

Normal Vaginal Delivery after One Lower Segment Caesarean Section can be Safe Option for Many Women but not Right Choice for All

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Abstract

Introduction: Caesarean section, one of the most frequently performed surgical procedures on women is rising globally. Vaginal birth after one caesarean section should be encouraged in most women who are willing to attempt it, provided no contraindication exists. The policy of “once a caesarean section always a caesarean section” must be abandoned and replaced by once a caesarean section always a hospital delivery.

Objectives: i: To assess the rate of vaginal birth after one lower segment caesarean. ii; To find out various complications encountered during vaginal birth after caesarian section.

Study design: Case series descriptive study.

Setting: This study was conducted in Obstetrics and gynecology unit of Fatima memorial hospital Lahore. In this study a trial of vaginal delivery was conducted on 101 patients with previous one caesarian section. Both booked and emergency patients were included in the study. These cases were selected and managed according to set protocols.

Duration of study: One year.

Subjects and Methods: This descriptive study was conducted in Fatima memorial hospital Lahore over a period of one year. 101 patients with previous one caesarean section were selected and trial of normal vaginal delivery was carried out.

Results: One hundred one patients, both booked and unbooked, with previous one caesarean section were selected for the trial of normal vaginal delivery and rate of successful vaginal delivery was 74.3%. The rate of repeat caesarean section was 25.7%.

Conclusion: A trial of labour after one caesarean section should be encouraged in most women who are willing to attempt it, provided no contraindication exists. As benefit outweigh the risks and are more economical for the patient.

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Introduction

Caesarean birth is a common obstetric intervention to deliver a baby through an incision on the uterus. Its rate varies internationally from 10 – 25%. Its most common indication is previous Caesarean section.¹

During the first half of 20th century, a caesarean section implied that all subsequent pregnancies were likely to be delivered the same way. This policy was

the result from the fear of catastrophic uterine scar rupture of classical caesarean section which persisted even after its replacement with lower segment caesarean section without the same basis. When uterine rupture occurred with a previous lower segment caesarian section, it was not the disastrous event as associated with the vertical upper segment incision. These observations heralded the era of “Trial of scar or vaginal birth after caesarean section”.

Women with a previous classical uterine incision should not undergo trial of labor.²

Vaginal birth after caesarian section is becoming more and more common. The stimulus for interest in vaginal birth after caesarian section was probably the progressive rise in the caesarian section rate.^{3,4}

A supervised trial of labour after one lower segment caesarian section should be encouraged in most women who are willing to attempt it, provided no obstetric contra indications exist, to reduce caesarian section rate.⁷ Even in the presence of adequate facilities a lot depends on the surgical skill of the obstetrician. Current medical evidence indicates that 60 – 80% women can achieve a vaginal delivery following a previous lower segment caesarian section.⁸⁻¹¹

Once a women has achieved vaginal birth after one caesarian section, the rupture risk falls dramatically.¹²

Neither repeat caesarian section nor trial of labour is risk free.^{2,13,14} The medical literature in the last decade of the previous century is replete with the low maternal and perinatal morbidity and mortality associated with vaginal birth after lower segment caesarian section for a non repetitive indication.^{15,16}

Many studies proved that scar dehiscence occurs far less frequently than what is thought in lower segment caesarian section. Labour after previous caesarian section has a 75% success rate with a risk of uterine rupture of less than 1%.^{17,18} Trial of labour increases slightly the risk of uterine rupture by 0.24%.¹⁹ Obstetricians assume a dual role in the provisions of health care to mother and fetus during labour. They have broader based role in the prevention of labour complications to achieve the best possible health maintenance for both.^{3,17,18}

Certain points also need careful consideration before subjecting a patient to an elective repeat caesarian section. These are higher rate of post operative complications, long hospital stay, higher costs,²⁰⁻²² and unnecessary separation of the new born from the mother and consequent effect on breast feeding and limiting obstetrics career of the patient.

Objectives

- To assess the rate of vaginal birth after one lower segment caesarian section.
- To find out various complications encountered during vaginal birth after caesarian section.

Material and Methods

Settings

This study was conducted in Obstetrics and gynecology unit iii of Fatima memorial hospital Lahore. In this study a trial of vaginal delivery was conducted on 101 patients with previous caesarian section. Both booked and emergency patients were included in the study. These cases were selected and managed according to set protocols.

Sample Size

The study included 101 cases.

Duration of Study

One year.

Sample Technique

Convenience non-probability sampling.

Sample Selection

Inclusion Criteria

- Pregnant ladies at term with vertex presentation.
- Previous one uncomplicated lower segment caesarian section.

