

## Review of Study of Vaginal Birth After Caesarean Section (VBAC)

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**Aims and Objectives:** To determine the frequency and mode of delivery in women with one caesarean section and to evaluate the fetomaternal outcome of trial of labour of previous one caesarean section.

**Material and Methods:** A trial of vaginal delivery was carried out on 100 patients in the Department of Obstetrics and Gynaecology of Lahore General Hospital Lahore, Descriptive study was conducted from September 2006 to September 2007. Selection criteria were subjects with normal pregnancy, adequate maternal pelvic dimensions, vertex presentation and spontaneous onset of labour with previous one uncomplicated LSCS. Patients with classical caesarean section, medical complications, multiple pregnancy, IUGR, placenta previa and extensive myomectomy were excluded from the study. Informed consent was taken from all patients; trial of scar was given with vigilance. Maternal and fetal monitoring was carried out with facility of operation theatre, anesthesia and pediatrician.

**Results:** Success vaginal delivery was achieved in 70% of the patients and repeat emergency caesarean section was carried out in 30% of the patients. Leading indication for repeat caesarean section was failure to progress, fetal distress and scar tenderness. No maternal and fetal complication occurred.

**Conclusion:** Trial of scar after one LSCS should be encouraged with vigilant monitoring provided no obstetric contraindication exists.

**Key words:** VBAC, scar tenderness, maternal mortality, LSCS.

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Caesarean delivery is a surgical operation to deliver a baby through an incision in the uterus, Its rate varies internationally from 10-25%. During the half of 20th century, a caesarean section implied that all subsequent pregnancies were very 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 LSCS without the same basis<sup>1</sup>. When uterine rupture occurred with a previous LSCS, it was not as disastrous event as with USCS, These observations heralded the era of the trial of scar or vaginal birth after caesarean delivery (VBAC). VBAC is becoming more and more common. The stimulus for interest in vaginal birth after CS was probably the progressive rise in CS rate.<sup>2-4</sup>

Patients with prior caesarean delivery needs special management both antenatally and in labor and delivery. We know that many women can safely and successfully have a vaginal birth after caesarean delivery. Current medical evidence indicate that 60-80% of women can achieve a vaginal delivery following a previous lower uterine segment caesarean delivery<sup>5</sup>.

Looking at the rates separately for elective and emergency sections, these rates have increased almost in parallel with each other, the ratio of emergency to elective sections staying roughly at about 60%:40%. The rate of elective caesarean section rose from 5.8% to 10.6% in 1999, a total rise of 83%<sup>6</sup>.

Studies have shown that by encouraging the women with previous one caesarean section for a non-recurrent cause can decrease this rise in caesarean section rate. Caesa-

rean delivery rates in the United States showed a dramatic rise during the period from 1965 to 1980. By the early 1990s the national caesarean rate was 25% and had fallen to 21% in 1996; it is now rising again<sup>7</sup>.

The trial of vaginal birth after caesarean section (VBAC) rate rose from 35% to as high as 64% in 1995. Thus one can see that almost doubling rate of trial of VBAC did not decrease the success rate, indicating that many repeated caesarean deliveries were avoidable. The rate of repeated caesarean deliveries fell from an initial 7.4% to 3.85 at the end of the study<sup>8</sup>.

The decrease in women with a previous caesarean section undergoing a trial of labour reflects patients choice as much as obstetricians decision. The way in which a woman is counseled will influence this choice. If a doctor, has no objections to a repeat caesarean section and informs the woman that her chances of a repeat operation is around 30%<sup>9</sup>, the woman herself will be influenced by this. Evidence suggests that there is significantly greater morbidity associated with a trial of labour compared with an elective caesarean section which will further affect the decision<sup>10</sup>.

Recent studies have shown that maternal request for caesarean section has received much publicity and interest in medical literature. The General Medical Council have drawn up 14 points of good medical practice (GMC 1995). Of these several are pertinent to a consultation with patients about maternal request for elective caesarean section; listen to the patient's views and respect their right to be fully involved in the decisions about their care. With the population of the Patients' Charter and changing childbirth, women were

given a more central role in their obstetric care, After these publications maternal request for caesarean section appears to have become an important issue, leading at least in part to the increasing caesarean section rate<sup>11</sup>.

