SKIN ADHESIVE TAPE VERSUS NON-ABSORBABLE SUTURES IN REPAIR OF LAPAROSCOPIC INCISION

Thesis

Submitted for Partial Fulfillment of Master Degree
in Obstetrics and Gynecology

By

Safaa Ragab Ahmed Sakr
M.B.,B.Ch (2011)
Resident of Obstetrics and Gynecology
Ashmoun General Hospital

Supervised by

Prof. Moustafa Ibrahim Ibrahim
Professor of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Dr. Amr Ahmed Mahmoud Riad
Lecturer of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
2017

Abstract

Introduction: Every year several million women have to undergo gynecological surgery. As a result of that they acquire an abdominal scar. Nowadays women of all ages place extreme importance on the appearance of the scar in addition to the symptoms of pain, tenderness and itching. An aesthetically poor scar can have a negative impact on the overall quality of life causing considerable distress, loss of self-esteem and unhappiness. The appearance of the scar is of significant importance and is often the only reminder of surgery.

Aim of the Study: We suggest that skin closure with skin adhesive tape (steri-strips) in women undergoing laparoscopic operation is similar to non-absorbable suture regarding: sound healing and patient satisfaction.

Patients and Methods: This study was carried out at Ain Shams University Maternity Hospital during the period from February 2017 to July 2017. Women under study were recruited from the operative wards of Ain Shams University Maternity Hospital. After proper counseling, all women who were chosen for enrollment agreed to participate. The total number of ladies enrolled in the study was 142 women.

Results: The design of the study is a prospective case control study where 142 were randomly allocated in two groups. **Group (A):** include 71 cases where laparoscopic port sites closed with adhesive tape (Steri Strep®). **Group (B):** include 71 cases where laparoscopic port sites closed with suture.

Conclusion: To conclude, it was found that the use of adhesive tape (Steri Strep®) in closure of abdominal laparoscopic port sites is associated with a decreased risk of wound complications. Occurrence of wound complications is the most important factor that influenced patient satisfaction. However more studies are needed on larger number of subjects to confirm these results.

Recommendations: This study supports the use of adhesive tape (Steri Strep®) in closure of abdominal laparoscopic port sites as it is considered of value in reducing postoperative pain with better wound healing .The advantages of unsuturing the skin and keeping it opposed without fearing of increase the infection rate may be of great value in many obestetric and gynecological procedures.

Keywords: Skin adhesive tape, Absorbable sutures, Laparoscopic incision

First of all, thanks to Allah whose magnificent help was the main factor in completing this work.

No words can express my deep sincere feelings Towards Prof. Moustafa Ibrahim Ibrahim, Professor of Obstetrics and Gynecology, Faculty of Medicine-Ain Shams University for his continuous encouragement, guidance and support he gave me throughout the whole work. It has been a great honor for me to work under his generous supervision.

I would like to express my deepest appreciation, respect and thanks to Dr. Amr Ahmed Mahmoud Riad, Lecturer of Obstetrics and Gynecology, Faculty of Medicine-Ain Shams University, for his continuous guide in all aspects of life beside his great science, knowledge and information.

Last but not least, sincere gratitude to *My Family* for their continuous encouragement and spiritual support.

سورة البقرة الآية: ٣٢

Contents

Subjects **Page**

List of Abbreviations

BMI Body Mass Index

CDC The centers for Disease Control and Prevention

CS Caesarean section

HAIs Healthcare Associated infections

HIV Human Immunodeficiency Virus

MRSA Methicillin Resistant S.aureus

NNIs National Nosocomial Infection Surveillance

SSI Surgical Site Infection

List of Figures

List of Tables

SKIN ADHESIVE TAPE VERSUS NON-ABSORBABLE SUTURES IN REPAIR OF LAPAROSCOPIC INCISION

Protocol of Thesis

Submitted for Partial Fulfillment of Master Degree
in Obstetrics and Gynecology

By

Safaa Ragab Ahmed Sakr
M.B., B.Ch, 2011
Resident of Obstetrics and Gynecology
Ain Shams University Maternity Hospital

Under Supervision of

Prof. Moustafa Ibrahim Ibrahim
Professor of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Dr. Amr Ahmed Mahmoud Riad
Lecturer of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
2016

INTRODUCTION

Laparoscopy is an operation performed in the abdomen or pelvis through small incisions with the aid of a camera. It can either be used to inspect and diagnose a condition or to perform surgery. Surgery involving laparoscope is also called minimally invasive surgery because operations are performed using multiple small incisions (0.5 to 1.5 cm) in contrast to traditional methods which use large incisions (**Goldberg, 2010**).

