SKIN ADHESIVE TAPE COMPARED WITH CONTINUOUS SUTURE IN PERINEAL SKIN REPAIR AFTER EPISIOTOMY

Thesis

Submitted for Partial Fulfillment of Master Degree
in **Obstetrics and Gynecology**

By

Lobna Ahmed Nabil Mohamed Mansour
M.B., B.Ch, (2006, Ain Shams University)
Resident of Obstetrics and Gynecology
Manshiet El-Bakry General Hospital

Supervised by

Prof. Mohamed Ashraf Mohamed Farouk Kortam
Professor of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Dr. Mohamed Mahmoud ElSherbiny
Assistant Professor of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Dr. Ahmed Sherif Abdel Hamid Abdel Wahab
Lecturer of Obstetrics and Gynecology
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
2017

Abstract

Background: Episiotomy is the most common operating procedure that most obstetricians will perform in their lifetime. Because it is so common and considered minor surgery, teaching students or interns the principles and techniques is usually left to the most junior of residents. This study will be undertaken to question the superiority of use skin adhesive tape (® Steri-Strip) closure system in wound healing over the traditional running absorpable subcuticular suture technique in perineal repair after episiotomy.

Aims: The aim of current work is to compare two different techniques of episiotomy skin closure after vaginal delivery; skin adhesive tape and continuous absorbable subcuticular suture.

Methodology: Comparative randomized trial. 300 women who were admitted to Ain Shams University Maternity Hospital between the period of December 2015 and December 2016, after the approval of Research and Ethical Committee.

Results: During the randomization period, 367 primiparous women delivered vaginally, 29 of who were excluded for not meeting criteria of inclusion and exclusion, 338 were randomized to either suture technique or adhesive tape. Eleven women withdrew their consent to participate; leaving 327 participants for follow up. 27 didn't retained for their 2nd evaluation. Leaving 300 women for analysis.The included 300 women were randomized into one of two groups:

Group I (n=150): Women underwent episiotomy skin repair using subcuticular sutures.

Group II (n=150): Women underwent episiotomy skin repair using adhesive tape.

Conclusion: The use of adhesive tape in episiotomy skin closure may reduce pain in some points postdelivery in comparison to suturing using polyglactin 910, but results in no significant difference in timing, healing and later pain sensation during some daily activities.

Recommendations: The use of skin adhesive tape in perineal skin repair is considered of value in reducing postdelivery pain after episiotomy. 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, Vaginal delivery, skin repair after episiotomy

Acknowledgement

I am grateful to all those who helped me to achieve and complete this work. ***Prof. Dr. Mohamed Ashraf Kortam*** *Professor of Obstetric and Gynecology, Faculty of Medicine, Ain Shams University.* ***Dr. Mohamed Mahmoud El Sherbiny*** *Ass. Professor of obstetric and Gynecology, Faculty of Medicine, Ain Shams University.* ***Dr. Ahmed Sherif Abdel Hamid*** *lecturer of obstetric and Gynecology, Faculty of Medicine, Ain Shams University, and all the team and staff of the unit of labour at Ain Shams University.*

Contents

List of Abbreviations

EAS : The External Anal Sphincter

IAS : Internal Anal Sphincter

NSAID : Non-Steroidal Anti-Inflammatory

OASIS : Obestetrical Anal Sphincter Injuries

PFMT : Pelvic Floor Muscle Training

REEDA : Redness Edema Ecchymosis Discharge Approximation

RCT : Randomized Controlled Trial

VAS : Visual Analogue Scale

List of Figures

List of Tables

Introduction

Episiotomy is the most common operating procedure that most obstetricians will perform in their lifetime. Because it is so common and considered minor surgery, teaching students or interns the principles and techniques is usually left to the most junior of residents ***(Hale and Ling, 2007).***

The purpose of the procedure, which was explained to residents year after year, was to facilitate the second stage of labour. It also was reported to reduce perineal trauma, pelvic floor dysfunction and prolapsed, urinary and fecal incontinence and sexual dysfunction. Benefits of the fetus were a shortened second stage and less potential trauma to the fetal head. As more and more women gave birth in hospitals rather than homes, episiotomy became the rule rather than the exception ***(Hale and Ling, 2007).***

The optimal method for episiotomy and perineal trauma repair following childbirth remains open to debate and a great cause of concern to doctors, midwives, and the public ***(Kettle and Tohill, 2011)***.

