بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Robson 10-groups classification system to access Cesarean section in Ain Shams University Maternity hospital and its relation to maternal & neonatal outcomes

Thesis

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Presented by

Mona Nasr El-Din Farag

M.B, B.Ch.2008

Faculty of Medicine - Assiut University

Postgraduate Diploma in Obstetrics and Gynaecology 2015

Faculty of Medicine -Ain Shams University

Assistant specialist of Obstetrics and Gynecology

Suez General Hospital

Under supervision of

Prof. Dr. Ihab Hassan Abdel Fattah

Professor of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Dr. Ahmed Adel Tharwat

Assistant professor of Obstetrics and Gynecology

Faculty of Medicine – Ain Shams University

Dr. Mohamed Mahmoud Abd-El Aleem

Assistant Professor of Obstetrics and Gynecology

Faculty of Medicine - Ain Shams University

Faculty of Medicine

Ain Shams University

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List of Contents

List of abbreviations

AMH	: Al Mattaria teaching Hospital
APH	: Antepartum haemorrhage
ASUMH	: Ain Shams University Maternity Hospital
AWMF	: According to Association of Scientific Medical Societies in Germany
CPD	: Cephalopelvic Disproportion
CS	: Cesarean section
CTG	: Cardiotocography
ECV	: External Cephalic Version
EDD	: Expected date of delivery
GW	: Gestational weeks
HELLP	: Hemolysis, Elevated Liver Enzyme Levels and Low Platelets
ICD-10	: International Statistical Classification of Diseases and Related Health Problems-10
ICU	: Intensive Care Unite
IUFD	: Intrauterine fetal death
NICE	: The data are based on the National Institute for Clinical Excellence
OGCUH	: Obstetrics and Gynecology Cairo University Hospital
PICU	: Pediatric intensive care units
PICU	: Pediatric intensive care units
PROM	: Premature rupture of membrane
ROM	: Rupture of membrane
RTGCS	: Robson Ten Group Classification System
SPSS	: Statistical package for social science
TGCS	: Ten Group Classification System
VBAC	: Vaginal birth after cesarean delivery
VD	: Vaginal delivery
WHO	: World Health Organization

List of Tables

Table. No.	Title	Page No.

List of Figures

Introduction

Cesarean section (CS) is delivery of one or more fetuses by incision in the abdominal and uterine wall. The increasing frequency of CS has raised the concerns, particularly when performed in the absence of clear-cut medical indications. Many countries have CS rates higher than 19%. CS rates vary considerably across regions and hospitals within countries, and a closer look at this variation may help to identify factors that contribute to higher than necessary rates ***(Hoxha et al., 2017).***

The indications for CS can therefore be divided into absolute e.g. (absolute disproportion, chorioamnionitis, maternal pelvic deformity, eclampsia and HELLP syndrome….etc) and relative indications e.g. (pathological cardiotocography, failure to progress in labor, previous CS….etc). Elective CS, performed solely at the wish of the mother, without any medical indication, is considered a separate indication ***(Mylonas and Friese 2015).***

Approximately 2-fold increase in maternal mortality and morbidity with cesarean delivery relative to a vaginal delivery: Partly related to the procedure itself, and partly related to the conditions that may have led to needing to perform a cesarean delivery (Infection, thromboembolic disease, anesthetic

complications, surgical injury, uterine atony and delayed return of bowel function) ***(Landon, 2008)***.

CS rates in Egypt have steadily increased, reaching 52% of all deliveries according to the most recent 2014 Egypt Demographic and Health Survey (EDHS) and representing more than a 100% increase in the CS rate since 2005 (***Ministry of Health, 2015).***

Worries about such increases have led the World Health Organization (WHO) to advise that CS rates should not be more than 15%, with some evidence that CS rates above 15% are not associated with additional reduction in maternal and neonatal mortality and morbidity ***(Kazmi et al., 2012)***.

The WHO adopted the Robson classification system as a global standard for assessing, monitoring and comparing CS rates. Robson's system classifies women into 10 groups based on five obstetric characteristics that are routinely documented: parity (nulliparous, multiparous with and without previous CS), onset of labor (spontaneous, induced or prelabor CS), gestational age (preterm or term), fetal presentation (cephalic, breech or transverse), and number of fetuses (single or multiple) ***(Nakamura-Pereira et al., 2016).***

The proposal and implementation of measures to reduce cesarean rates present large challenges and require critical study to identify the highest-risk mothers. In 2001, Robson proposed a simple, clinically relevant, reproducible and reliable classification system for cesareans. This classification system is the monitoring and audit tool that best meets local and international needs by including data commonly recorded at institutions providing different levels of care ***(Betra´n et al., 2014).***

The WHO, in its statement of April 10, 2015, proposed that the Robson classification of CS should be used as a global standard to compare cesarean rates over time at the same hospital or among different hospitals in the same region or country ***(Bolognani et al., 2018).***

Aim of the Work

Is to assess the indications of CS in Ain Shams University Maternity Hospital (ASUMH) according to Robson criteria and its relation to maternal & neonatal outcomes.

Cesarean Section

Nowadays, cesarean delivery has become one of the most common surgical intervention worldwide ***(Charoenboon et al., 2013).*** It is a life-saving intervention for both the mother and her child when vaginal delivery is not possible, contraindicated or carries maternal and fetal complications. In such cases, delay of cesarean section (CS) endangers the life of the mother and the fetus ***(Patel and Nag, 2018).***

The main advantage of CS is prevention of the complications associated with vaginal delivery especially in complicated cases and life-threatening deliveries ***(Inyang-Otu 2014).*** However, CS has its own maternal and fetal complications which risk the current and subsequent pregnancies as well ***(Robson et al., 2015)***.

In recent times, the rate of performing CS is escalating without a clear evidence of the indications and consequences, particularly in middle- and high-income countries, which made it a major controversial public health concern ***(Betrán et al., 2016).*** Therefore, the World Health Organization (WHO) stated: ‘‘There is no justification for any region to have a cesarean section (CS) rate higher than 10–15%” ***(Vindevoghel et al., 2014).***

This declaration augments the fact that there is no scientific evidence indicating any radical maternal and prenatal benefits from this increasing rates. Furthermore, some studies proved that higher rates could be associated with negative outcomes for both the mother and the fetus ***(Keag et al., 2018).***

Prevalence of Cesarean Section

According to the worldwide estimates, 18.6% of all deliveries are through CS, ranging from 6% to 27.2% in the least and most developed regions, respectively. Latin America and the Caribbean region has the highest CS rates (40.5%), followed by Northern America (32.3%), Oceania (31.1%), Europe (25%), Asia (19.2%) and Africa (7.3%) ***(Betrán et al., 2016).***

Based on data from 169 countries, trend analysis showed that during 2015, the global average CS rate was 29.7 million. The largest absolute increases occurred in Latin America and the Caribbean (44.3%), followed by Northen America (32%), Middle East and North Africa (29.6%), East Asia and Pacific (28.8%), Eastern Europe and Central Asia (27.3%), Western Europe (26.9%). The least contribution was from West and Central Africa (4.1%) ***(Boerma et al., 2018).***

Asia had the highest average annual rate of increase (6.4%), in contrast to Northern America where the lowest rate was reported (1.6%) ***(Betrán et al., 2016).***

Countries with the highest CS rates in each region are Brazil (55.6%) and Dominican Republic (56.4%) in Latin America and the Caribbean, Egypt (51.8%) in Africa, Iran