ASSESSMENT OF CESAREAN SECTION TECHNIQUES IN A UNIVERSITY AND A MILITARY HOSPITAL IN EGYPT

Protocol of a thesis

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Introduction

Worldwide increase in CS rate has become an international public health concern. The rates have increased from 5-7% in 1970 to 25-30% in 2003 ***(Christilaw , 2006)***

There is a large variation in the rates of cesarean, both in high and low income countries, as well as between different institutions within these countries ***(Althabe et al, 2006)***

In Egypt, a significant rise in C.S deliveries occurred for all births, from a low of 4.6 % in 1992 to 10.3 % in 2000. However hospital-based C.S was much higher in 1987-1988 13.9 % increasing to 22% in 1999-2000 ***(Khawaja et al, 2004)***

Concern about the rising rate of CS is based predominantly on an increase in maternal mortality and morbidity compared to vaginal delivery (VD), consequences for subsequent pregnancies and deliveries, neonatal respiratory morbidity, and cost implications. ***(Penn et al, 2001)***

Cesarean section in developing countries is associated with significant increases in maternal morbidity particularly following elective cesarean section ***(Oladapo et al,2007)*** and cesarean section without medical indications. Increases in infant morbidity and mortality are associated with cesareans in developing countries ***(MacDorman et al, 2006)*** . However, in low income countries, very low cesarean rates (less than 1%) have been associated with higher maternal and infant mortality linked to the inability to perform a cesarean section when needed ***(Ronsmans et al, 2006)***

The principle indications for C.S delivery: dystocia, suspected fetal compromise, mal presentation , prior C.S and others : placental disorder, multi fetal gestation, maternal medical/ physiological conditions ***(Department of Health, Western Australia, 2002).***

These medical indications changed overtime according to their frequency as, in 1980s the most frequent indication for cesarean section was fetal distress (14.35%) followed by cephalopelvic disproportion (13.99%) and mal position (13.99%). In 2001 fetal distress was still most frequent (18.57%) but followed by pregnant woman diseases (14.07%) and mal position (12.45%). Placenta previa decreased from 2.49% to 0.57% and cephalopelvic disproportion decreased from 13.99% to 8.76% ***(Krychowska et al, 2004)***

Maternal request for CS has also been widely documented. According to a recent estimate between 4% and 11% of Cesarean deliveries worldwide are performed following maternal request in the absence of medical indication. ***(National Institutes of Health, 2006)***

Studies found that long labour and excessive bleeding around delivery didn't increase the likelihood of having a cesarean section ***(Khawaja et al, 2004)***

Interventions aimed at reducing high cesarean rates and inappropriate cesarean practices have involved external cephalic version for breech presentation ***(Hofmeyr et al, 2000),*** encouraging vaginal birth after CS ***(Liang et al, 2004),*** limitation of induction of labour before 41 weeks of gestation ***(St. Luke's, 2007),*** counselling of the mother who requests a CS in the absence of an identifiable reason ***(RCOG, clinical guideline,2004)***

A mandatory second opinion for non emergency cesarean section could also prevent 22 cesarean sections for every 1,000 women in labour without harmful effects to the baby or the mother, the physician had to obtain a second opinion from another physician of equal or higher clinical status. The consulting physician applied evidence-based guidelines and discussed the case with the attending physician, who made the final decision ***(Villar et al, 2004)***

Aim of the work

The aim of this study is to analyze the variation in the practice of cesarean section between military hospitals and university hospitals regarding:

- Rate of cesarean section whether primary or repeated
- Indications of cesarean section
- Measures taken to reduce cesarean section rate
- Technique of cesarean section
- Intra and postoperative maternal and fetal complications

Patients and methods

This study will be conducted in Ain-Shams University Maternity Hospital (representing a university hospital) and Ghamra Military Hospital (representing a military hospital) in the period from 1-July to 31- December 2010. The study will include all women delivered by cesarean section at this period.

Analyzing each case admitted to both hospitals and estimating the indication for C.S, any complication, any measures taken to reduce CS rate, fetal and maternal outcome together with a comparison between the two hospitals.

All patients will be subjected to :

- Complete history taking (present, menstrual, obstetric, contraceptive, past and family history)
- General examination, abdominal examination and vaginal examination, if it's not contraindicated
- Pelvic ultrasound
- Routine laboratory investigations (CBC, blood grouping, Rh, blood glucose level and urine analysis) in addition to the required investigations for special groups of patients (coagulation profile, liver enzymes, etc ....)

