Transverse Supraumbilical Versus Pfannenstiel Incision for Cesarean Section in Morbidly Obese Women
"A randomized controlled trial"

Thesis

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List of Abbreviations

Abbr.	Full-term
ASHP	American Society of Health System of Pharmacists
BMI	Body mass index
2D	Two-Dimensional
C-SECTION	Cesarean Section
C.P.D	Cephalo-Pelvic Disproportion
CTG	Cardiotocography
CCT	Controlled Cord Traction
CMV	Cytomegalo Virus
CM	Centimeter
EFM	Electronic Fetal Monitoring
FHR	Fetal Heart Rate
HELLP	Hemolysis- Elevated Liver Enzymes- Low Platelet Count.
HIV	Human Immunodeficiency Virus
HSV	Herpes Simplex Virus
HPV	Human Papilloma Virus
IDSA	Infectious Disease Society of America
I.T.P	Idiopathic Thrombocytopenic Purpura
IU	International Unite
IV	intravenous

NICE	National Institute for Health and Care Excellence
NO	Number
PE	Pulmonary embolism
RCOG	Royal College of Obstetricians and Gynecologists
SHEA	Society of Health Care of Epidemiology of America
SSI	Surgical site infection
TSU	Transverse supraumbilical incision
VET	Venous thromboembolism
VRAS	Verbal Analogue Score

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Introduction

Cesarean section is defined as the birth of a fetus through incision in the abdominal wall and the uterine wall ***(Cunningham et al., 2000)***, cesarean section is one of the most common operative procedures performed in modern obstetrics ***(Mackeen et al., 2012)***.

Cesarean sections increased in both developed and developing countries for a variety of reasons ***(Vogel et al., 2015).*** There is an observed inverse association between rates of caesarean delivery and maternal and neonatal mortalities ***(Gibbons et al., 2012).***

Cesarean section which performed on non-medical indications in low-resource settings is associated with higher maternal risks than vaginal delivery ***(Souza et al., 2010)*** and the cesarean sections scar can cause problems in subsequent pregnancies ***(Silver, 2012).*** Cesarean sections complications account for a large proportion of the hospital's severe maternal morbidity and deaths ***(Litorp et al., 2014).***

The first successful cesarean delivery on a living woman had been performed by Jacob Nufer in 1500 AC ***(Larry et al., 2002)***. In 1882, Max Saenger introduced the technique of suturing the uterus. He advocated performing a vertical incision in the uterus that avoided the lower uterine segment, a particular important modification was recommended by Munro Kerr in 1926, who preferred a semilunar transverse lower

uterine incision with the curve directed upward rather than a longitudinal uterine incision ***(Cunningham et al., 2000).***

The surgical technique for performing cesarean section changed from time to time, from surgeon to surgeon and these changes were involved both of the uterine and skin incisions. These include vertical (midline and paramedian) incisions and transverse incisions "pfannenstiel, Maylard, Cherney, Joel Cohen"***(Hofmeyr et al., 2008).***

Despite progress in the management of the medical, psychological, and surgical aspects of obesity, it is a major public health problem ***(Galuska et al., 2008).***

The World Health Organization (WHO) and National Institutes of Health (NIH) define "normal weight" by the Body Mass Index (BMI, calculated as weight in kg divided by the height in meters squared). Normal BMI is 18.5–24.9, overweight is BMI 25–29.9 and obesity is BMI -30. Obesity can be further characterized by BMI as class I (30–34.9), class II (35–39.9) and class III (40), morbidly obese is more than 40kg\m^2 ***(WHO, 2000)***. Obesity is prevalent in women of reproductive age in both high and low-to-middle income countries ***(WHO, 2013).*** The increasing global problem of obesity in maternity care needs a national guideline recommendation for the development of interventions to improve pregnancy outcomes ***(NICE, 2015).***

Maternal obesity is a major risk factor in the short term for both maternal and fetal complications, including maternal and fetal mortality, miscarriages, gestational diabetes mellitus (GDM), pregnancy-induced hypertensive disorders, macrosomia, and cesarean section ***(Guelinckx et al., 2008)***. Panniculus morbidus is mostly seen in patients with morbidly obesity. It is characterized by an edematous, overhanging abdominal mass, due to laxity and redundancy of the abdominal skin, which is most likely linked to the increased rate of seroma formation postoperatively. These patients suffer from pain, recurrent rashes, cellulitis, intertriginous yeast infection, abscess formation, and profound odor ***(Igwe et al., 2000)***.

Pregnant obese women have a high risk of adverse pregnancy outcomes ***(Heslehurst et al., 2011),*** the risk of wound infection, ranging from 12% to 30% as moderately obese women had a 1.7 times higher risk of wound infection and severely obese women had a 4.8 times higher risk of wound infection in comparison with non-obese ***(Alines et al., 2010).***

The obstetricians are often confronted with difficult decisions when such morbid obese patients are about to give birth From a surgical point of view, obesity complicates exposure, increases the duration of the operation, blood loss, and the length of hospitalization ***(Wolfe, 1998).***

Aim of the Work

This study aims to evaluate the efficacy and safety of transverse supraumbilical incision compared to pfannenstiel incision in morbidly obese women undergoing cesarean section.

Chapter (1): Cesarean section

Cesarean delivery rates are shooting all over the world with a rate of (40.5%) in Latin America and the Caribbean region which was the highest regions with CS rates followed by Northern America with a rate of (32.3%) Oceania (31.1%), Europe (25%), Asia (19.2%) and Africa (7.3%) ***(Betrán et al., 2016).***

In Egypt, WHO stated that the Caesarean section rate in Egypt was 27.6% in the year 2010 ***(LuzG et al., 2010)***. According Ministry of Health and Populations reported data; more than %50 (50.8%) of all deliveries were by CS without much difference between urban and rural areas ***(Ministry of Health and Populations [Egypt], El-Zanaty Associate 2015).***

The possible factors employed in the rising CS rates were fear of labor pains, misconception about genital damage after vaginal and misconception about safety of CS delivery for the baby ***(Zwecker et al., 2011)***.

According to the retrospective observational study was done to determine the actual Caesarean Section rate at Tanta University the CS rate was high at Tanta University Hospital, and there was slight increase in the rate through the period of study. The most common indication for cesarean section was

previous cesarean section. The rate of cesarean section showed minimal but continuous rise in the past three years ***(Dawood, et al., 2017).***

Historical, the Roman required the child of a mother dead in childbirth be cut from her womb ***(Pieter and Dongen, 2009).*** So they had begun a religious requirement that mothers not be buried pregnant ***(Högberg et al., 1987),*** and to have evolved into a way of saving the fetus, with Roman practice requiring a living mother be in her 10th month of pregnancy before the procedure was resorted to reflecting the knowledge that she could not survive the delivery ***(Claude Moore Sciences Health, 2012).***

The Roman dictator Julius Cesar was born by the method now known as C-section is apparently false ***(Christopher, 2003),*** although Cesarean sections were performed in Roman times, no classical source records a mother surviving such a delivery. The term has also been explained as deriving from the verb cedere, to cut with children delivered this way referred to as cesones ***(Pieter and Dongen, 2009).***

- **Indications of caesarean section:**

WHO conducted a systematic review of systems used to classify caesarean section, and concluded that the Robson classification is the most appropriate system to fulfill current international and local needs. WHO recommended building upon this to develop an internationally applicable caesarean section classification system ***(Torloni et al., 2011).***