شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

Perioperative Outcomes using LigaSure Compared with Conventional Bipolar Instruments in Laparoscopic Hysterectomy for Benign Gynaecological Disease in Ain Shams University Maternity Hospital: A Randomized Controlled Trial

Thesis

Submitted for Partial Fulfillment of MD Degree in Obstetrics and Gynecology

By

Mohamed Sami Kamal Morshidy

Master Degree in Obstetrics and Gynaecology
Faculty of Medicine –Ain Shams University

Supervised By

Professor Dr. Mohamed Sayed Aly Salem

Professor of Obstetrics and Gynaecology
Faculty of Medicine, Ain Shams University

Assistant Prof. Dr. Mohamed Mahmoud Al-Sherbiny

Assistant Professor of Obstetrics and Gynaecology
Faculty of Medicine, Ain Shams University

Assistant Prof. Dr. Amr Ahmed Mahmoud Riad

Assistant Professor of Obstetrics and Gynaecology
Faculty of Medicine, Ain Shams University

Faculty of Medicine
Ain Shams University
2021

سورة البقرة الآية: ٣٢

Acknowledgment

First and foremost, I feel always indebted to Allah, the Most Kind and Most Merciful.

I'd like to express my respectful thanks and profound gratitude to ***Prof. Dr. Mohamed Sayed Aly Salem,*** *Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain-Shams University for his keen guidance, kind supervision, valuable advice and continuous encouragement, which made possible the completion of this work.*

I am also delighted to express my deepest gratitude and thanks to ***Prof. Dr. Mohamed Mahmoud Al-Sherbiny,*** *Assistant Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for his kind care, continuous supervision, valuable instructions, constant help and great assistance throughout this work.*

I am deeply thankful to ***Prof. Dr. Amr Ahmed Mahmoud Riad,*** *Assistant Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for his great help, active participation and guidance.*

I am deeply thankful to ***Dr. Houssam Abd El-Maqead,*** *for his sharing experience and effort.*

I would like to express my hearty thanks to all ***my family*** *for their support till this work was completed.*

Last but not least my sincere thanks and appreciation to all patients participated in this study.

Mohamed Morshidy

ABSTRACT

Perioperative Outcomes using LigaSure Compared with Conventional Bipolar Instruments in Laparoscopic Hysterectomy for Benign Gynaecological Disease in Ain Shams University Maternity Hospital: A Randomized Controlled Trial

Prof. Dr. Mohamed Sayed Aly Salem, Assistant Prof. Dr. Mohamed Mahmoud Al-Sherbiny, Assistant Prof. Dr. Amr Ahmed Mahmoud Riad & Dr. Mohamed Sami Kamal Morshidy Youssif*

Obstetrics and Gynaecology Department, Faculty of Medicine, Ain Shams University

***Corresponding Author:** Mohamed Sami Kamal Morshidy Youssif*

***Phone No.:** (+201090025268)*

E-mail; Morshidy.obgyn@gmail.com

Background: Haemorrhage is one of the most frequent complications during surgery, so adequate haemostatic techniques are essential during surgical procedures, in particular with the laparoscopic procedures. Excessive bleeding during laparoscopic hysterectomy is associated with an increased risk of urinary tract injuries and conversion to laparotomy.

Aim of the Work: To compare the effects of LigaSure versus the conventional bipolar technique on operating time and blood loss during laparoscopic hysterectomy.

Patients and Methods: This study was carried out in 2 years, we included 140 Women who underwent hysterectomy for benign gynaecological disease, 70 women of them underwent laparoscopic hysterectomy using LigaSure vessel sealing system while the rest underwent laparoscopic hysterectomy using conventional bipolar instruments.

Results: In comparison with Biploar cautery Group, the Ligasure Vessel Sealing System (LVSS) Group had significantly shorter operation time (p=0.002), while there was non-significant difference between both groups regarding blood loss, length of hospital stay, incidence of major bleeding & incidence of bladder injury among patients undergoing laparoscopic hysterectomy.

Conclusion: The LigaSure vessel sealing system is a safe alternative for laparoscopic hysterectomy when compared with traditional bipolar cautery.

Keywords:

Benign Gynaecological Diseases

Total Laparoscopic Hysterectomy

Electrosurgical Techniques In Laparoscopy

LigaSure

Bipolar

List of Contents

Title Page No.

