# CAESAREAN SECTION TECHNIQUES & COMPLICATIONS

#### **ESSAY**

Submitted for the partial fulfilment of M. Sc. Degree in Obstetrics & Gynaecology



Presented by

Mona Mohama d Omar

M. B., B. ch.
Ain Shams University

57226

Under the Supervision of

Dr. GEHAN ALLAM HAMED SAAD Ass. Prof. Obstetrics & Gynaecology Faculty of Medicine

Ain Shams University

Dr. KHALED MOHAMAD AZIZ DIAB
Lecturer of obstetrics & Gynaecology
Faculty of Medicine
Ain Shams University

Faculty of Medicine Ain Shams University 1994





# Acknowledgement

I shall always feel greatful to Assistant Proffessor Dr. GEHAN ALLAM HAMED, Assitant Proffessor of Obstetrics and Gynaecology for her noble character and gentle behavior and I greately acknowledge the many helpful sugestions that she gave to me. Also her gifted talent and witty hints smoothed a lot of the material, that otherwise seemed tough and unpalatable. Also special thanks to Dr.KHALED AZIZ DIAB, Lectuter of Obestetric and Gynaecology for his kind faithful help valuable suggestion and supervision throughout this work.

Mona Mohamad



# CONTENTS

COTTE	<u>Page</u>	
	1	
Introduction,	2	
Defenitions and termenology.	5	
Historical notes.	7	
Incidence, trends.	10	
Timing of repeat caesarean section.	10	
Types of C.S.	12	
Operative techniques of C.S	13	
* Preoperative preparation	10	
* Procedure	16	
- Anesthesia. for C.S	27	
- Anterior abdominal. wall opening	35	
- Uterine incision.	33 43	
- Extraction of baby	43 52	
- Extraction of placenta	54	
- Uterine repair	64	
- Abdominal. wall closure	68	
* Post. operative Care	00	
* Special procedures	73	
- Extraperitoneal C.S	73 78	
- Post mortem C.S		
- Caesarean hysterectomy	79	
* Suture materials and drains.	84	
Gampliantians at time of C.S		
# Difficulties & Complications at time of C.S	88	
* Introduction.	89	
* Prevention.		
* Maternal complications	91	
- Intraoperative complication.	91	
Difficulties and complications of anesthesia.  Difficulties during abdominal wall and uterine entery. 96		
. Difficulties during abdominal wan and decrine	100	
. Special intraoperative problems.		

	<u>Page</u>
. Traumatic complications.	103
. Intraoperative hemorrhage	109
. Coagulopathy.	116
. Intraoperative infection.	122
. Others.	
Unanticepated gynaecological and surgical problems.	122
C.S. in medically compromised lady.	123
C.S. in the obese patient.	150
- Postoperative complication.	
. Pulmonary complications.	152
. Post partum hemorrhage.	156
. Post operative shock.	158
. Deep venons thrombosis and pulmonary embolism.	159
. Postoperative infections.	164
. Postoperative pyrexia.	166
. Wound complications.	173
. Postoperative paralytic lleus and intestinal obstruction.	182
- Remote complications.	
. Ruptured uterine scar.	187
. Intestinal hernia.	189
. Adhesive intestinal obstruction.	190
* Subsequent delivery after C.S.	193
* Fetal complications.	
- Fetal mortality	198
- Fetal morbidity.	200
# * Summary in English	203
# * References.	210
# * Summary in Arabic	
-	

## List of Tables

	Page No.
Table (1): Absorbable sutures.	85
Table (2): Non-absorbable sutures.	86
Table (3): Factors associated with U.T. injury at 7.527 C.S.	153
Table (4): Most common pathogens normally inhabitating genital tract.	16 <b>9</b>

## **List of Figures**

		<u>Page No.</u>
Fig. (1):	Vertical incision.	28
Fig. (2):	Pfannestiel incision.	30
Fig. (3):	Modified Pfannenstiel incision.	
	(Kustner incision).	33
Fig. (4):	Maylerd incision.	33
Fig. (5):	Uterine wall incision.	38
Fig. (6):	Comparison of lengths of uterine incisions by	
	two techniques.	40
Fig. (7):	Technique of extrection of fetus in cephalic presentation.	44
	Laparoelytrotomy with the fetal head in the vagina.	46
Fig. (9):	Abdominovaginal delivery of the impacted head.	46
Fig. (10)	: Clamping and division of the cord.	48
Fig.(11):	Technique of extraction of fetus in breech presentation.	48
Fig.(12):	Technique of delivery of the heigh floating head during C.S.	5. 49
Fig. (13):	The splint technique for delivery of the low birth weight.	51
Fig.(14):	Technique of delivery of placenta.	53
Fig.(15):	Technique of uterine wall repair in L.S.C.S.	57
Fig.(16):	Technique of uterine wall repair in classical C.S.	57
Fig.(17):	Technique of abdominal wall closure.	67
Fig. (18)	: Technique of subtotal hysterectomy following C.S.	82
Fig. (19)	: Technique of uterine artery ligation.	111
Fig. (20)	: Ligation of the right hypogastric artery.	111
	: The Logothetopulos pack used in pelvic surgery.	114
Fig. (22)	:Bimanual compression of the uterus for control of P.P.H.	114
Fig. (23)	:Pathogenesis of serious puerperal infection.	169
	: Secondary closure of disrupted wound with through and	
	through sutures.	180
Fig. (25)	: Smead - Jones Suture.	180

# Chapter I

Introduction & History

### Introduction

Although caesarean section (C.S) is probably one of the oldest operation in the history of medicen its origin are rather obscure. Very few surgical procedures have been the subject of such bitter controversy, and, it is only in relatively recent times that its performance changed from a last minute attampt to save a child from an almost dead mother to a safe, often planned operation. (Hillan. 1991).

