract (fibroid uterus, endometrial hyperplasia without atypia, non-dysfunctional uterine bleeding, uterine prolapse) and aged between 35 and 60 years

Exclusion Criteria: Gynecological malignancy, Chronic diseases (e.g. hypertension, diabetes mellitus), Bleeding tendency (e.g. coagulopathies, thrombocytopenia), any medical condition worsened by pneumoperitoneum or Trendelenburg position e.g. cardiac or pulmonary diseases.

- **Sampling Method:** Simple randomization which allocated patients in such way that each has an equal chance of being advocated to any particular group, the number was chosen guided by a computer-generated list.
- **Sample Size:** 40 obese patients undergoing hysterectomy due to benign pathology of genital tract.
- **Study Methodology:** Suitable women were invited to participate in the study then a verbal and informed consent was obtained from them. When the patient's consent was obtained, they were considered to be included into the study.

All women included in the study were subjected to the following:

1. Verbal consent: had been obtained.

2. Careful and detailed history: for fulfillment of the inclusion and exclusion criteria including:

- Personal history: Name, age, occupation, residence and special habits of medical importance.
- Obstetric history: Parity and gravidity.
- Past history: History of any medical disorder or surgical history.
- History of present illness.

3. Examination of the women:

General examination:

- Body mass index (kg/m²) should be calculated to triage having 30 or more into the study
- Pulse, blood pressure, temperature and respiratory rate.

Abdominal examination:

- Inspection for pelvi-abdominal mass and scars.
- Palpation for uterine size

Pelvic examination

Bimanual examination

- Determination of mobility, size, tenderness and consistency of the uterus.

4. Transvaginal ultrasound:

- Estimation of uterine size.
- Diagnosis of any other pelvic pathology

5. Cervical smear: All patients scheduled for hysterectomy had a cervical smear done at the Diagnostic Unit for Early Cancer Detection at Ain Shams University Maternity Hospital to exclude cervical microinvasion and atypical hyperplasia.

6. Counselling:

All patients were advised regarding the benefits and drawbacks of both procedures.

7. Blood preparation: 2 units of whole blood were prepared for each patient undergoing hysterectomy either abdominal or laparoscopic.

8. Endometrial biopsy: to exclude atypia in endometrial hyperplasia

9. Routine preoperative laboratory investigations:

- Complete blood count
- Prothrombin time
- Activated partial thromboplastin time
- Liver function tests

- Kidney function tests

- **The cases that had fulfilled the criteria was randomly divided into two groups:**

- ❖ *Group (A):* 20 women assigned to undergo total laparoscopic hysterectomy (TLA).
- ❖ *Group (B):* 20 women scheduled to undergo total abdominal hysterectomy (TAH).

- **Both procedures were compared regarding:**

1. *Intraoperative blood loss:* through assessment of blood loss in TAH by measuring the suction volume and swab weight by the following equation: The amount of blood loss (ml) = [(weight of the used towels and gauzes– weight of the towels and gauzes prior to the surgery) + the volume sucked in the suction bottle in ml] provided that conversion of weight of towels and gauzes by (gm) to volume by (ml) by equation (1000 gm = 962 ml) [8] (Michael, 2004). The assessment of blood loss in TLH is by measuring the suction volume.

2. *The operating time:* which reflects difficulty of the procedure. It was calculated from the time of entry of primary trocar in case of TLH, and from the time of creating the skin incision in case of TAH until the last cutaneous closure sutures.

3. *Intra-operative injuries:* bowel, bladder or ureter injuries.

4. *Need for blood transfusion.*

5. *Return to theater:* need for laparotomy or re-operation

6. *Postoperative vault hematoma:* detected by postoperative 48-hours transvaginal ultrasonography

7. *Postoperative febrile illness (postoperative fever):* refers to an elevated body temperature ($\geq 38.5^{\circ}\text{C}$) occurring after the surgical procedure during hospitalization.

