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## A retrospective evaluation of maternal and fetal result in vaginal birth after caesarian section

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### Abstract

**Introduction:** It is estimated that 60%-80% of women with c-section history can have vaginal delivery. In these cases, CS possibility should be considered if fetal heart rate decreases or lack of progress in labor. So, VBAC should be performed in equipped hospitals with the supervision of an obstetrician.

**Materials and Methods:** Patients with two or more Caesarian section, Classical Caesarian section, Non Vertex presentation or Twin pregnancy were excluded from study. In all cases (booked and unbooked), soon after admission, full history and abdominal and vaginal examinations are carried out in order to assess the size of the fetus, position and presentation of the fetus, cervical dilatation, status of the membrane, bishop score, and adequacy of maternal pelvis.

**Results:** Out of 224 women with previous Caesarian section, 189 were given trial of labour (83.81%). Out of 189 women with previous LSCS who were given trial of labour, 110 women had successful vaginal births. Success rate of Vaginal birth after Caesarian Section was observed to be 59.17%.

**Conclusion:** The findings in this study support the previous studies which showed no significant difference in the maternal and perinatal mortality outcome of Cesarean delivery between women with severe pre-eclampsia who had regional and those that had general anesthesia.

**Keywords:** Maternal, Fetal outcome, vaginal birth after

### Introduction

It is a trial of vaginal delivery in selected cases of a previous CS in a well-equipped hospital. In 1916, Cragin popularized the dictum, "once a caesarean section, always a caesarean section" Pregnant women with one previous CS are faced with two delivery options: vaginal birth after cesarean (VBAC) section or elective repeat CS. Rates of successful VBAC vary from one study to another. For instance, a large study in the USA (33,560 women) showed that women attempting a vaginal birth after a prior CS had around 73% of success rate<sup>[1-3]</sup>. VBAC section has less complications and faster recovery compared with CS. Conflicting data exist concerning the safety of induction of labor (IOL) in women with previous single lower segment CS (LSCS). The greatest impact of failed trial of VBAC is emergency CS<sup>[3,4]</sup>.

It is estimated that 60%-80% of women with c-section history can have vaginal delivery. In these cases, CS possibility should be considered if fetal heart rate decreases or lack of progress in labor. So, VBAC should be performed in equipped hospitals with the supervision of an obstetrician. Most women are not aware of the possibility of VBAC, or affected by factors like fears and anxiety about maternal and neonatal complication of VBAC. Therefore, this issue can be considered in perinatal education<sup>[3,5]</sup>.

The optimal anesthetic method for Cesarean section for women with pre-eclampsia remains unsettled. However, several studies have demonstrated the safety of sub-arachnoid block (spinal), epidural and combined sub-arachnoid block-epidural anesthesia for Cesarean section in women with pre eclampsia<sup>[9]</sup>. Studies comparing general anesthesia with other anesthetic methods are scarce. A literature search identified only one study which included general anesthesia in its comparative analysis<sup>[10]</sup>. This is understandable as most of these studies took place in developed countries where epidural and combined spinal-epidural anesthesia are routinely used for Cesarean section for pre-eclampsia. On the contrary, physicians in most developing countries like Nigeria are still restricted to either sub-arachnoid block or general anesthesia. This is due to the high cost and unavailability of epidural sets and scarcity of personnel with the requisite skills for epidural anesthesia<sup>[11]</sup>. This underscores the need for studies to compare the outcome of Cesarean section using sub-arachnoid block and general

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anesthesia as this will help physicians practicing in developing countries in decision-making.

### Material and Methods

Women with one previous LSCS were recruited for the study. The following data were collected from patients' case notes: maternal age, gravidity, parity, gestational age, Prostin IOL (including number of doses), indication of IOL, use of syntocinone, type of rupture of membrane (spontaneous vs. artificial), and mode of delivery (spontaneous vaginal delivery, vacuum, CS for failure to progress or fetal distress). Maternal age was defined as completed years at time of delivery; women <18 years old and older than 48 years were excluded. Parity was defined as number of previous births of gestational age more than completed 20 weeks' gestation or birth weight >500 g at delivery. Estimated gestational age was based on the last menstrual period and or routine ultrasound examination before completion of 20 gestational weeks. Patients with two or more Caesarian section, Classical Caesarian section, Non Vertex presentation or Twin pregnancy were excluded from study. In all cases (booked and unbooked), soon after admission, full history and abdominal and vaginal examinations are carried out in order to assess the size of the fetus, position and presentation of the fetus, cervical dilatation, status of the membrane, bishop score, and adequacy of maternal pelvis. Ultrasound examination of the fetus was done to determine the estimated fetal weight, site of the placenta, and amniotic fluid volume.

