Spinal versus General Anesthesia in Caesarean Section Regarding to Home Readiness Discharge

Thesis

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Abeer Abd Ellateef

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List of Abbreviations

Abb.	Meaning
ACOG	American College of Obstetricians and Gynecologists
ASU	Ambulatory surgical unit
BC	Before Christ
BMI	Body mass index
Bp	Blood pressure
CDMR	Cesarean delivery on maternal request
CO_2	Carbon Dioxide
CS	Cesarean section
CSF	Cerebrospinal fluid
CTG	Cardiotocography
DSPT	Deep septic pelvic thrombophlebitis
EFM	Electronic fetal monitoring
ET	End tidal
ETT	Endotracheal tube
GABA	Gamma-aminobutyric acid
GI	Gastrointestinal
GIT	Gastrointestinal tract
HIV	Human immunodeficiency virus
I.V.	Intravenous
IM	Intramuscular
IU	International Unit
Kg	Kilogram
L	Litre
LA	Local anaesthesia
M	Meter
MFMU	Maternal-Fetal Medicine Units
Mg	Milligram
Min	Minute

Abb.	Meaning
NMDA	N-methyl-D-aspartate
NSAID	Non-steroidal anti-inflammatory drugs
OR	Operating room
OVT	Ovarian vein thrombophlebitis
PACU	Postanesthesia care unit
PADS	Postanesthesia Discharge Scoring System
PO	Per oral
POI	Postoperative ileus
PONV	Postoperative nausea and vomiting
RA	Regional anaesthesia
RCOG	Royal College of Obstetricians and Gynaecologists
RDS	Respiratory distress syndrome
TTN	Transient tachypnea of the newborn
VBAC	Vaginal birth after cesarean

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Introduction

Delivery by caesarean section is by far one of the most commonly performed operations all over the world. Approximately 18.5 million caesarean sections are performed yearly worldwide ***(WHO, 2010).***

About 40% of the countries have CS rates <10%, about 10% have CS rates between 10 and 15%, and approximately 50% have CS rates >15%. Countries with CS rates<10% account for only 25% (4.5 millions) of the global CS but for 60% (77 millions) of the total number of births worldwide. On the other hand, 73% (13.5 millions) of the total number of CS are performed in the countries with CS rates >15% where 37.5% (48.4 millions) of the total number of births occur ***(WHO, 2010).***

In Egypt, more than one-half of deliveries in the five-year period before the 2014 were by caesarean section. Caesarean deliveries were more common in urban areas than in rural areas (60 % and 48 %, respectively) ***(El-Zanaty and Associates, 2014).***

When medically justified, caesarean section can effectively prevent maternal and perinatal mortality and morbidity. However, there is no evidence showing the

benefits of caesarean delivery for women or infants who do not require the procedure. As with any surgery, caesarean sections are associated with short and long term risk which can extend many years beyond the current delivery and affect the health of the woman, her child, and future pregnancies. These risks are higher in women with limited access to comprehensive obstetric care ***(Lumbiganon et al., 2010).***

This operation requires effective anaesthesia which can be regional (epidural or spinal) or a general anesthesia. The type of anaesthesia used and the care with which it is administered is an important determine of the outcome of caesarean section ***(Anderson et al., 1987).***

Both spinal and general anaesthesia used for caesarean section have certain advantages and disadvantages and there is no method which is completely ideal. The most important factors for choice of anaesthesia are; pregnant systemic problems and wishes, the urgency of the operation, and the surgeon and the anesthetists experience ***(Wu, 2006).***

General anaesthesia refers to the loss of the ability to perceive pain associated with loss of consciousness produced by intravenous or inhalational anesthetic agents.

For caesarian section, this involves the use of thiopentone for induction, tracheal intubation facilitated by Suxamethonium, positive-pressure ventilation of the lung with a nitrous oxide/oxygen mixture plus a volatile agent, and a muscle relaxant ***(Thorburn, 1998).***

Spinal anaesthesia refers to the use of local anesthetic solutions to produce circumscribed areas of loss of sensation. The spinal anaesthesia used for caesarean section involves the infiltration of a local anesthetic agent, usually bupivacaine, into the surroundings of the spinal cord through the lower back of the woman (the drug is injected directly into the subarachnoid space ***(Thorburn, 1998).***

Over the last 30 years, the use spinal anaesthesia is rapidly increasing ***(Ashok, 2010).***

Regional anaesthesia nowadays, has gained worldwide acceptance and its physiological effects provide a rationale for expecting a better outcome with this technique ***(Crawford and Anmette, 2001).***

Spinal anaesthesia is relatively easy to perform, gives excellent anaesthesia with a low potential of toxicity, allows mother to be awake and interact immediately after the birth of the baby. Compared to general anaesthesia it

offers less maternal morbidity, comparable less blood loss ***(Danelli et al., 2009).***

It also enables early recovery of gastrointestinal functions, prolonged interval to first analgesic requirement, less analgesic consumption and early ambulation ***(Havas et al., 2013).***

However, spinal anaesthesia is not free from side effects and has its own complications like maternal hypotension, hypothermia, post-operative headache accidental total spinal anaesthesia and patients at risk of heavy peripartum hemorrhage may not tolerate the haemodynamic effects of regional anaesthesia ***(Jenkins and Khan, 2003).***

The lack of medical personnel trained in the technique would also exclude the use of spinal anaesthesia **(*Cunningham et al., 2010).***

General anaesthesia is a more quickly administered procedure and is often preferred in cases where speed is important ***(Enkin et al., 2002).***

It also used in certain situations like contraindication to regional anesthesia, failed regional anaesthesia and maternal request ***(Afolabi et al., 2010).***

The risks include aspiration of stomach contents, awareness to surgical procedure (due to inadequate anesthesia), failed intubations, and respiratory problems for both mother and baby ***(Afolabi et al., 2003).***

In general, general anaesthesia is preferred for emergency caesarian section since it provides rapid onset of action and more stabilization of patient's circulation and vital signs, on the other hand regional anaesthesia is preferred for elective operations because of its lower cost and relatively lower risk of drugs complications to the mother and the fetus ***(Almomany, 2012).***

Spinal anaesthesia compared to general anesthesia, may allow faster maternal recovery and readiness for discharge to home which offers social and economic benefits.

Aim of the Work

To compare between general and spinal anaesthesia regarding the maternal readiness for discharge and return to home.

Caesarean Section

Incidence of Caesarean Section:

Since 1985, the international healthcare community has considered the ideal rate for caesarean sections to be between 10% and 15%. Since then, caesarean sections have become increasingly common in both developed and developing countries ***(WHO and HRP, 2015).***

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The trend of increase in caesarean section rate is more apparent in developed countries than in third world countries. One in 12 births in developing world was