8. *Postoperative pain:* assessed using a linear 10-cm visual analogue scale, ranging from 0 (no pain) to 10 (unbearable pain), at 6 and 24 hours after surgery. Besides, the type and number of postoperative analgesic ampoules should be mentioned.

9. *Duration of hospital stay:* The case of delayed discharge should be documented.

10. *Wound complications:* sepsis, cellulitis, dehiscence.

11. *Quality of life:* Abnormal rectal, urinary or sexual function at 3 months postoperatively

- * **Evaluation Of The Outcomes:**

- The primary outcome:
 - Intraoperative gravimetric assessment of measured blood loss
- The secondary outcomes:
 - Conversion to laparotomy or re-operation
 - Postoperative hospital stay
 - Operative time.
 - Need for blood transfusion.
 - Urinary tract injuries e.g. bladder and ureter.
 - Bowel injury.
 - Vault hematoma.
 - Postoperative febrile disease.
 - Surgical site infection and wound dehiscence
 - Postoperative pain.
 - Quality of life concerning about urinary, rectal and sexual functions.

Data collection: The above-mentioned data were collected in a data sheet and the operative details were recorded. The women had been received the normal care of the post-operative management by the attending health professional. Statistical analysis was blinded to group allocation to avoid research bias.

Ethical considerations:

Ethics: The study had got approval from Ethics & Research Committee (ERC), Ob/Gyn department, Faculty of Medicine, Ain Shams University. The clinical research study conducted in accordance with the current approved clinical protocol and relevant policies, requirements and regulations of the Ain shams University Maternity Hospital.

Consent procedure: All of the patients were given the opportunity to give their informed consents. The investigator made an appropriate informed consent process in place to ensure that potential research subjects or their authorized representatives were fully informed about the nature and aim of the clinical study, the potential risks and benefits of study participation, and their rights during the study. The investigator obtained the written signed informed consent of each subject or their authorized representative before performing any specific procedures. The original signed form of informed consent was kept by the investigator.

Subject confidentiality: To maintain subject confidentiality, all evaluation forms, reports and other records did not include unique personal data.

Statistical analysis

The collected data revised, coded, tabulated and introduced to a PC using Statistical package for Social Science (SPSS 15.0.1 for windows; SPSS Inc, Chicago, 2001). Data was presented as mean and standard deviation (\pm SD) for quantitative parametric data, and median and interquartile range for quantitative non-parametric data. Frequency and percentage were used for presenting qualitative data. Suitable analysis was done according to the type of data obtained. Student T test or Mann Whitney test was used to analyze quantitative data while chi square test and fisher exact test was used to analyze qualitative data.

Results

The data of 40- obese- women study group who had hysterectomy with/without salpingoophorectomy due to benign lesions of the genital tract was statistically analyzed and compared regarding to demographic data, surgical and medical history, perioperative blood loss, the operating time, visceral injuries (bowel/bladder/ ureter), need for blood transfusion, need for laparotomy, vault hematoma, postoperative fever (temperature $\geq 38.5^{\circ}\text{C}$), postoperative pain, duration of hospital stay, wound complications (sepsis/cellulitis/dehiscence), and quality of life (rectal, urinary and sexual function).

Patient demographic characteristics in both groups showed no statistically significant difference as regard to age (means of TLH group 49.9 years &TAH group 50.6 years, $p=0.698$), parity (medians of TLH group 2.5 &TAH group 3.00, $p=0.068$) and body mass index (means of TLH group 33.13kg/m²&TAH group 32.92kg/m², $p=0.746$). Plus, the medical and surgical histories were of no statistical significance ($p>0.05$).

As regard to the hysterectomy indication, the most common etiology for hysterectomy was fibroid which represented 15 cases (37.5%). Other causes included: postmenopausal bleeding 22.5% (9 cases), endometrial hyperplasia 12.5% (5 cases), ovarian cyst 12.5% (5 cases), adenomyosis 12.5% (5 cases) and postmenopausal endometrial polyp 2.5 % (1 case). Statistically, however, there was no significant variation among the etiologies distribution between TLH group and TAH group.