Exclusion Criteria

- Patient with previous classical section and uterine rupture.
- Mal presentation.
- High risk pregnancy due to medical and obstetrics complication.

Medical Complications

1. Diabetes.
2. Pregnancy induced hypertension.

Obstetrics Complications

1. Placenta – Praevia.
2. Multiple gestations.
3. Intra uterine growth restriction.

Study Design

It was a case series descriptive study.

Data Collection Procedure

- All patients were counseled regarding benefits, potential complications and alternatives to a trial of labour and consent was taken about the option of vaginal birth. If patient refused a repeat caesarean section, vaginal delivery was planned.
- After admission, detailed history and thorough examination was carried out.
- Bishop score was noted.

Following investigations were carried out;

1. Blood grouping and Rh factor.
2. Haemoglobin estimation.
3. Midstream urine examination.
4. Ultrasonography for fetal well being, gestational age and placental localization.

During labour following measures were carried out;

1. Operation theatre was ready.
2. Availability of the cross – matched blood was assured.
3. Anaesthetist and Paediatrician were available.
4. Intravenous line was maintained.
5. Vigilant fetal heart monitoring / continuous fetal monitoring with cardiotocography was carried out.
6. Maternal monitoring was done. (e.g pulse, blood pressure and temperature).
7. Patients were kept nil by mouth according to the condition.
8. Augmentation of labour with syntocinon infusion where needed.
9. Pain relief was provided with intramuscular injection of 100 mg Pethidine and 25 mg Promethazine Hydrochloride.

Management of labours were under close supervision. Partograms were maintained. The trial of labour was discontinued on arrest of cervical dilatation for more than three hours in the presence of good uterine contractions, fetal distress and clinical suspicion of impending uterine rupture. Uterine scar dehiscence / rupture was managed by laparotomy and repair.

Results

During the period of study in 2009 total deliveries conducted in unit were 4275 and during this period Caesarean section rate was 22.2%. Out of these patients 101 patients with previous one caesarean section were selected according to the criteria already mentioned and the case were managed according to the set protocol.

Table 1 shows bishop score at the time of admission. Number of patients with bishop score < 5 was 18 (17.8%) and > 5 were 83 (82.2%).

Table 1: Bishop score at the time of admission.

Bishop Score	No of Cases	Percentage
< 5	18	17.80%
≥ 5	83	82.20%

Table 2: Number of patients with previous Caesarean Section and mode of delivery.

Type of Delivery	No of Cases	Percentage
Vaginal deliveries	75	74.30%
Repeat caesarean section	26	25.70%

Table 3: Augmentation of labour with syntocinon infusion.

Type of Augment	No of Cases	Percentage
Augmented	52	51.50%
Not – augmented	49	48.90%

Table 4: Indication for Previous Caesarean Section

Indication	No of cases	Percentage
Fetal distress	27	26.70%
Failure progress of labour	19	18.80%
Post dates, meconium stained liquor	4	4.00%
Breech presentation	14	13.90%
Pre Eclampsia / Eclampsia	10	9.90%
Twin pregnancy	8	7.90%
Cord prolapse	5	5.00%
Transverse lie	5	5.00%
Cephalopelvic disproportion	6	5.90%

Table 2 shows the number of patients delivered vaginally after trial of normal labour. These were 75 cases. The rate of normal vaginal delivery achieved was 74.3%, repeat caesarean section was carried out in 25 patients and rate of repeat caesarean section achieved was also 25.7%.

Table 3 shows that number of cases augmented was 52 and rate of augmentation was 51.5%.

Table 4 and figure 1 summarizes the indications for previous caesarean section. Among them important indications were fetal distress (26.7%) failure of progress of labour 18.8%, Breech presentation 13.9%, and Hypertensive disorders of pregnancy 9.9%, Twin pregnancy 7.9% and other causes 22.9%.

Table 5: Causes of failed trial of labour.

Indication	No of Cases	Percentage
Fetal distress	10	38.4%
Failure of progress of labour	6	23.6%
Scar tenderness	10	38.4%

Table 5 shows causes of failure of trial of labour in the study. Among these patients failure of trial of labour occurred due to scar tenderness in 10 cases (38.4%), fetal distress in 10 cases (38.4%) and failure of progress of labour in 6 cases (23.6%).

Regarding age distribution of the patients in the study, 73 patients (72.2%) were in the age group of 18 – 28 years, 28 patients (27.7%) were in the age of group of 29 – 34 year.

Table 6 shows the parity of the patients. Sixty two patients (61.4%) were gravida – 2 and 39 patients (38.6%) were more than gravida – 2.

Table 6: Parity of patients.

