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Original Research Article

Research to Investigate the Impact of Several Caesarean Procedures on the Well-Being of both the Mother and the Foetus

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Abstract

Aim: The aim of the present study to determine the effects of repeated caesarean sections on maternal and fetal outcome.

Methods: The Department of Obstetrics and Gynaecology, NMCH, Patna, Bihar, India, undertook this prospective, comparative, observational, and cross-sectional research from January 2017 to December 2017. After being briefed about the trial, women hospitalised after 28 weeks who met the inclusion criteria were enrolled.

Results: Both primary and repeat caesarean sections were performed on 900 women. One CS has been experienced by 310 ladies. For 200 instances, elective CS was done. Vaginal birth was successful 80 times and unsuccessful 30 times. Emergency repeat CS was indicated by foetal discomfort and labour stagnation. Primary indication for elective repeat CS was CPD, then foetal discomfort. 12% had adhesions, 8% UV fold obliteration.

Conclusion: If treated appropriately, repeat CS may result in vaginal delivery despite increased maternal risks. Discuss maternal and perinatal risks and advantages of planned vaginal delivery following caesarean section and elective repeat CS. Preterm birth may be avoided by elective repeat CS at 39 weeks.

Keywords: Caesarean section, maternal, fetal, outcome

Introduction

A Caesarean section (CS) is a frequently performed obstetric technique that is intended to address issues related to vaginal birth, such as cephalo-pelvic disproportion and foetal distress. Nevertheless, it poses potential dangers to both the mother and the foetus. The potential dangers to the mother include infection, problems related to anaesthesia, surgical damage, bleeding, and thromboembolism. [1] Repeated caesarean sections can heighten the likelihood of thick adhesions, bladder damage, intestinal injury, and complications connected to the incision, such as wound dehiscence. Emergency surgeries are anticipated to result in higher rates of both maternal and foetal problems as compared to elective operations. [2] According to data provided by the World Health Organisation (WHO), the worldwide incidence of caesarean sections (CSs) has seen a substantial increase over the last three decades. [3] Although the prevalence of caesarean sections is rising, the maternal death rate linked with it is falling as a result of advancements in anaesthetic procedures, the availability of antibacterial drugs, and current blood banking techniques. [4] Women who have had several caesarean sections are at a higher chance of experiencing intra-operative problems and uterine rupture, which categorises them as a high-risk category. [5] There is worry over the higher caesarean section (CS) rate due to the greater risk of illness and death compared to vaginal deliveries. Severe maternal morbidities, such as postpartum haemorrhage, admission to critical care units, and a hospital stay lasting more than seven days, have seen a substantial rise. Perinatal difficulties include a decreased Apgar score and a substantial prolongation of the duration of stay in the Neonatal Intensive Care Unit (exceeding seven days). [6] Caesarean delivery (CD) is a frequently performed surgical operation in Saudi Arabia. 2022 research revealed a noteworthy rise in CD rates, which was mostly due to clinician practice rather than maternal factors. [7]

A Caesarean section (CS) is a surgical operation in obstetrics that involves creating an incision in the abdomen and then in the uterus to safely deliver a baby for both foetal and maternal reasons. A CS may be classified as either voluntary or emergency. [8,9] The prevalence of caesarean births has increased due to advancements in anaesthetics and other surgical methods, resulting in better results and enhanced

safety of the procedure. [10] Approximately 22.9 million surgical procedures for cardiovascular diseases are projected to be performed annually worldwide. Caesarean section (CS) is a very effective method for reducing the occurrence of maternal and perinatal death and illness. However, it is important to note that CS still has a greater risk of maternal illness and death compared to vaginal birth, particularly between the 11th and 12th week of pregnancy. The American College of Obstetricians and Gynaecologists (ACOG) has shown that caesarean section (CS) considerably increases the likelihood of pregnancy-related illness and death for women, in comparison to those who give birth vaginally. [11] As the frequency of caesarean sections (CS) grows, it is expected that there would be a rise in major maternal complications. This is particularly true in low-resource settings where there is limited ability to execute safe surgical procedures and manage the difficulties that may arise. [10-13] In low- and middle-income countries (LMICs), maternal mortality rates are much higher, especially in sub-Saharan Africa where it is the highest. Among women who have caesarean section (CS) delivery, 62.5% experience adverse maternal outcomes. [14] Maternal mortality after caesarean section (CS) is about three times more than that of vaginal birth, with rates ranging from 10.1 to 31.9 fatalities per 10,000 patients. The postpartum haemorrhage accounts for 61% of cases, hypertensive difficulties for 39.2%, and puerperal infection for 25.1%. Other indirect obstetric causes contribute to 15% of maternal mortality in these cases. [15-17] Furthermore, about 73% of neonatal fatalities after childbirth occur during the intrapartum period in these locations. Additionally, the mortality rate for newborns after caesarean delivery in sub-Saharan Africa is greater than the worldwide average. [18-19] Since 2000, Ethiopia, the most populous landlocked nation in sub-Saharan Africa, has had a 50% reduction in its maternal death rate. However, the current maternal mortality rate of 412 deaths per 100,000 live births and infant mortality rate of 67 deaths per 1,000 births are still considered too high.
The objective of this research is to investigate the impact of several caesarean procedures on the well-being of both the mother and the foetus.