Regarding to perioperative blood Loss (ml) through both routes, the study showed that bleeding through abdominal route was markedly more than bleeding through laparoscopic route (the mean of TLH group 292.3 ± 24.75 ml / the mean of TAH group 394.2 ± 75.39) with P value (< 0.001) indicating a high significant statistical difference.

perioperative blood Loss (ml)	Group A (TLH) (n = 20)	Group B (TAH) (n = 20)
Mean \pm SD (ml)	292.3 \pm 24.75	394.2 \pm 75.39
Range (ml)	255 – 343	255 – 553
P value	< 0.001	

Table 1: Comparison between Group A (TLH) and Group B (TAH) as regard to perioperative blood Loss (ml)

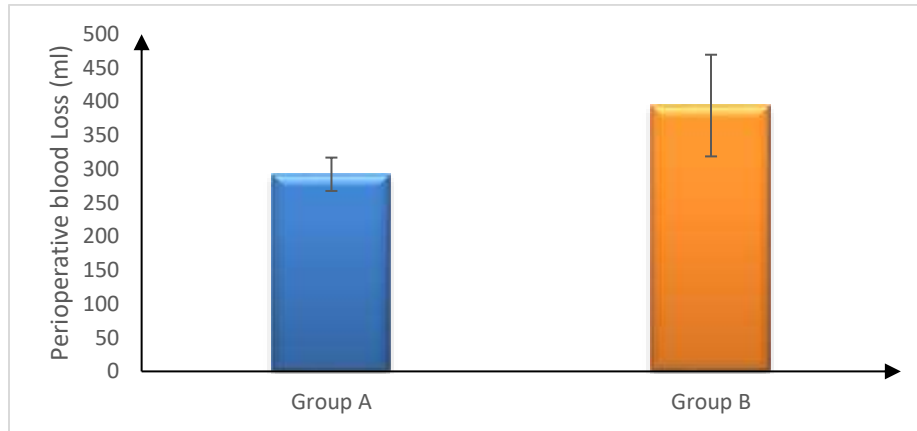


Figure 1: Comparison between Group A (TLH) and Group B (TAH) as regard to perioperative blood Loss (ml)

The operating time of the procedure starting from entry of primary trocar in case of TLH and incising the skin in case of TAH until the last cutaneous closure sutures was compared statistically between both groups. The abdominal route was much easier than the Laparoscopic procedure because the operating time of TLH (the mean 115.2 ± 10.01 min) was more prolonged

than the operating time of TAH (the mean 87.85 ± 11.67 min). The P value (<0.001) represented a high significance of statistical difference. The prolonged operating time was reflected by the nature of the procedure itself; however, surgeon expertise and instrumental quality may play a role.

The operating time (min)	Group A (TLH) (n = 20)	Group B (TAH) (n = 20)
Mean \pm SD(min)	115.2 ± 10.01	87.85 ± 11.67
Range(min)	99 – 129	69 - 110
P value	< 0.001	

Table 2: Comparison between Group A (TLH) and Group B (TAH) as regard to the operating time

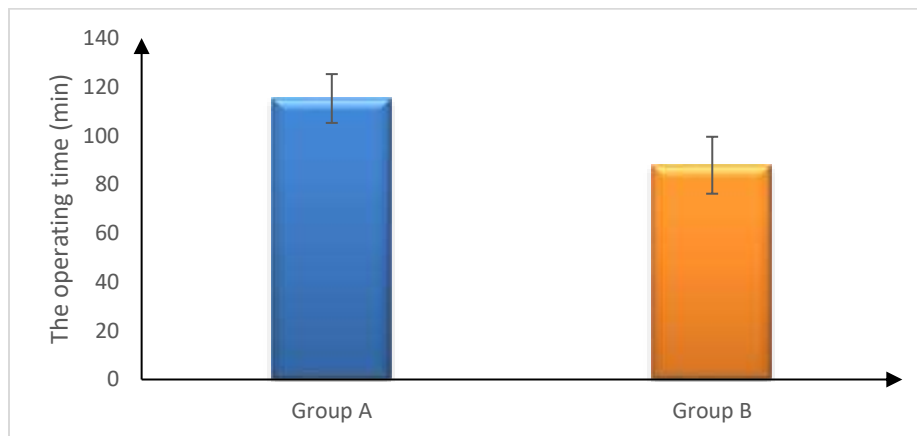


Figure 2: Comparison between Group A (TLH) and Group B (TAH) as regard to the operating time (min)

