FREQUENCY AND MORBIDITY OF CESAREAN DELIVERY

IN KASR AL-AINY HOSPITAL

THESIS

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Abstract

This study was conducted to determine the cesarean delivery rate in Kasr Al Ainy obstetrics and Gynecology Hospital in 2007. It is a major national and regional referral center .It serve the population of women in Cairo city and is a referral center for district hospitals and the obstetrics and gynecology departments of other hospitals in the city. The data presented in this study were obtained from the medical records and death certificates of the patients in our institution

Their medical records are assessed and analyzed for age, parity, co morbidities, indications for the cesarean delivery and complications of the procedure.

Key words :

Fetal Blood Sampling - Cesarean Section - Surgical Site Infection .

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LIST OF ABBREVIATION

B C Before Christ

C I Confidence Interval

C S Cesarean Section

CTG Cardiotocograph

EDD Expected Date of Delivery

EFM Electronic Fetal Monitoring

FBS Fetal Blood Sampling

NICE National Institute for Clinical Excellence.

NPV Negative Predictive Value

OR Odd Ratio

PPV Positive Predictive Value

RCT Randomized Control Trials

RR Risk Ratio

SSI Surgical Site Infection

VD Vaginal Delivery

VBAC Vaginal Birth After Cesarean

Introduction

Cesarean section has been one of the most important operations in obstetrics and gynecology as of its lifesaving value to both mother and fetus. Since the 1940s the operation has been repeatedly modified to improve its safety, which had made the birth by cesarean section (CS) a practical alternative to vaginal delivery.

The cesarean birth rate showed dramatic rise in the late decades. There is general agreement that the important factors responsible for this change in cesarean rate include the increased safety of the operation due to improvement in surgical technique, better anesthesia, antibiotic use, availability of blood products and the improved prognosis of low birth weight infants. ***(Fireman et al., 1989).***

Despite the inherent in the data, CS is associated with significant reduction in maternal and prenatal mortality. ***(Paul et al., 1995).***

The rate of C.S. continues to rise in many countries as of the broad indications for the procedure .Indeed; in few areas the indications may become more restrictive.

The international **cesarean rate** vary widely, but the upward trend is reflected in both the United States Of America and European countries, signifying a change in obstetric practice ***.(Paul et al., 1995).***

In USA the cesarean rate has increased by 41% since 1996 reaching 29.1% for 2004. The rise is attributable to both an increase in the primary cesarean delivery rate 20.6% in 2004 and a sharp decline in the rate of vaginal birth after previous cesarean (VBAC) .From 2003 to 2004, the VBAC rate fell from 13% to 9.2% per 100 women with a previous cesarean delivery due to the risk of uterine rupture. ***(Hamilton et al ., 2005).***

There are other contributing factors ,including increasing maternal age increasing rate of labor induction ,decreased use of operative vaginal delivery ,and medical-legal concerns***.(Lockwood C.2004).***

Primary cesarean deliveries are an important target for reduction, because they lead to an increased risk for repeat cesarean deliveries. Several large studies ***(London et al., 2004)*** challenged the safety and appropriateness of a trial of labour after cesarean delivery .According to these reports, there is an increased maternal and perinatal morbidity associated with a trial of labour after cesarean delivery compared with a planned repeat cesarean delivery . This lead to decline in (VBAC) and concomitant increase in cesarean delivery rate***. (Greene MF. 2004).***

Although in the developed western world, many women have only one or two children, there are many countries and communities in which larger families are common .Implementation of the aforementioned trend in such populations will obviously lead to an increase in the number of women having multiple cesarean deliveries.

This study was conducted in Kasr Al Ainy Obstetrics and Gynecology Hospital , which is a major national and regional referral center providing state-of- the-art medical service.

AIM OF THE WORK

This study was done to determine the cesarean delivery rate in Kasr AL Ainy obstetrics and gynecology Hospital in 2007 ,to examine the indications for cesarean deliveries to estimate the maternal morbidity associated with cesarean deliveries in Kasr AL Ainy Hospital.

History of Cesarean Section

The origin of the term cesarean is obscure . Three principal Explanations have been suggested :

First, according to legend , Julius Caesar was born in this manner, with the result that the procedure became known as the cesarean 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 17^{th} century the operation was almost invariably fatal .