Operative laparoscopy has become the standard approach for most common surgeries, including tubal ligation, cholecystectomy, appendectomy, and ovarian cystectomy (**Goldberg, 2010**).

Currently, technology is so advanced that almost all surgical procedures can be performed laparoscopically. The laparoscopic approach has been gaining popularity for several reasons:

- Shorter hospitalization when admission is necessary.
- Better cosmetics.
- Faster recovery and earlier return to normal activity.
- Less risk of postoperative adhesion formation.

(**Bardwil, 2014**)

The principal aims of tissue repair of surgical incision are rapid acquisition of strength, minimum tissue damage, with minimum inflammation and good scar **(Gatt et al., 1985).**

Furthermore, the closure technique which avoids the need to puncture the skin, will avoid introduction of a foreign body, so incision inflammation and scarring are consequently will be reduced **(Ma et al., 2014).**

The goal of incision healing is to prevent wound infection and achieve a good cosmetic result. To date, various types of incision closure techniques have been applied to clinical practice, including synthetic sutures, absorbable sutures, staples and adhesive compounds **(Patel et al., 2012).**

Suturing is defined as any surgical step intended to approximate the edges of a tissue that is discontinuous with its anatomical planes. Its function can be mechanical (opposing the forces that tend to separate the wound edges), joining different anatomical planes together or isolation (preventing bacterial contamination). Essentially there are two traditional suturing techniques:

- Interrupted.
- Continuous.

(Wattiez et al., 2013)

In previous studies, examining wound healing closed using the adhesive skin tape resulted in significantly less erythema and edema, and improved cosmoses compared to the traditional skin closure using an absorbable running subcuticular suture technique **(Lazar et al., 2008 and Lazar et al., 2011).**

However, surgical tape closure is not widely used in surgery because of fear of dehiscence of the wound after placement. A new commercially available wound closure tape produced by 3M is the 'Steri-Strip S'. It is constructed of soft polyurethane pads and interlaced polyester filaments to provide strong, secure skin closure on any length of wound **(Gevel et al., 2010).**

AIM OF THE WORK

The aim of the current study is to compare two different techniques of laparoscopic skin incision closure after laparoscopic operation; skin adhesive tape (steri-strips) and non-absorbable sutures regarding patient satisfaction, wound healing and documented signs of infection as redness, hot incision site and continual pain.

Research hypothesis: In women undergoing laparoscopic operation skin closure with skin adhesive tape may be similar to non-absorbable suture regarding: sound healing and patient satisfaction.

Research question: In women undergoing operation with laparoscopy, is skin closure with adhesive skin tape comparable to non-absorbable sutures as regard sound healing and women satisfaction?

PATIENTS AND METHODS

This is a prospective case control study which will include 142 patients who will be selected from Ain Shams University maternity hospital.

Patient consent will be taken first.

Inclusion criteria:

a)Age : 20 – 40 y

b)Patient undergoing laparoscopy.

c)Patient consent.

Exclusion criteria:

a) Previously existing local infections or lesions.

b) Patient diseases interfere with wound healing or causing excessive bleeding (coagulopathy, collagen disease, diabetes mellitus, known immuno-deficiency, immunosuppressive treatment).

c) Known hypersensitivity to adhesive materials

d) Patient not consenting for the trail.

e) Participation in another intervention-trial with interference of intervention and/or outcome of this study.

Sample Size:

Group sample sizes of 71 women in group one (steri-strips) and 71 women in group two (sutures) achieve 80% power to detect a difference of 15% in proportion of women with complete healing of wound one week post-operative between the two groups. The proportion of women with complete wound healing one week post-operative in group one (strips)) is assumed to be 80% under the null hypothesis and 95% under the alternative hypothesis. The proportion in group two (sutures) is assumed to be 80%. The test statistic used

Is the two-sided Z test with pooled variance. The significance level of the test was targeted at 0.05. The significance level actually achieved by this design is 0.05.

Reference for sample size calculation: Fleiss, J. L., Levin, B., Paik, M.C. 2003. Statistical Methods for Rates and Proportions. Third Edition. John

Wiley & Sons. New York.

Study groups:

- **Group I:** 71 patients will be subjected to skin repair after laparoscopic surgery with adhesive tape.
- **Group II:** 71 patients will be subjected to skin repair after laparoscopic surgery with non-absorbable sutures.