SUBCUTICULAR VERSUS INTERRUPTED SKIN CLOSURE AFTER RECURRENT CESAREAN SECTION IN DIABETIC PREGNANT WOMEN AS REGARD SURGICAL SITE INFECTION RATE

A Thesis
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بِسْمِ اللّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُواْ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا
إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

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Mohamed Mahmoud


Dedicated To
My Family

Contents

Page

List of Figures

List of Tables

Abbreviations

ACE	:	Angiotensin converting enzyme
ACOG	:	American college of obstetricians and gynecologists
ADA	:	American Diabetes association
BMI	:	Body mass index
CCT	:	Controlled cord traction
CDC	:	Centers for Disease Control and Prevention
CS	:	Cesarean section
DKA	:	Diabetic ketoacidosis
DM	:	Diabetes mellitus
EDD	:	Estimated date of delivery
GDM	:	Gestational diabetes Mellitus
GTT	:	Glucose tolerance test
IUFD	:	Intra uterine fetal death
NICE	:	National Institute of Clinical Excellence
NIH	:	National Institutes of Health
NNIS	:	The National Noscomial Infections Surveillance
NTDs	:	Neural tube defect
PCO	:	Polycystic ovary syndrome
PCOS	:	Poly cystic ovary syndrome
RCTs	:	Randomized controlled trials
RDs	:	Respiratory Distress syndrome
SD	:	standard deviation
SSI	:	Surgical site infection
UTI	:	Urinary tract infection
VBAC	:	Vaginal birth after cesarean section
WHO	:	World health organization

Abstract

The use of a continuous knotless technique for closure of the skin in diabetic women with recurrent cesarean section is associated with less time of wound suturing, time of wound healing, length of threads used by centimeters pain at 12 hours, 48 hours and ten days months, need for analgesia and lower VAS scores than techniques with interrupted sutures. Indeed, the introduction of a continuous suturing policy would provide more comfortability, less suturing materials, less time for repair and less analgesia are needed than for the interrupted method of repair.

Keywords:

Recurrent cesarean section

Diabetes with pregnancy

Continuous sutures technique

Interrupted sutures technique

Surgical site infection

Introduction

Caesarean section is one of the most commonly performed operations on the women throughout the world. Despite the additional risks over vaginal delivery, the rates of caesarean deliveries have increased dramatically in recent years from 12% in 1990 to 24% in 2008 with no improvement in outcome for the baby ***(Lopes T, Spirtos N, 2010).***

Moreover, the rate of vaginal birth after caesarean section has decreased from 28.3% in 1996 to 10.6% in 2003, leading to increase in repeat caesarean sections. Further studies have described risks of vaginal birth after caesarean section, which may well increase the trend towards planned repeat caesarean delivery ***(Menacker F, 2005).***

For women with diabetes mellitus, pregnancy can present some particular challenges for both mother and child. If the woman who is pregnant has diabetes, it can cause early and very large babies ***(clifton Rd.Atlanta, 2001).***

Planning in advance is emphasized if one wants to have a baby and has type 1 diabetes mellitus or type 2 diabetes mellitus. Pregnancy management for diabetics needs stringent blood glucose control even in advance of having pregnancy ***(Ornoy A, Wolf A, Ratzon N, 1999).***

Wound infection has probably been a major complication of surgery and trauma especially in diabetic patient. It has been demonstrated for at least 4000-5000 years. The Egyptian had somenotions about infection as they were certainly able to prevent putrefaction, as testified by their skills of mummification ***(Leaper DJ, 2004).***

Patients undergoing major surgery are almost by definition immunosuppressed. Surgical site infection defined as an infection in thirty days of surgery and its diagnosis consist of infection of an anatomic plane surgical site infection can sometimes be superficial infection involving the skin only. Other SSI are more serious, can involve tissue under the skin, organs or implanted material ***(Tamara C, Sherry W, Julie S).***

By one of the following manifestation: inflammatory signs (pain, tenderness, edema, redness) Postoperative wound infection results from bacterial contamination during or after a surgical procedure. Infection is usually

confined to the subcutaneous tissues. Despite every effort to maintain asepsis, most surgical wounds are contaminated to some extent. Even in the ancient times, the use of salves and antiseptics to prevent wound infection were widely used. The Hippocratic teachings described clearly the use of antimicrobials such as wine and vinegar to irrigate open infected wounds before secondary closure at a later date ***(Basha SL ,Rochon ML,Quniones JN, 2003).***

The ideal technique of skin closure would be safe and effective associated with minimal patient discomfort and have good cosmetic result it would also be inexpensive (require fewer health care resources). Fast and easy to apply, requires minimal follow-up evaluation, and associated with a low rate of complication ***(Alderdice F, McKenna D, Dornan J, 2006).***

There is currently no conclusive evidence about how the skin should be closed after caesarean section. Questions regarding the best techniques and materials for closure of caesarean section and the associated incidence of infection, local reaction, analgesia requirement and long term cosmetic appearance remain unanswered.