The linear 10-cm visual analogue scales i.e., ranging from 0 (no pain) to 10 (unbearable pain), to assess the post-operative pain at 6 and 24 hours after surgery, were statistically evaluated. At six hours post-operatively, the mean of pain score was 6.20 ± 0.83 in TLH group and 8.35 ± 1.04 in TAH. At twenty-four hours after the surgery, the mean of the visual analogue scale was

4.50 ± 1.36 in group A and 6.90 ± 0.97 in group B. This indicated that pain due to TLH was markedly less than pain due to TAH manifested by P value less than 0.001. As a result, TLH had clinically and statistically high significant difference from TAH as regard to pain.

Subjective pain score		6 h	24 h
Group A (TLH)	Mean	6.20	4.50
	SD	0.83	1.36
Group B (TAH)	Mean	8.35	6.90
	SD	1.04	0.97
P value		< 0.001	< 0.001

Table 3: Comparison between Group A (TLH) and Group B (TAH) as regard to subjective pain score

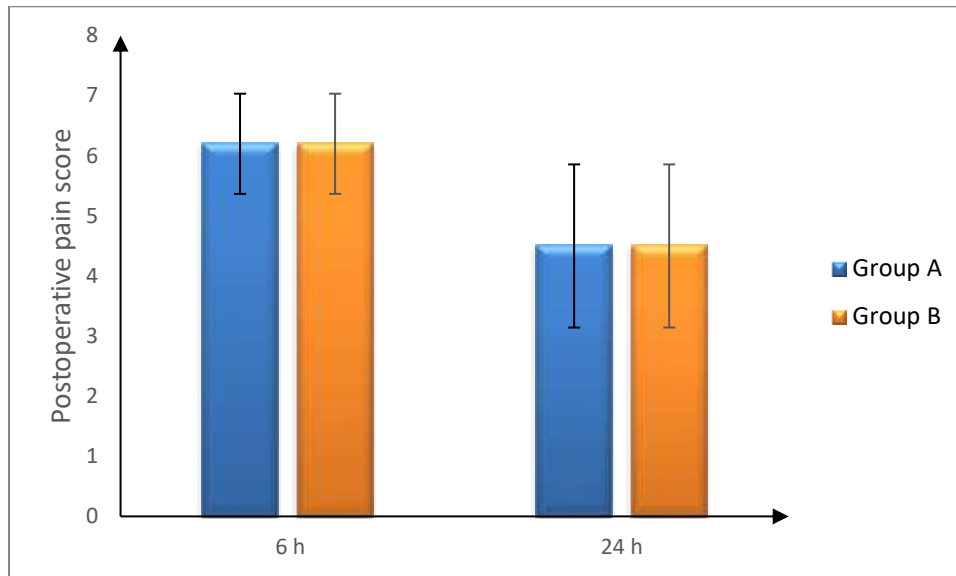


Figure 3: Comparison between Group A (TLH) and Group B (TAH) as regard to postoperative pain score at 6hr and 24 hr after surgery

Also, the study showed statistically significant difference between TLH and TAH as regard to number of analgesic ampoules. The number of analgesic ampoules required to modulate pain due to TLH (the mean 2.15 ± 0.12

ampoules) was significantly less than number of analgesic ampoules used to relieve pain due to TAH (the mean 3.25 ± 0.44 ampoules) with p value < 0.001.