Results obtained were statistically analyzed using SPSS software 11.0.  $P < 0.05$  was considered statistically significant difference.

### Results

Out of 224 women with previous Caesarian section, 189 were given trial of labour (83.81%). Out of 189 women with previous LSCS who were given trial of labour, 110 women had successful vaginal births. Success rate of Vaginal birth after Caesarian Section was observed to be 59.17%. Total no. of LSCS for failed trial of labour done in given study period was 79.

**Table 1:** Parameters related to previous pregnancy

1.	Recurring Indication	10%
2.	< 2 yrs from previous C.S.	16%
3.	Previous vaginal delivery	33%

**Table 2:** Parameters related to current pregnancy

1	Induction of labour	16%
2	Postdated pregnancy	22%
3	Fetal weight > 3 kg	26%

**Table 3:** Maternal Outcome

1.	Instrumental delivery	1%
2.	Postpartum Haemorrhage	1%
3.	Uterine Rupture	1%

**Tables 4:** Various variables studied

S.no	Variable Studied	p value
1	Rupture uterus & short interdelivery interval.	<0.05
2	Postdated pregnancy and Meconium stained liquor.	<0.05
3	Induction of labour, Previous vaginal delivery or Postdated pregnancy and rupture uterus.	NS

### Discussion

These women belong to a high- risk group due to the risk of a

scar rupture. The obstetrician is always in a dilemma regarding the mode of delivery in these cases. Assessment of the individual case with regard to the possibility of a successful VBAC is necessary while taking the decision. The unending dilemma of an obstetrician is about the management of subsequent labor, once the patient has a scar on the uterus. Some suggest an elective CS for such cases, whereas others choose a trial of labor. Many take a middle route, that is, individualization of case. By far, the greatest problem for the attendant in subsequent labor is the integrity of the uterine scar. Uterine rupture has the potential for causing serious harm to the pregnant woman as well as the baby. This is the most important risk to be noted, but the advantage which the vaginal delivery imparts largely outweighs the risks associated with a repeat CS [12-17].

Previous studies have indicated success rates ranging from 60% to 80%. In present study success rate of Vaginal birth after Caesarian Section was observed to be 59.17% (Graph 1). This is near to results observed by Melamed<sup>7</sup> i.e 61% successful VBAC. This low rate might occur due to previous CS causes, it seems that VBAC is more difficult and impossible in cases with a history of lack of progress. The main causes of VBAC failure were lack of progress (71%) and fetal distress (29%). Melamed showed that lack of progress is associated with unsuccessful VBA. Knight success rate was 63%, and this lower rate happened because of higher birth weight [18].

In current study 1% of cases had uterine rupture (Table 3) where as in other study reported by Ramirez, uterine rupture frequency was 2.4%, and most cases occurred after induction [19]. It seems that selecting women for VBAC is very important, and the risk of life threatening complications of VBAC can be reduce with appropriate criteria (such as previous transverse incision, not using induction for delivery, noting the interval from the previous CS). Some studies proposed that 18 months interval between previous CS and VBAC are adequate. Bangal showed that uterine rupture happened in women attempted to have VBAC before 2 years interval from previous C- section [20].

There was no significant difference in the background maternal characteristics of the patients studied except for the mean maternal age. The exclusion criteria helped to eliminate confounding factors in the comparative analysis. The incidence of Cesarean section for pre-eclampsia (10%) was in keeping with the worldwide incidence of pre-eclampsia [21].

The proportion of patients that received sub-arachnoid block showed a remarkable improvement to 38.5% in this study from 7.8% reported by researchers from the same practice environment during the period 1998-2002 [22]. This dramatic increase in the use of spinal anesthesia resulted from the documented safety of sub-arachnoid block for pre-eclamptics undergoing Cesarean section. The absence of studies from this environment demonstrating advantage of sub-arachnoid block over general anesthesia for severe pre-eclamptics may be a contributory factor to the preponderance of general anesthesia noted in this study.

The proportion of maternal deaths from anesthetic complications was not significantly different between both groups. An earlier study from a developed country setting compared general anesthesia, epidural anesthesia and combined sub-arachnoid block-epidural anesthesia for women with severe pre-eclampsia and found no difference in the outcomes [23]. Significantly more babies with Apgar scores less than 7 at 1 and 5 minutes were recorded in the general anesthesia group than in the sub-arachnoid block group. However, the perinatal mortality was not significantly different between both groups.

## Conclusion

The findings in this study support the previous studies which showed no significant difference in the maternal and perinatal mortality outcome of Cesarean delivery between women with severe pre-eclampsia who had regional and those that had general anesthesia. However, there was significantly higher proportion of birth asphyxia in women who received general anesthesia.

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