Gravida	No of cases	Percentage
2	62	61.40%
> 2	36	38.60%

Caesarean section was carried out for scar tenderness in eight patients.

Uterine rupture was occurred in one case but uterine dehiscence was also noted in one case.

Table 7 shows that 99 (98%) cases were at term and only two cases were before 37 week included in studies. No maternal mortality occurred in the study.

Table 7: Gestational Age.

Weeks	No of Cases	Percentage
< 37	2	.90%
≥ 37	99	98.00%

Table 8: Apgar score at one minute.

	No of Cases	Percentage
0 – 4	83	83.20%
5 – 6	17	16.80%

Mean ± SD 3 – 85 ± 0.80

Table 9: Apgar score at five minutes.

	No of cases	percentage
0 – 7	38	33.70%
8 – 9	63	62.40%

Mean ± SD 7 – 57 ± 0.98

Table 8 shows that apgar score after one minute was 4 in 83 cases (83.2%), and 5 – 6 in 17 cases (16.8%). Apgar score after 5 minutes was 0 – 7 in 38 cases (33.7%) and 8 – 9 in 63 cases (62.4%). There was one intrapartum death, no early neonatal death in the study.

75 cases (74.2%) with Bishop score > 5 delivered vaginally and only 8 cases (7.9%) delivered by caesarean section. Patient with bishop score less than 5 were 18 (17.8%). They delivered by caesarean section.

Discussion

The increased mortality and morbidity associated with caesarean section as compared to vaginal delivery is clearly borne out by the literature. This fact together with the low reported incidence of uterine rupture and consequent maternal and fetal compromise strongly argues for a trial of labour in carefully selected patients with previous caesarean section. The caesarean section rate in the unit during study period was 22.2%. The rate of normal vaginal delivery after one caesarean section was 74%. This is comparable to most of

the studies which indicate that 60 – 80% of women can achieve a vaginal delivery following a previous lower uterine segment caesarean section.

The patients with spontaneous onset of labour, both booked and emergency, were only included in the study because the role of cervical ripening with prostaglandins and the safety of labour induction / augmentation with oxytocin remain controversial. The issue of prostaglandin and previous caesarean section has not yet been dealt with in a series, large enough statically to address the concerns of safety. Large trial would be required to answer this question definitively. When standard management guidelines are adhered to oxytocin can be used effectively without increased maternal or fetal risk. Flamm et al reported no significant difference in maternal and perinatal morbidity when the obstetric outcomes of those who received oxytocin were compared with those who did not. There was no difference in the incidence of uterine rupture between the two groups, although the rate of the full thickness uterine rupture was higher in the oxytocin group.

The leading indications for the repeat caesarean section were scar tenderness (30.7%), fetal distress and failure of progress (19.2%) each.

A previous vaginal delivery in patients who had a previous caesarean section is a good prognostic factor for a subsequent successful vaginal delivery in the trial of labour. Favorable Bishop score is also a good prognostic factor for successful vaginal delivery.

In our study patients with Bishop score more than five had higher vaginal delivery rate (74.2%) as compared to the patients having Bishop score, less than five.

In this trial vigilant fetal heart rate monitoring / continuous electric fetal heart rate monitoring was carried out instead of intermittent auscultation of fetal heart rate, keeping in mind the high risk nature of the labour to pick up any abnormality in the FHR earlier for timely intervention e.g. a sudden prolonged fetal bradycardia or abrupt onset of recurrent severe variable decelerations in a laboring woman with a prior caesarean section suggest repeat caesarean section. The confirmation of diagnosis is only possible by surgical inspection of the uterus. There was no maternal mortality in the study. Most of the published data suggest that the incidence of uterine rupture during labour following a lower uterine segment caesarean section is less than 1%. In our study eight caesarean sections were carried out for the scar tenderness, for the suspicion of scar rupture / dehiscence. There was no case

of scar rupture but in only one case there was scar dehiscence. This shows that signs of impending uterine scar rupture, pain and tenderness are neither sensitive nor specific. All the measured parameters of maternal morbidity were lower in the women who delivered vaginally. Infections, thrombophlebitis, anemia and longer hospital stay were more commonly seen after caesarean section.

There was one perinatal death in the study and the perinatal morbidity was higher in the repeat caesarean sections after failed trial of labour.

Conclusion

Adverse economic impact of caesarean delivery include, longer length of hospital stay, use of more medical resources, longer convalescence and higher cost.

From the study it is concluded that vaginal birth after one lower segment caesarean section, is safe method and has less complications than repeat caesarean sections. Maternal health risks can be further reduced by taking preventive steps, such as educating TBA's to refer such patient to those centers, where the facilities of continuous electronic fetal monitoring, operation theaters and blood bank are available.

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