There is always a risk in attampting to elaborate excessively on such a common operation. Each of us will develop our own personal bases based on individual experience and expertise, these differences are superficially distinct but usually have underlying similarities that allow us to achieve similar outcome and expectations At the same time however, it is important to recognize that there is a difference between repetition and habit as opposed to altering a technique in order to meet a specific end. Obviously, with caesarean section there can be several ways to accomplish the same result, and certain situations will dictate the individualization (patient, not physicion) of tecnique. Certainly, one has to be aware of his or her own expertise and at the same time know his or her options. It seems best not to limit oneself to the same technique under all circumstances but to be able to anticipate problems and know how to rectify them in a manner that will avoid undue injury or compromise to the infant and mother (*Field*, 1988).

This reflects the importance of our subject to review various techniques & complications of such important procedure.

## **Defenition**

Caesarean section was known as sectio caesarean, partus hysteromotokey, this procedure had been still of great interest and controversy.

The original defenition in 1740 by the French Obstetrician M. Jean Louis Baudelocque (1746 - 1810) was that operation by which any way is opened for the child than that destined for by nature (Young. 1944).

Caesarean delivery today is generally defined as laparotomy (opening of the abdominal cavity through an anterior incision) plus hystrotomy (an incision into the uterus to remove the fetus). (*Pritchrad, et. al., 1985*).

- Vaginal caesarean operation (old term ) or vaginal hysterotomy is a term used when the fetus is delivered abdominally; the incision instead of being in the lower uterine segment is made into the anterior vaginal wall

(Gabert 1988).

### **Terminology**

## The origin of the name caesarean operation:

Caesarean section was practiced upon dead women in the very early times, and was indeed so prescribed by an incient roman low, originated by Pomphilius (Second King of Rome, 762 - 715 B. C.).

- 3 -

Known as the lex Regia, by which it was forbidden to burry a pregnant woman befor her child had been cut out.

Later in the time of caesar, the low become the lex, Caesarea, and this is the most probable derivation of its present name. The term caesarean section, was first used by James Guillianeau in his book of midwifery, published in 1958 (*Pritchard et. al., 1985*).

The word caesarean as applied to the operatian, was derived; sometimes in the middle ages from the latin verb caedera, to cut an obvious cognate in the word caesara, a cutting, or pause, in a line of verse. (Gabert, et. al., 1988).

This explanation of the term caesarean seems most logical, but exactly when it was first applied to the operation is uncertain. (Gabert, el al., 1988).

Since 'section' is derived from the latin verb "seco", which means "cut" the term caesarean section seems tautolegically (*Pritchard et al.*, 1985).

Therefore it is better to use the term "caesarean birth" rather than "caesarean sectin".

It was once thought that the name came from Julius caesar, who was supposed to be deliverd in this manner, (Young 1944).

- 4 -

Now this idea is not generally believed because his mother Aurelia was still alive when he invaded Britain and the understanding of human anatamy and physiology was so crude during that time that it is inconceivable that any person could have been recoverd from such a major operation (Gabert, et al., 1988).

#### \* Historical notes

It is quite impossible to ascertain exactly when operation of caesarean section was first performed. Caesarean section was practiced upon the dead women in very early times. It was required by religious law as early as 300 B. C. in Egypt and 1500 B. C in India. According to the old Roman law (Lex Regia), it was forbidden to burry a dead pregnant woman befor her child has been taken out. This was as early as 715 B. C. Later in the time of caesars, the law become know as "lex caeserea" and this is the most probable derivation of its present name

(Percival, 1980).

Caesarean section on living is of more recent history. Jacob Nufer 1500 A.D. a swiss saw gelder, who was the first to perform the operation on his wife in her first pregnancy and delivered a living infant. The patient made a good recovery and later years gave birth to other five childern, including one set of twins by natural route. It is of course possible that the condition he dealt with was an advanced ectopic pregnancy (*Pritchard et al.*, 1985).

In 1795 a negrose delivered herself by a self inflected incision into left side and her uterus made with a broken bouchers knife 2.5 inches long and that she recovered from the operation (*Percival*, 1980)

In 1581, Francs and Rausset reported fifteen case histories and claimed that the operation did not injure the life of the mohter or the child (Aldjam, 1980).

- 6 -

In 1876, an important modification of the operation was introduced by Italian obstetrician, Porro, who had amputated the body of the uterus and its appendages after extraction of the fetus and placenta, then he had fixed the cervical stump on the lower angle of the abdomenal wound where the bleeding can be controlled by pressure (Myerscough, 1982).

Kehrer (1881) and Sanger (1882) had improved the operation by suturing the uterine wall befor its replacement into the abdomen. Sanger opened it corefully in 2 layers, a deep layer and a superficial one (Myerscough, 1982).

- Ritgen (1787 1837), introduced the extra peritoneal caesarean section. Such a technique was improved by Gaillared Thomas (1831 1903) latzko and Everard willians Frank (1907), Water (1940) and Norbn (1946) popularized that the operation by extra peritoneal technique.
- Krong in (1912) was the first who have introduced the trans peritoneal lower segment vertical incision. Very sonn Kerr in (1962) modified it to transperitoneal lower segment transverse incision. This technique is the most commonly employed type of caesarean section today (Pritchard, et. al., 1985).