Materials and Methods

1. The Department of Obstetrics and Gynaecology, NMCH, Patna, Bihar, Indiaundertook this prospective, comparative, observational, and cross-sectional research from January 2017 to December 2017. After being briefed about the trial, women hospitalised after 28 weeks who met the inclusion criteria were enrolled. 200 individuals with LSCS and equivalent numbers with vaginal delivery were studied.

Exclusion Criteria

- Previous history of classical caesarean section.
- History of previous surgery on uterus (Myomectomy).
- History of abortions or MTP.
- Multifetal pregnancy.
- History of placenta previa in previous pregnancy.
- Patients with other medical disorders

The data was analyzed using computer software Microsoft Excel and SPSS version 21.0 for Windows. Data reported as mean ± standard deviation and proportions as deemed appropriate for quantitative and qualitative variables respectively. A p-value of <0.05 was considered as statistically significant.

Results

Table 1: Indications for CS in VBAC cases, elective CS, repeat CS in failed TOL

Indications	Elective repeat C S	VBAC	C S infailed TOL
Fetal distress	32	15	18
Breech	8	7	-
Transverse lie	4	6	-
CPD	80	8	-
PROM	4	8	-
PIH	2	4	-
Placenta previa	1	3	-
Non progress of labour	3	9	8
Unknown	4	20	-
High risk pregnancy	17	-	-
Threatened rupture	1	-	4
Total 310	200	80	30

One CS has been experienced by 310 ladies. For 200 instances, elective CS was done. Vaginal birth was successful 80 times and unsuccessful 30 times. Emergency repeat CS was indicated by foetal discomfort and labour stagnation. Primary indication for elective repeat CS was CPD, then foetal discomfort.

Table 2: Incidence of per operative complications in repeat cesarean section

Complications	Percentage
Adhesions	12
Obliterated UV fold	8
Thinned out lower segment	3
Scar dehiscence	1
Cesarean hysterectomy	0.50
Broad ligament hematoma	0.50
Others	2

12% had adhesions followed by 8% with obliterated UV fold.

Discussion

A caesarean birth is a surgical procedure used to deliver a foetus that weighs 1000g or more, or has a gestational age of 28 weeks or more in Ethiopia, and 20 weeks or more in industrialised nations. This is done by making an incision on the front wall of the abdomen and the uterus. [20,21] The escalating frequency and quantity of caesarean births have been linked to many maternal hazards, including peripheral organ injury, haemorrhage, need for critical care, prolonged surgical duration, hysterectomy, and mother mortality. [22-24] A total of 900 women had caesarean section, which included both primary and repeat caesarean sections. A total of 310 women had a prior history of one caesarean section. A total of 200 cases were completed for the elective CS. 80 patients had successful vaginal delivery, whereas 30 cases experienced trial failure. Previous caesarean surgery (CS) is a significant reason for opting for a repeat CS because to the heightened risks involved with vaginal birth after caesarean section (VBAC). with fact, previous CS accounts for 8-40% of repeat caesarean sections. Both attempting a vaginal delivery after a previous caesarean section and opting for another caesarean section pose potential dangers, such as maternal bleeding, infections, surgical complications, removal of the uterus, and even death. As the frequency of trial of labours after caesarean section (TOLAC) has been growing, there have been instances of uterine scar dehiscence or rupture, which may lead to maternal and foetal morbidity and death. A successful vaginal birth after caesarean (VBAC) is associated with less difficulties compared to choosing to have another caesarean section (CS) without medical need. Conversely, an unsuccessful attempt at labour after a previous caesarean section is associated with greater complications than choosing to have another caesarean section without attempting labour. [25] ToL was most prevalent among women under the age of 30 who were single and had attended more than four antenatal care (ANC) sessions. This might be attributed to the financial constraints faced by unmarried women, which may prevent them from affording the expenses associated with a caesarean section. Additionally, their lack of bargaining power may hinder their ability to negotiate for an elective caesarean section. [26] Moreover, previous non-recurrent indications for caesarean section (CS) were shown to have a higher rate of successful trial of labour (ToL) compared to recurrent indications, such as failure to advance. 12% of the participants had adhesions, whereas 8% had erased UV fold. [27] The primary reasons for performing an emergency repeat caesarean section were foetal discomfort, followed by lack of progress in labour. Elective repeat caesarean section (CS) was mostly indicated due to cephalopelvic disproportion (CPD), which was then followed by foetal discomfort. 12% of the participants exhibited adhesions, whereas 8% had erased UV fold. Hence, it is crucial to implement preventive measures, including educating pregnant women during antenatal care (ANC) about the factors that contribute to successful delivery, potential risks, and future prospects of different delivery methods. Additionally, it is important to monitor labour using the partogram correctly, facilitate labour progression with the use of oxytocin, and prevent unnecessary caesarean sections performed during the second stage of labour by providing training, resources, and in their research, Sharma et al [28] found a prevalence of 1.8% for rupture uterus, whereas Vikas D et al [29] reported a prevalence of 2%. Singh A et al documented a rupture uterine incidence of 1.69% in patients with a history of prior caesarean section, and 0.15% in individuals without a previous caesarean section. [30]

Conclusion

Repeat caesarean section (CS) has a higher overall risk for mothers. However, with proper management, it is feasible for women to have a healthy vaginal birth. Patients should receive counselling on the maternal and perinatal risks and advantages associated with intended vaginal

delivery following caesarean section and elective repeat caesarean procedure. It is recommended to schedule a repeat caesarean section at 39 weeks of gestation to minimise the likelihood of preterm delivery.

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