Number of postoperative analgesic ampoules	Group A (TLH) (n = 20)	Group B (TAH) (n = 20)
Mean \pm SD(ampoule)	2.15 ± 0.12	3.25 ± 0.44
Range(ampoule)	2 - 3	3 - 4
P value	< 0.001	

Table 4: Comparison between Group A (TLH) and Group B (TAH) as regard tonumber of postoperative analgesic ampoules

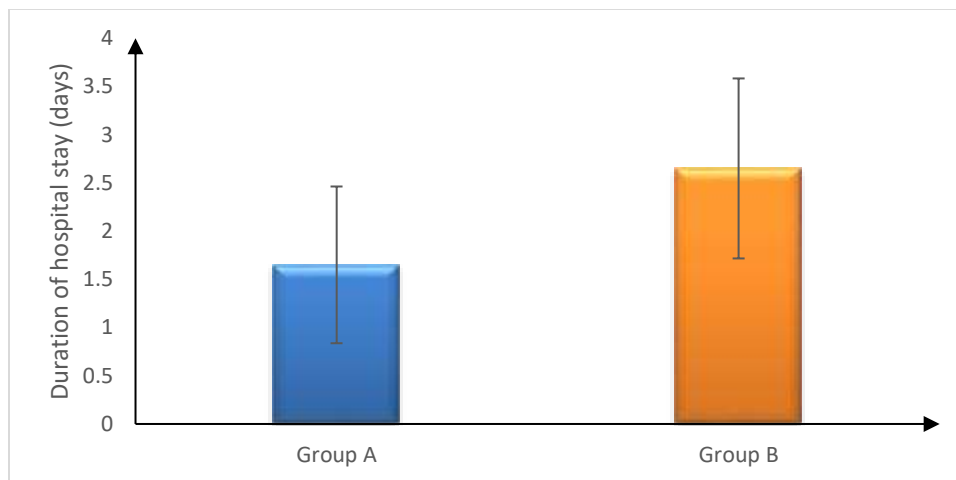


Figure 4: Comparison between Group A (TLH) and Group B (TAH) as regard to duration of hospital stay (days)

The study also statistically showed that patients doing TLH markedly stayed less days in hospital than patients doing TAH (the means 1.65 ± 0.81 days,

2.65 ± 0.93 days respectively) with statistically highly significant difference (P value less than 0.001). As a result, the TLH was cost-effective in this prospective.

Duration of hospital stay (days)	Group A (TLH) (n = 20)	Group B (TAH) (n = 20)
Mean \pm SD	1.65 ± 0.81	2.65 ± 0.93
Range	1 - 4	2 - 5
P value	< 0.001	

Table 5: Comparison between Group A (TLH) and Group B (TAH) as regard to the duration of hospital stay

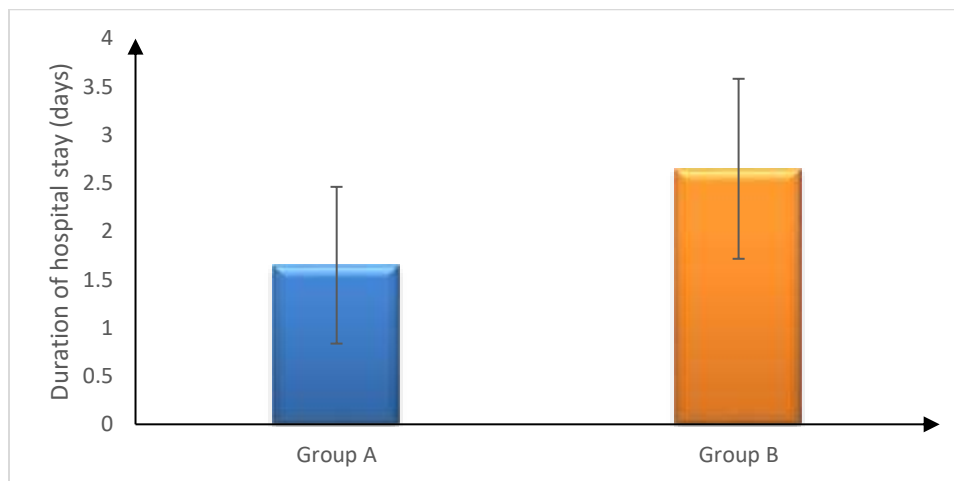


Figure 5: Comparison between Group A (TLH) and Group B (TAH) as regard to duration of hospital stay (days)