Second, possible origin is from a Roman law, Lex Regia, mandating that any pregnant female who died must have the fetus from her abdomen. When the ruler of Rome was referred to as the Roman Caesar, the law became known as the Lex Caesar.

Finally, the latin verb "caedare" means to cut. Children delivered from dead mothers were known as "caesones" so; Cesarean may simply mean to remove the fetus by cutting ***(Sewell, 1993).***

Francis Rousset introduced the concept of performing an operation upon a living woman in the sixteenth century. He suggested several obstetric complications that were more horrific than the operation itself. In one example, the fetus had escaped in to the abdominal cavity during labor and later caused an abdominal abcess that was debilitating to the women . Next, he sought to establish the feasibility of the operation

by giving an account of seven females who survived. He reported that another successful pregnancy may follow the operation ***(Young, 1994).***

In the nineteenth century, introduction of diethyl ether as an operative anesthetic by ***Morton*** and of carbolic acid antisepsis by ***Lister*** made the possibility of an abdominal operation as an option for childbirth more feasible.

Early success in the surgery was compromised by the widespread belief that once uterine muscle was incised it could not be safely sutured, principally out of fear of infection. Cesarean deliveries performed in Paris between 1787 and 1876 demonstrated 100 percent maternal mortality, mostly due to infection or hemorrhage. ***(Sewell, 1993).***

The first major surgical advance in the technique of cesarean section was introduced by ***Porro*** in 1876 ***(Miller, 1992)*** influncend by the prevailing concept of not suturing the uterine incisions , ***Porro*** introduced a technique in which the uterine fundus was amputated following the delivery of the fetus and the cervical stump marsupialized to the anterior abdominal wall . Although drastic by today's standards. The ***Porro*** technique resulted in a dramatic decline in maternal mortality ***(speert , 1958)***.

The era of the modern cesarean began in 1882, when Max ***Saenger*** introduced the technique of suturing the uterus. He advocated performing a vertical incision in the uterus that avoided the lower uterine segment. After delivery of the infant and manual extraction of the placenta, ***Saenger*** closed the uterus with two layers. He recommended

silver wire for the deep suture and fine silk for the superficial serosa ***(Saenger, 1882)***.

The Saenger classical cesarean became the mainstay for the next half century. Nevertheless , the ***Porro*** operation remained popular for many years , and in one series from the eastern united states in 1922, 25 percent of abdominal deliveries were performed using ***Porro***' technique ***(Harris, 1922).***

A uterine incision in the lower uterine segment was suggested as early as 1769 by ***Robert Wallace Johnson***, but was not performed until a century later

One of the earliest advocates of its use was ***Fritz Frank*** who performed a low transverse uterine incision extraperitoneal.

Frank argued that his extraperitoneal approach reduced blood loss and infection risk.

In 1912, ***Kronig*** pointed out that better results were obtained not because of the extraperitoneal approach, but because of the uterine incision. He and others reported a maternal mortality rate of less than 4 percent ***(young, 1944)***.

While other obstetricians advocated using a transverse uterine incision transperitoneally , Munro Kerr recommended a semi lunar uterine incision with the curve directed upward in 1926 ***(Kerr, 1926) .***

The general objection to this incision was the danger of extending into the uterine vessels at the edges of the incision. However, Kerr argued that using careful technique the vessels could be avoided. This uterine incision is still used today. With subsequent development of antibiotic therapy and modern blood-baking technique, cesarean section has evolved into one of the safest and most commonly performed major operative procedures.

CESAREAN SECTION INDICATIONS

The indications for C.S can be classified:

-Elective

-Emergencies before labour.

-Emergencies during labour.

(Wilkinson et al.,1998) .

In their study to determine the indications for C.S in Scotland Wilkinson and co-workers **(1998)**, found out that four indications accounted for the operation.

1. Repeat C.S. **(38.9%).**
2. Elective operation f or breech presentation **(7-10%).**
3. Emergency section before labour because of suspected growth retardation and placental insufficiency **(13%)**.

4. Emergencg section during labour because of failure to progress and /or foetal distress (**47.2%).**

A list of indications for C.S. can easily be devised, but in many cases there is more than one indication .The major obstetric indications responsible for the rising rate of C.S. are dystocia, fetal distress, breech presentation , prerivous Cesarean birth, multiple pregnancies and very low birth weight **(*Notzon et al., 1994).***