The principal aims of tissue repair of surgical incision are rapid acquisition of strength, minimum tissue damage, with minimum inflammation and good scar. Many

factors including the skin closure technique influence these aims ***(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).***

A systemic review of the literature, conducted in 2011, has revealed that non-suturing of perineal skin alone in first and second degree tears and episiotomies may reduce pain and dyspareunia in the puerperium but may lead to increased risk of wound gaping ***(Kettle and Tohill, 2011)***, and the importance of primary skin healing in the avoidance of infection cannot be overemphasized ***(Ghosh et al., 2015)***.

Apparently, the ideal method for perineal repair should be quick, painless, easy to perform and preferably, without increase in pain and dyspareunia during the puerperium ***(Feigenberg et al., 2014).***

In a previous studies, examining wound healing closed using the adhesive skin tape, Surgical Skin system 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; Lazar et al., 2011).***

This study will be undertaken to question the superiority of use skin adhesive tape (® Steri-Strip) closure system in wound healing over the traditional running absorpable subcuticular suture technique in perineal repair after episiotomy.

Aim of the Work

The aim of current work is to compare two different techniques of episiotomy skin closure after vaginal delivery; skin adhesive tape and continuous absorbable subcuticular suture.

Research hypothesis:

In all primiparous women undergoing vaginal delivery with episiotomy, the use of skin adhesive tape in perineal skin repair may be equal to the use of continuous absorbable subcuticular suture as regard time, pain, wound complication and pain during some daily activities.

Research question:

In women undergoing vaginal delivery with episiotomy, will the skin closure with adhesive skin tape be similar to continuous absorbable subcuticular suture as regard pain, time, wound complication and pain during some daily activities or not?

Anatomy of the Perineum

It is essential before performing and repairing an episiotomy, to have a through knowladge of the anatomy of the perineum and adjacent structures in order to perform and repair adequat incision ***(Hale and Ling, 2007).***

Some divides the female reproductive system into internal and external genitalia, where the internal genitalia including thoes organs within the true pelvis, while thoese lie outside the true pelvis from the pubis to the perineal body named external genitalia and can be visible extrnally ***(Aurora and Thomas, 2013).***

The Pudenda:

Also named as valve **(Fig. 1)**; it includes the mons pubis, labia majora and minora, clitoris, hymen, vestibule, urethral opening, and greater vestibular or Bartholin glands, minor vestibular glands, and paraurethral glands ***(Sokol and Shveiky, 2008).***

Mons Pubis or the mons veneris; is a rounded hairy portion overlies the symphysis pubis; it is filled with fat which serve as cusion and forms the anterior boundry of the vulva. After puberty, the skin of the mons pubis is covered by curly hair distributed in triangular shape in women, that hair may not be so well circumscribed and extends onto the

anterior abdominal wall in men and some hirsute women ***(Cunningham et al., 2014).***