The appearance and strength of this scar is important to women and the choice of technique and materials should be made by women in consultation with their obstetrician based on the limited information currently available ***(American College Obstetricians and Gynecologists, 2011).***

In our study we are trying to find the best method for skin and subcutaneous tissue closure in diabetic pregnant women with recurrent C.S.

Aim of the work

The aim of this study is to determine the surgical site infection rate and patient satisfaction for subcuticular versus interrupted mattress suture in closure of skin at cesarean section in diabetic women

Cesarean Section

Back Ground

Cesarean delivery is defined as the birth of a fetus through incisions in the abdominal wall (laparotomy) and the uterine wall (hysterotomy). This definition does not include removal of the fetus from the abdominal cavity in the case of rupture of the uterus or in the case of an abdominal pregnancy. In some cases, and most often because of emergent complications such as intractable hemorrhage, abdominal hysterectomy is indicated following delivery. When performed at the time of cesarean delivery, the operations termed cesarean hysterectomy. If done within a short time after vaginal delivery, it is termed postpartum hysterectomy.***(Althabe F, Belizn JM, Villar J, et al,2004)***

HISTORICAL BACKGROUND

The origin of the term cesarean is obscure, and three principal explanations have been suggested.

In the first, according to legend, Julius Caesar was born in this manner, with the result that the procedure became known as the Caesarean operation. Several circumstances weaken this explanation. First, the mother of Julius Caesar lived for many years after his birth in 100 BC, and as late as the 17th century, the operation was almost invariably fatal. Second, the operation, whether performed on the living or the dead, is not mentioned by any medical writer before the middle Ages. Historical details of the origin of the family name Caesar are found in the monograph by Pickrell (1935).

The second explanation is that the name of the operation is derived from a Roman law, supposedly created in the 8th century BC by Numa Pompilius, ordering that the procedure be performed upon women dying in the last few weeks of pregnancy in the hope of saving the child. This lex regia—king's rule or law—later became the lex Caesarea under the emperors, and the operation itself became known as the caesarean operation. The German term Kaiserschnitt—Kaiser cut—reflects this derivation.

The third explanation is that the word caesarean was derived sometime in the middle Ages from the Latin verb caedere, to cut. This explanation seems most logical, but exactly when it was first applied to the operation is uncertain.

Because section is derived From the Latin verb seco, which also means cut, the term caesarean section seems tautological—thus cesarean delivery is used. In the United States, the ae in the first syllable of caesarean is replaced with the letter. In the United Kingdom, Australia, and most commonwealth nations, the ae is retained. ***(Boley JP,2007)***

Frequency

From 1970 to 2007, the cesarean delivery rate in the United States rose from 4.5 percent of all deliveries to 31.8 percent ***(Hamilton and colleagues, 2009; Mac Dorman and associates, 2008).***

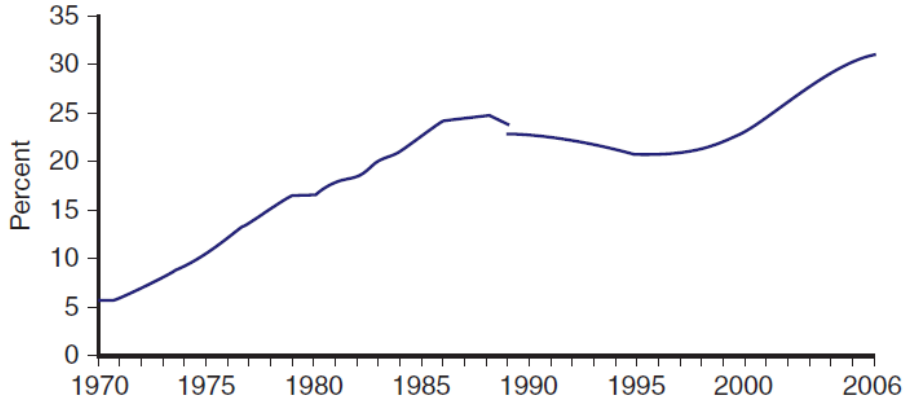

Fig. (1): Total cesarean delivery rate: United States, 1970–2006. (Reprinted from Clinics in Perinatology, Vol. 35, No. 2, MF Mac Dorman, F Menacker, E Declercq, Cesarean birth in the United States

The reasons for the continued increase in the cesarean rates are not completely understood, but some explanations include the following:

1. Women are having fewer children, thus, a greater percentage of births are among nulliparas, who are at increased Risk for cesarean delivery.
2. The average maternal age is rising, and older Women, especially nulliparas, are at increased risk of cesarean delivery.
3. The use of electronic fetal monitoring is Widespread. This technique is associated with an increased cesarean delivery rate Compared with intermittent fetal heart rate Auscultation.
4. Most fetuses presenting as breech are now delivered by cesarean.
5. The incidence of forceps and vacuum deliveries has decreased.