

Acknowledgement

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List of Abbreviations

AC	After Christ
ADP	Adenosine diphosphate
BC	Before Christ
CCT	Controlled cord traction
CD	Cluster of differentiation
COAG	Coagulation mode
C.P.D.	Cephalo pelvic disproportion
CUT	Cutting mode
E.F.M.	Electronic fetal monitoring
EGF	Epidermal growth factor
FGF	Fibroblast growth factor
HB	Hemoglobin
HIV	Human immunodeficiency virus
IL-1	Interleukin 1
IQR	Interquartile range
I.T.P.	Idiopathic thrombocytopenic purpura
L/S ratio	Lecithin sphingomyelin ratio
NSAIDs	Non-steroidal anti-inflammatory drugs
PACU	Post anesthesia care unit
PDGF	Platelet derived growth factor
PGE1	Prostaglandin E1
PGF2	Prostaglandin F2

PMN's	Polymorphonucleocytes
RBS	Random blood sugar
RCOG	Royal college of obstetricians & gynecologists
RCTs	Randomized controlled trials
TGF β	Transforming growth factor beta
TNF α	Tumor necrosis factor alpha
VAS	Visual analogue scale
VBAC	Vaginal birth after cesarean section

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Introduction

The use of scalpels for surgical incisions dates back to ancient Egyptian times. They used obsidian, which is naturally occurring volcanic glass, to make incisions for embalming. Modern surgical scalpels are usually made of hardened steel for better sharpness and precision. Electrocautery is an alternative option practiced these days (*Nasir and Aftab, 2011*).

Although diathermy is increasingly used for underlying tissue dissection, cutting, and hemostasis, its use for making skin incisions is not gaining favor. Fear of deep burns with diathermy and resultant scarring continues compared with the scalpel, which produces a clean, incised wound with minimal tissue destruction (*Johnson and Serpell, 1990*).

However, the use of an electrode delivering a pure sinusoidal current allows tissue cleavage without damage to surrounding areas. Electrosurgical incision of this type is not a true cutting incision. This method heats cells within the tissue so rapidly that they vaporize, leaving a cavity within the cell matrix. The heat created dissipates as steam rather than being transmitted into adjacent tissues. As the electrode is moved forward, new cells are contacted and vaporized with the creation of an incision. This may explain the absence of tissue charring and the subsequent healing of tissues with minimal scarring (*Dixon and Watkin, 1990*).

An experimental and clinical study confirmed that diathermy incision results in slower wound healing and increased infection than scalpel incision (*Ji et al, 2006*) however, a double blind randomized clinical trial concluded

that diathermy incision in both elective and emergency general surgery has significant advantages compared with the scalpel because of reduced incision time, less blood loss, and decreased early postoperative pain (***Muhammad Shamim, 2008***).

Previous studies have compared electrosurgical and scalpel incisions individually in terms of incision time, incision blood loss, postoperative pain and infection (***Hussain and Hussain 1988; Johnson and Serpell 1990***). No single study to date has looked at these parameters in combination, and there has been no work focusing on these parameters in lower segment caesarian section.

Aim of Work

To compare the efficacy of diathermy versus cold knife in skin incision during cesarean section.

Cesarean Section

Incisions in the abdominal wall (Laparotomy) and the uterine wall (Hysterotomy). This definition does not include non-surgical expulsion of the embryo or the fetus from the uterine cavity or the tubes following uterine rupture or ectopic pregnancy (*Cunningham et al., 2010*).

The terms cesarean section, cesarean delivery, and cesarean birth may be used to describe the delivery of a fetus through a surgical incision of the anterior uterine wall. Cesarean section is a tautology; both words connote incision. Therefore, cesarean birth or cesarean delivery, are preferable terms (*Richard et al., 2000*).

The surgical techniques for performing cesarean delivery has changed from time to time, from surgeon to surgeon and these changes were involved both of the uterine and skin incisions. Only a small numbers of these techniques have been evaluated in randomized controlled trials (RCTs) (*Sewell and Washington, 1993*).

Historical Background

The exact origin of the term cesarean delivery is unclear. The popular believes that Julius Cesar 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 Cesar lived for many years after his birth in (100 BC) and as late as the 17th century, the operation was almost invariably fatal. Second, The operation, whether done on living or dead women, it is not mentioned by any medical writer before the middle ages (*Cunningham et al., 2010*).

It has been widely believed that the name of the operation is derived from a Roman law, supposedly created by Numa Pompilius (8th century BC), ordering that the procedure be done upon women dying in the last few weeks of pregnancy in hope of saving the child. This explanation holds that this lex regia, later called lex cesarean and the operation itself became known as the cesarean operation. The term cesarean may have arisen in the Middle Ages from the Latin verb caedere (to cut), and the term section is derived from the Latin verb seco (cut) (*Sewell and Washington, 1993*).

In 1500 AC, the first successful cesarean delivery on a living women was thought to have been performed by Jacop Nufer, who operated on his wife following several days of unsuccessful labour (*Larry et al., 2002*). While the first authenticated cesarean delivery was performed by Trautmann of Wittenberg in 1610, with the mother succumbing to post-operative infection (25) days later (*Larry et al., 2002*).

In 1769, a uterine incision in the lower uterine segment was suggested as early by Robert Wallace, but was not done until a century later (***Sewell and Washington, 1993***).

In 1846, the introduction of diethyl ether anesthetic agent at Massachusetts General Hospital were increased the feasibility of major abdominal operations although, mortality rates for cesarean birth still high secondary to infections and bleeding (***Richard et al., 2000***).

In 1876, Eduardo Porro, an Italian Professor, recommended hysterectomy combined with cesarean birth to control uterine hemorrhage and prevent systemic infection, and it is considered the first major surgical advance in the technique of the cesarean section (***Steven G. et al., 1996***). Eduardo Porro technique resulted in a dramatic decline in the maternal mortality (***Spreet and Eduardo, 1958***).

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, then he closed the uterus in two layers by using silver wire for the deep suture and fine silk for the superficial serosa. The Saenger technique revolutionized obstetrics, allowing the preservation of the childbearing function (***Larry et al., 2002***).

In 1907, Fritz Frank one of the earliest advocates of the use of a low transverse uterine incision extraperitoneally. Frank argued that his extra peritoneal