However, there was no significant difference between both groups as regard to need for blood transfusion, organs injuries (bladder/ureter/ bowel), conversion to laparotomy or re-operation, postoperative vault hematoma, postoperative febrile disease, wound complications (cellulitis/pus/dehiscence/hernia) and quality of life ($p > 0.05$).

Discussion:

This study was an interventional comparative randomized clinical trial (RCT) conducted at Ain Shams University Maternity Hospital from July 2019 till July 2020. The study group included 40 obese women who attended the Outpatient Gynecological Clinic at Ain Shams University Maternity Hospital and for whom hysterectomy with/without salpingoophorectomy was indicated due to benign lesions of the genital tract. They were randomly divided into two equal groups. Group (A) contained 20 obese women undergoing total laparoscopic hysterectomy (TLA), whereas Group (B) contained 20 obese women undergoing total abdominal hysterectomy (TAH).

Patient demographic characteristics in both groups showed no statistically significant difference as regard to age and body mass index. Also, surgical, medical and obstetric histories showed no significant difference between both groups.

During the conduct of hysterectomy on either group, the both fallopian tubes were removed from all obese patients. However, bilateral oophorectomy was done only for diseased or atrophic ovaries. There was no significant difference between both groups (p value = 0.705).

In the context of our research which showed high significant difference between TLH and TAH in terms of operative blood loss, Colin had performed a meta-analysis of published randomised controlled trials to compare outcomes in total abdominal hysterectomy (TAH) and total laparoscopic hysterectomy (TLH) for benign disease. The results of this meta-analysis match this study results. In Colin's meta-analysis, pooled odds ratios (OR) were calculated for categorical variables using random effects models as per DerSimonian and Laird. Continuous variables were compared by means of weighted mean differences (WMD). TLH was associated with reduced estimated blood loss (WMD -183ml; 95% CI -346ml to -21ml; $p=0.03$) [9].

The same result was obtained in Sutasanasuang's retrospective comparative study containing 30 TLHs and 30 TAHs due to benign pathology (the amount of blood loss for TAH 389.9 +/- 125.4 cc and for TLH 275.5 +/- 189.3 cc) [10] . As well, Schindlbeck retrospectively analyzed 43 total laparoscopic hysterectomies (TLH), 103 total abdominal hysterectomies (AH) and 87 vaginal hysterectomies (VH) due to benign and malignant lesions of the genital tract as regard to perioperative blood loss. The results showed that TLH, in comparison to TAH, had significantly less bleeding

[11]. The previous results of Schindlbeck's retrospective analysis match with the outcomes of this prospective clinical trial.

In contrast, BabElSharia University Hospital's prospective randomized controlled trial showed that there is no significant difference between TLH and TAH (the means of blood loss for TLH 184.8 ± 24.6 ml and TAH 208.75 ± 21.8 ml with p value 0.711). However, the small sample size of this study targeted uterine tumours which were early-staged malignancy and/or less than 14 weeks (10 cm) [12]

As regard to the operating time, this study result matches with Colin's meta-analysis which showed that it was longer operating time in the TLH group (WMD 22min; 95% CI 5-39 min; $p=0.01$) [9] (Walsh et al., 2009). Besides, Sutasanasuang's retrospective study showed the same result regarding to the operating time (218.4 ± 79.3 min for TLH & 91.1 ± 53.6 min for TAH) [10]