Data sheet

The following data sheet will be recorded for each patient:

I. Personal data

1- Name

2- Age “years”

3- Residence:

□ Urban □ Rural

4- Educational level:

□ Low education (Illiterate -Read & write –primary/ Secondary)

□ High education (University level)

5- Occupation of mother :

□ Low occupation □ High occupation □ Housewife

Occupation was categorized into: homemaker, high occupation (Administrative, managerial, professional and clerical jobs) and low occupation (agricultural, fishery, production, service and sales workers) . (Sang et al., 2005)

II. Obstetric & Current delivery data

1- Parity: □□ + □□

2- Mode of previous deliveries:

□ Spontaneous VD □ □ Assisted VD □ □ CS □

3- Antenatal care visits regularity:

□ Regular □ Irregular □ Not done

4- Any medical disorders happen during current pregnancy:

□ Yes □ No

5- Place of delivery:

□ Military hospital □ University hospital

6- Gestational age at the time of termination: □□ weeks

7- Nature of C.S: □ Elective □ Emergency

8- If the C.S done was after :

□ Induction of labour □ Spontaneous onset of labour

9- The indication of C.S:

"Only one indication will be recorded for each C.S, if there's more than one indication the most relevant one will be recorded"

10- If there's measures taken to reduce CS rate:

□External cephalic version

□Vaginal birth after CS

□Limitation of induction of labour before 41 weeks gestation

□Counseling of the mother who request a CS without medical indication

□Documented second opinion for non emergency CS

□Others

III. Maternal operative / post operative course of C.S

1- Non complicated

2- Complicated by:

□ Bladder injury □Internal haemorrhage □Placenta previa □Peripartum hysterectomy □Intestinal injuries □ Lacerations, adhesions and extensions □Septic wound □Post partum haemorrhage □Need for blood transfusion □Others

3- Surgical technique:

- Prophylactic antibiotics: □Yes □No
- Type of anaesthesia: □General □Regional
- Fixing a Urinary catheter: □Yes □No
- Skin incision: □Pfannenstiel □Midline
- Dissection of the rectus sheath inferiorly: □Yes □No
- Rectus muscle cutting: □Yes □No
- Formation of a bladder flap: □Yes □No
- Site of uterine incision: □Lower segment □Upper segment
- Expansion of uterine incision: □Blunt □Sharp
- Method of placental delivery: □Spontaneous □Manual removal
- Uterine closure: □Intra-abdominal □Extra-abdominal
  □Single layer □Double layer Sutures
  □Unlocked □Locked Sutures
- Peritoneal closure: □No □Visceral □Parietal
- Intraperitoneal drain: □Yes □No
- Closure of rectus muscle: □Yes □No
- Subcutaneous drain: □Yes □No
- Closure of subcutaneous tissue: □Yes □No
- Closure of the skin: □ sub cuticular □Interrupted sutures

IV. Fetal out come

1- Fetal life: □Alive and well □Neonatal death □Stillbirth

2- Fetal weight: □,□□ kg

3- Fetal injuries:

□No □Yes "Cut wounds- Bone fractures"

4- Respiratory problems: □No □Yes

5- Need for neonatal intensive care unit admission: □No □Yes

We will calculate rate of caesarean section by dividing the total number of caesarean sections by total number of deliveries

We will compare rates, indications and complications of caesarean section between both hospitals

Results:

Data will be expressed as mean ±SD (range) or as number (%) of cases. Comparison of proportions and means between both groups will be made by using the $\chi 2$ test and independent t-test, respectively. The fisher's exact test will be used when applicable. Analysis will be performed by using the statistical package for the social sciences (SPSS, version 15). The level $P < 0.05$ will be considered the cut off value for significance. $P < 0.05$ will be taken as a significant; the data will be analyzed using SPSS (version 15).

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INTRODUCTION

The number of cesarean deliveries has been growing rapidly in many countries ***(Lancet, 2000).*** Recently, both health professionals and researchers expressed concern about the rise in C.S, with some referring to it as an emerging "Global epidemic" ***(Savage, 2000).***

There is a large variation in the rates of cesarean, both in high and low income countries, as well as between different institutions within these countries ***(Althabe et al, 2006).***

In Egypt, a significant rise in C.S deliveries occurred for all births, from a low of 4.6 % in 1992 to 10.3 % in 2000. However hospital-based C.S was much higher in 1987-1988 13.9 % increasing to 22% in 1999-2000 ***(Khawaja et al, 2004).***

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