List of Tables

List of Figures

List of Figures *(Cont...)*

List of Abbreviations

Abb.	Full term
AC	*Alternating Current*
ACOG	*American Congress of Obstetricians and Gynecologists*
AD	*Adenomyosis*
AUB	*Abnormal Uterine Bleeding*
BMI	*Body Mass Index*
CO_2	*Carbon Dioxide*
CXR	*Chest X-Ray*
DC	*Direct Current*
ECG	*Electrocardiogram*
HF	*High-Frequency*
HIFU	*High- Intensity Focused Ultrasound*
HMB	*Heavy Menstrual Bleeding*
LAVH	*Laparoscopic Assisted Vaginal Hysterectomy*
LUNA	*Laparoscopic Uterosacral Nerve Ablation*
PID	*Pelvic Inflammatory Disease*
POP	*Pelvic Organ Prolapse*
SD	*Standard Deviation*
TAH	*Total Abdominal Hysterectomy*
TLH	*Total Laparoscopic Hysterectomy*
UFs	*Uterine Fibroids*
VH	*Vaginal Hysterectomy*

INTRODUCTION

Haemorrhage is one of the most frequent complications during surgery, so adequate haemostatic techniques are essential during surgical procedures, in particular with the laparoscopic procedures. Excessive bleeding during laparoscopic hysterectomy is associated with an increased risk of urinary tract injuries and conversion to laparotomy ***(Garry, 1994).***

Hysterectomy is one of the most frequently performed gynaecologic surgical procedures. A Cochrane database review states vaginal hysterectomy as the preferred route of removing the uterus when compared with abdominal hysterectomy, because of earlier return to normal activities, fewer febrile episodes, and shorter duration of hospital stay. Comparison between laparoscopic hysterectomy and abdominal hysterectomy favours the laparoscopic method, because of earlier return to normal activities, lower intraoperative blood loss, fewer wound infections, and shorter hospital stay ***(Nieboer et al., 2009).***

Since the introduction of laparoscopic surgery, different haemostatic instruments have been developed. In laparoscopic surgery, conventional mechanical haemostatic techniques, using sutures or clips, have almost completely been replaced by coagulation techniques, using monopolar coagulation, bipolar coagulation and ultrasonic instruments. LigaSure (Valleylab, Boulder, CO, USA) desiccates vascular tissues using a

feedback-programmed amount of bipolar diathermy ***(Heniford et al., 2001).*** This method of vessel sealing relies on the application of a precise amount of bipolar electrocoagulation and pressure to the tissue, leading to the denaturation of the collagen and elastin in vessel walls, resulting in a haemostatic seal ***(Kennedy et al., 1998).*** The technique is able to seal vessels up to 7 mm in diameter and the seal can withstand three times the normal systolic pressure ***(Landman et al., 2003).*** In addition, compared with conventional bipolar instruments, this vessel-sealing mechanism has a significantly reduced thermal spread profile and therefore, a decreased risk of injury to adjacent structures.

The use of LigaSure has been assessed for a range of procedures, such as abdominal and vaginal hysterectomy as well as haemorrhoidectomy and bowel surgery ***(Hagen et al., 2005).*** Several studies reported a decrease of operating time or operative blood loss using LigaSure instruments in comparison with other haemostatic instruments ***(Hefni et al., 2005).***

The use of LigaSure has been assessed for a range of procedures, such as abdominal and vaginal hysterectomy as well as haemorrhoidectomy and bowel surgery. Several studies reported a decrease of operating time or operative blood loss using LigaSure instruments in comparison with other haemostatic instruments ***(Thorbeck and Montes, 2005).***

AIM OF THE WORK

Study Objective:

To compare the effects of LigaSure versus the conventional bipolar technique on operating time and blood loss during laparoscopic hysterectomy.

Research hypothesis:

Ligasure may be compared to the conventional bipolar technique as regard operating time and blood loss during laparoscopic hysterectomy.

Research question:

Is ligasure compare to the conventional bipolar technique as regard operating time and blood loss during laparoscopic hysterectomy.

Primary outcome:

Comparing outcomes using LigaSure compared with conventional bipolar instruments in laparoscopic hysterectomy for benign gynaecological disease as regard operative time and blood loss.

Secondary outcome:

Comparing outcomes using LigaSure compared with conventional bipolar instruments in laparoscopic hysterectomy for benign gynaecological disease as regard intraoperative complication.