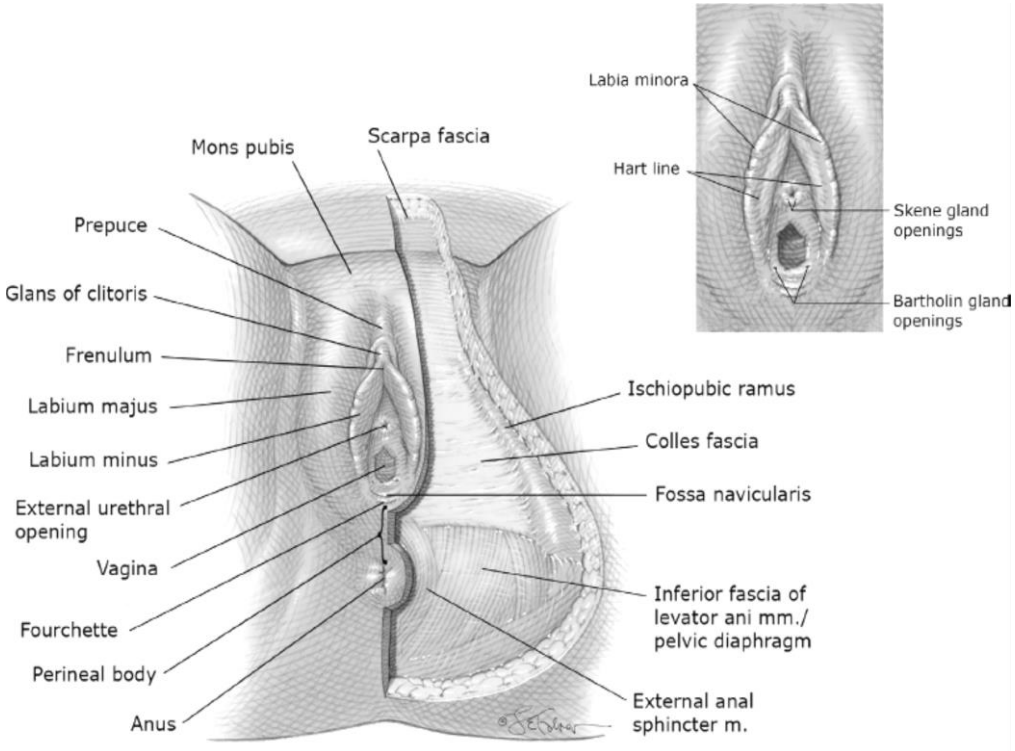

Figure 1: Vulvar structures and subcutaneous layer of the anterior perineal triangle ***(Corton, 2012).***

Labia Majora are two longitudinal structures measured 7 to 8 cm in length, 2 to 3 cm in depth, and 1 to 1.5 cm in thickness. They may vary somewhat in appearance according to the amount of fat they contain which give its shape. Superiorly, they are continuous directly with the mons pubis, and the round ligaments terminate at their upper borders ***(Anderson and Genadry, 2007).***

They tapered and merge posteriorly into the area overlying the perineal body to form the posterior commissure. The hair covers only its outer surface leaving their inner surface with no hair. In addition, apocrine and sebaceous glands are abundant in it. Beneath the skin, it is rich in elastic fibers and adipose tissue and is supplied with a rich venous plexus; in multiparous women this vasculature commonly develops varicosities during pregnancy from increased venous pressure created by advancing uterine weight. The labia majora and the male scrotum are homologus emberiogically ***(Iancu, 2017).***

The Labia Minora each lie medial to each labia majora as a thin fold of tissue extends superiorly to divides into two lamellae. The lower pair fuses to form the frenulum of the clitoris, and the upper pair merges to form the prepuce. Inferiorly, the labia minora extend to approach the midline as low ridges of tissue that fuse to form the fourchette. They are the corresponded to ventral shaft of the penis in males ***(Lloyd et al., 2005)***. Unlike labia majora, they lake hair follicles but there are many sebaceous glands and very rich with nerve ending which makes it extremely sensitive ***(Milles, 2012).***

The Clitoris is an erectile structure, rarely exceeds 2 cm in length, located above the frenulum and urethra but beneath the prepuce with downward projection between the branched extremities of the labia minora, it has free end

points downward and inward toward the vaginal opening. The clitoris is homologue of penis and resembles the principal female erogenous organ ***(Aurora and Thomas, 2013).*** The stratified squamous epithelium covering the clitoris is richly innervated, and the internal pudendal artery branches give it its blood supply ***(Cunningham et al., 2014).***

The Vestibule is that portion of valve which bounded laterally by Hart line and medially by the external surface of the hymen, the clitoral frenulum anteriorly, and the fourchette posteriorly. It is derived from the embryonic urogenital membrane. Usually, the openings can be seen in the vestibules are the urethra, the vagina, two Bartholin gland ducts, and at times, two ducts of the largest paraurethral glands, the Skene glands. The posterior portion of the vestibule (Vestibular fossa) between the fourchette and the hymen is called the fossa navicularis. It is usually observed in nulliparous women ***(Milles, 2012).***

Vestibular Glands this pair of Bartholin glands are major glands, situated bilateral on other sides of the vestibule, inferior to the vestibular bulbs and deep to the inferior ends of the bulbocavernosus muscle. Their ducts open distal to the hymenal ring at 5 and 7 o'clock. Following trauma or infection, either duct may swell and obstruct to form a cyst or if infected, an abscess ***(Wilkinson and Massoll, 2011).***