# Comparative Study Between the Early Postoperative Outcomes of Closure Versus Non-Closure of the Peritoneum Following Caesarean Section in Patients with Previous Caesarean Sections

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بسم الله الرحمن الرحيم

# قَالُواْ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ

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# ABSTRACT

Peritoneal closure is a controversial issue among obstetricians and gynaecologists.

Most studies showed no difference in the other outcome measures including infection/febrile episodes, analgesic/anaesthetics requirement, bowel function restoration, post-operative stay and adhesion formation. . More studies are needed to examine the long-term morbidity associated with the closure or the non-closure of the peritoneum.

**Keywords:**

Postoperative outcomes, Peritoneum, Caesarean section.

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# LIST OF ABBREVIATIONS

| | |
|---|---|
| **ANS** | Autonomic Nervous System |
| **APC** | Antigen-Presenting Cells |
| **APH** | Anti Partum Hemorrhage |
| **ART** | Assisted Reproductive Techniques |
| **bFGF** | Basic Fibroblast Growth Factor |
| **BL** | Basal Lamina |
| **CAM** | Cell Adhesion Molecule |
| **CGRP** | Calcitonin Gene–Related Peptide |
| **CNS** | Central Nervous System |
| **COX** | Cyclo-Oxygenase |
| **CPD** | Cephalo Pelvic Disproportions |
| **CRF** | Corticotropin-Releasing Factor |
| **ECM** | Extra Cellular Matrix |
| **EGF** | Epidermal Growth Factor |
| **ENS** | Enteric Nervous System |
| **FDP** | Fibrin Degradation Products |
| **ICAM** | Intracellular Adhesion Molecule |
| **ICAM-1** | Intercellular Adhesion Molecule |
| **IFN** | Interferon |
| **Ig** | Immunoglobulin |
| **IL** | Interleukin |
| **IUGR** | Intra Uterine Growth Restriction |
| **IVF** | Invitro Fertilization |
| **MCP** | Monocyte Chemotactic Protein |
| **MHC** | Major Histocompatibility Complex |
| **MMC** | Migrating Motor Complex |
| **MMP** | Metalloproteinases |
| **MS** | Milky Spots |
| **PA** | Plasminogen Activator |
| **PAF** | Platelet Activating Factor |
| **PAI** | Plasminogen Activator Inhibitor |
| **PD** | Postnatal Day |
| **PDGF** | Platelet Derived Growth Factor |
| **PID** | Pelvic Inflammatory Disease |

| | |
|---|---|
| **PMN** | Polymorphonuclear Neutrophils |
| **POI** | Postoperative Ileus |
| **SM** | Serosal Membranes |
| **TGF-B** | Transforming Growth Factor-Beta |
| **TIMP** | Tissue Inhibitors Of Metalloproteinases |
| **TNF** | Tumour Necrosis Factor |
| **tPA** | Tissue Plasminogen Activator |
| **uPA** | Urokinase-Like Plasminogen Activator |
| **VCAM** | Vascular Adhesion Molecule |
| **VCAM-1** | Vascular Cellular Adhesion Molecule |
| **VEGF** | Vascular Endothelial Growth Factor |

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# Introduction

# INTRODUCTION

A **Caesarian section** (or **Cesarean section** in American English), also known as **C-section** or **Caesar**, is a surgical procedure in which incisions are made through a mother's abdomen (laparotomy) and uterus (hysterotomy) to deliver one or more babies. It is usually performed when a vaginal delivery would put the baby's or mother's life or health at risk, although in recent times it has been also performed upon request for childbirths that could otherwise have been natural. **(Shahbazi, Shapur 2009).** The World Health Organization (WHO) recommends that the rate of Caesarean sections should not exceed 15% in any country. They are however performed 25% of the time in Asian countries. It is recommended that they only be performed when medically necessary as in the cases of breech presentation **(Savage 2007).**

## *There are three theories about the origin of the name:*

1. The name for the procedure is said to derive from a Roman legal code called "Lex Caesarea", which allegedly contained a law prescribing that the baby be cut out of its mother's womb in the case that she dies before giving birth.

2. The derivation of the name is also often attributed to an ancient story, told in the first century A.D. by Pliny the Elder, which claims that an ancestor of Caesar was delivered in this manner.

3. An alternative etymology suggests that the procedure's name derives from the Latin verb *caedere* (supine stem *caesum*), "to cut," in which case the term "Caesarean section" is redundant.

The Ancient Roman Caesarean section was first performed to remove a baby from the womb of a mother who died during childbirth, Caesarean section usually resulted in the death of the mother; the first recorded incidence of a woman surviving a Caesarean section was in 1500, in Siegershausen, Switzerland: Jakob Nufer, a pig gelder, is supposed to

have performed the operation on his wife after a prolonged labour **(Landon, Rouse, *et al.* 2006).**

## *Types*

There are several types of Caesarean section (CS). An important distinction lies in the type of incision (longitudinal or latitudinal) made on the uterus, apart from the incision on the skin **(Cunningham et al., 2005)**

- The *classical Caesarean section* involves a midline longitudinal incision which allows a larger space to deliver the baby. However, it is rarely performed today as it is more prone to complications.
- The lower uterine segment section is the procedure most commonly used today; it involves a transverse cut just above the edge of the bladder and results in less blood loss and is easier to repair.
- An *emergency Caesarean section* is a Caesarean performed once labour has commenced.
- A *crash Caesarean section* is a Caesarean performed in an obstetric emergency, where complications of pregnancy onset suddenly during the process of labour, and swift action is required to prevent the deaths of mother, child(ren) or both.
- A *Caesarean hysterectomy* consists of a Caesarean section followed by the removal of the uterus. This may be done in cases of intractable bleeding or when the placenta cannot be separated from the uterus.
- Traditionally other forms of Caesarean section have been used, such as extra peritoneal Caesarean section or Porro Caesarean section.
- A *repeat Caesarean section* is done when a patient had a previous Caesarean section. Typically it is performed through the old scar.

Both visceral and parietal peritoneal layers have been traditionally closed in separate layers.

The proponents of this technique claim that it helps re-establish anatomical relations, reduces the risk of infection, prevents incisional hernia and prevents adhesion formation **(Duffy and Zerega 1994)**. In fact studies have shown many advantages of leaving the peritoneum open after CS as this

reduces operating time, the need for postoperative analgesie and improves maternal satisfaction **(RCOG. Guidelines, 2004)**

It is difficult to study the effects of caesarean sections because it can be difficult to separate out issues caused by the procedure itself versus issues caused by the conditions that require it. For example, a study published in the February 2007 issue of the journal *Obstetrics and Gynecology* found that women who had just one previous caesarean section were more likely to have problems with their second birth**(Cullinane et al, 2009).** Women who delivered their first child by Caesarean delivery had increased risks for malpresentation, placenta previa, antepartum hemorrhage, placenta accreta, prolonged labor, uterine rupture, preterm birth, low birth weight, and stillbirth in their second delivery. However, the authors conclude that some risks may be due to confounding factors related to the indication for the first caesarean, rather than due to the procedure itself**.(Tucker, Heard et al 2007).**