Regarding to postoperative pain reflected subjectively by visual pain scale and objectively by analgesic ampoules, the study result are the same of result of Sutasanasuang's retrospective comparative study containing thirty TLH patients and thirty TAH controls with benign uterine lesions, operated in Somdejprasangkharaj 17th Hospital in Suphanburi. The study showed that TLH is significantly less painful than TAH as illustrated in the means of dosage of meperidine (TLH mean 95.4 ± 43.2 mg vs. TAH mean 2368 ± 20.7 mg) and pain score (TLH mean 5.4 ± 0.7 vs. TAH mean 8.7 ± 1.3) [10]

In general, all studies of the literature considerably agree that duration of hospital stay after TLH is significantly shorter than hospitalisation interval after TAH. Therefore, the result study corresponds to the result of Pooja's study. It prospectively compared between 50 TLHs and 50 TAHs, and showed that the mean length of hospital stay was significantly lower ($p < 0.001$) in TLH group (3.84 ± 0.5 days) than that in TAH group (5.6 ± 1.4 days) [13]

Also, this study result concerned with intra-operative complications agrees with Wang's meta-analysis of 9 randomized trials performed to investigate the effects of TLH versus TAH, however; it was done for women with early-stage endometrial cancer (RR = 0.98, 95% CI 0.62-1.55, $P = 0.919$) [14] well, in Masson's retrospective study, urological complications rate of TLH was no significantly higher than TAH [15]

A regard to blood transfusion, the study result does not correspond to Timmons's retrospective 517 charts review of patients who had undergone abdominal, laparoscopic, or vaginal hysterectomy due to benign lesions (blood transfusion for TAH 34/263 (12.92%) and TLH 5/119 (4.2%) with P value = 0.017). However, there were limitations to Timmons's study which included the retrospective observational character of the study, comparison among all routes of Hysterectomy, and inequality of the medical degrees of operating doctors [16]

It is worthy to mention the result of postoperative vault hematoma in this study corresponds to Shuk-Tak's retrospective analysis of 801 hysterectomized patients over a 3-year period in Pamela Youde Nethersole Eastern Hospital, Hong Kong. The study showed that there was no significant difference between TLH and TAH as regard to postoperative vault hematoma ((TAH 27/456 (5.9%) & TLH 7/122(5.7%) with odds ratio 1.033) [17]

In terms of return to theatre, the study result with Rebecca's retrospective study, carried out over a 5-year period with 296 procedures due to benign genital pathology, which mentioned that there was no significant difference between TLH and TAH as regard to the need for another laparotomy (TLH 3 cases (1.9%) & TAH 4 cases (3.1%) with p value 0.704) [18]

In terms of the requirement for additional laparotomy, the study found no significant difference between TLH and TAH (TLH 3 cases (1.9%) & TAH 4 instances (3.1%) with p value 0.704) [18]

Concerning to the wound complications spectrum, there was no significant difference between both groups. This result matches with the result of Anju who conducted a retrospective study at Indian general hospital to compare between 126 TLHs and 126 TAHs due to benign uterine diseases as regard to wound complications [19]

In addition, the quality of life (urinary, rectal and sexual function) did not change significantly between TLH group and TAH group when the patients had been questioned about the bladder and bowel functions and about sexual intercourse. This result corresponds to the result of a trial in Thailand, conducted by Shins and his colleagues, which compared between total laparoscopic hysterectomy (TLH) and total abdominal hysterectomy (TAH) for benign, pre-malignant and malignant lesions of uterus using Euro-quality of life five dimensions (EQ-5D) questionnaire to evaluate quality of life [20]

Conclusion

The study shows that total laparoscopic hysterectomy is a safe procedure for benign lesions of the genital tract in obese patients. It has physical, technical and economic advantages. It can replace total abdominal hysterectomy with no considerable drawbacks.

References

1. Sheth SS, Paghdiwalla KP and Hajari AR (2011): Vaginal route: A gynaecological route for much more than hysterectomy. *Best Pract Res Clin Obstet Gynaecol.* 25 (2): 115–132
2. Weinberg L, Rao S and Escobar PF (2011): Robotic Surgery in Gynecology: An Updated Systematic Review. *Obstet Gynecol Int;*20(11): 1–29
3. Aarts JW, Nieboer TE, Johnson N (2015): Surgical approach to hysterectomy for benign gynaecological disease, COCHRANE DB SYST REV; (8): CD003677.
4. Wang HL, Ren YF, Yang J (2013): Total laparoscopic hysterectomy versus total abdominal hysterectomy for endometrial cancer: a meta-analysis. *Asian Pac J Cancer Prev.* 2013;14(4):2515–2519.
5. Blikkendaal MD, Schepers EM, van Zwet EW (2015): Hysterectomy in very obese and morbidly obese patients: a

- systematic review with cumulative analysis of comparative studies. *Arch Gynecol Obstet;*292 (4): 723–738
6. Berghofer A, Pischon T, Reinhold T (2018): Obesity prevalence from a European perspective: a systematic review. *BMC Public Health;*8:200.
7. Flegal KM, Carroll MD, Kit BK and Ogden CL. (2012): Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999–2010. *JAMA;*307:491–497.
8. Michael Shmukler)2004:(Density of blood, *The Physics Factbook;*61:12-.
9. Walsh CA, Walsh SR, Tang TY, et al. (2009): Total abdominal hysterectomy versus total laparoscopic hysterectomy for benign disease: a meta-analysis. *Eur J Obstet Gynecol Reprod Biol.* 2009;144(1):3-7.
10. Sutasanasuang S (2011): Laparoscopic hysterectomy versus total abdominal hysterectomy: a retrospective comparative study. *J Med Assoc Thai.* 2011;94(1):8-16.
11. Schindlbeck C, Klausner K, Dian D, et al. (2008): Comparison of total laparoscopic, vaginal and abdominal hysterectomy. *Arch Gynecol Obstet.* 2008;277(4):331-337.
12. Mohamad F, Hamed A, Ehab H (2018): Total Laparoscopic Hysterectomy versus Total Abdominal Hysterectomy in Uterine Tumors. *Egypt J Hosp Med.*2018; 72(10):5427-5432.
13. Pooja G, Subrat C and Rupita K (2020): A comparative study between Total Laparoscopic Hysterectomy (TLH) and conventional Total Abdominal Hysterectomy (TAH) in non-neoplastic uterine diseases. *Int J Clin Obstet Gynaecol* 2020; 4(3):188-191.
14. Wang HL, Ren YF, Yang J, et al. (2013): Total laparoscopic hysterectomy versus total abdominal hysterectomy for endometrial cancer: a meta-analysis. *Asian Pac J Cancer Prev.* 2013;14(4):2515–2519.
15. Masson FN, Pouly JL, Canis M, et al. (1996): Laparoscopic hysterectomy. A series of 318 consecutive cases [Hystérectomie per-coelioscopique. Une série continue de 318 cas]. *J Gynecol Obstet Biol Reprod.* 1996;25(4):340-352.
16. Timmons D, Ulker A, Verna A (2020): Perioperative Blood Transfusions: Risk Factors for Patients Undergoing Hysterectomy for Benign Disease [29B]. *Obst Gynecol.* 2020;(135):26–29.
17. Shuk-Tak K (2016): Vault Haematoma following Hysterectomy: Three year Experience. *Hong Kong J Gynaecol Obstet Midwifery* 2016; 16(2):121-128.
18. Mallick R, English J, Waters N (2016): Total Laparoscopic Hysterectomy versus Total Abdominal Hysterectomy in the Treatment of Benign Gynaecological Disease: A Retrospective Review Over 5 Years. *Obstet Gynecol Int J.*3016;5(7): 00186.
19. Anju D, Vinay K and Nishu B (2019): TLH versus TAH: a 2 year retrospective comparative study. *Int J Reprod Contracept Obstet Gynecol.* 2019;(8)10:23-27.
20. Shina O, Natacha P, Chai A (2019): A Comparative Study of Quality of Life of Patients Who Underwent Total Laparoscopic Hysterectomy and Total Abdominal Hysterectomy. *Thai J. Obstet. Gynaecol.* 2019; 27(2):63-70.



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