Maternal request for elective caesarean section must be one of the few instance when the patient can request major surgery with all the inherent risks with no proven benefit to her or her baby. Why would so many do this? Anecdotal evidence suggests concern over safety to themselves and the fetus. Other concerns are that they may labour for many hours, only to end up having another caesarean section<sup>11</sup>.

It is surprising that women will choose to subject themselves to a major surgical procedure with all the inherent risks with no proven benefit to their baby or themselves. It has been postulated that this is in fact obstetrician-driven, that women have detected during consultations that obstetricians feel the elective caesarean section is best and have thus requested this<sup>12</sup>.

Thus proper counseling (for trial of labour) and evaluation, of the cases of women with prior caesarean section has been considered a key method of reducing the caesarean section rate.

Publications reinforce that although there is no doubt that a trial of labour is a relatively safe procedure, it is not risk free and should not be undertaken in casual fashion.

A trial of labour after one LSCS should be encouraged in most women who are willing to attempt it, provided no obstetric contraindication exists<sup>13,14</sup> but under supervision to reduce caesarean delivery rate<sup>15</sup>. Many studies proved that scar dehiscence occurs far less frequently what is thought in LSCS. Labour after previous caesarean section has a 75% success rate with the risk of uterine rupture of less than 1%<sup>16,17,18,19,20</sup>. Trial of labour increases slightly the risk of uterine rupture by 0.24%<sup>21</sup>.

In developing countries like Pakistan it is better to give trial of labour in patients who do not have absolute contraindications for vaginal delivery. The policy of once a caesarean always a caesarean section must be abandoned and replaced by once a caesarean always a hospital delivery<sup>22</sup>. Health care personnel should be trained regarding management of the cases with previous section. Departmental policy regarding the criteria for selection of case, for trial of labour should be analyzed in depth and reviewed in order to increase the percentage of cases, which could be enrolled for trial of labour.

There is now increasing emphasis on the need for patients to be involved in medical care, with higher level of motivation and satisfaction.

**Subjects and Methods**

One hundred patients were selected from. Department of Obstetrics & Gynecology, Lahore General Hospital, Lahore for trial of labour with normal pregnancy, clinically adequate pelvic dimensions, vertex presentation and spontaneous onset of labour. Patients with previous classical caesarean section, unknown caesarean section, macrosomia

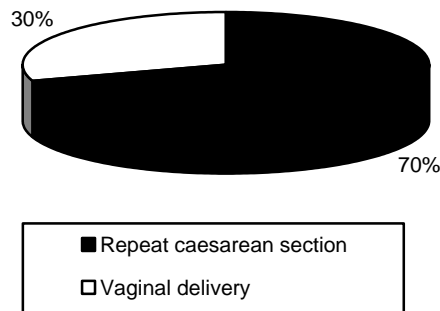
and women with additional obstetrical and medical complication like diabetes, hypertension, multiple pregnancy, malpresentation, intrauterine growth restriction and placenta previa were excluded from the study. After admission, investigations were carried out, informed consent was taken and trial of labour was given to the patient under vigilant monitoring with the facility of operation theatre, anaesthesia and paediatrician. Maternal and fetal monitoring was accomplished under dose supervision by one on one care.

**Results**

One hundred patients who underwent caesarean section in the previous delivery for non-recurrent causes were included in this study. The non-recurrent causes for previous caesarean section and their incidence is shown in Table 1.

**Table 1:** Indication of previous caesarean for non recurrent cause.

Age (Year)	No. of Cases	Percentage
Failure to progress	28	28.0
Fetal distress	20	20.0
Placenta previa	18	18.0
Transverse lie	12	12.0
Breech presentation	10	10.0
Oblique lie	02	02.0
Pregnancy induced hypertension	04	04.0
Twins for (both breech)	02	02.0
Twins (first breech)	03	03.0
Twin with 1 <sup>st</sup> transverse lie	01	01.0



**Fig. 1:** Patient with previous caesarean section & mode of delivery.

28% of the caesarean deliveries were performed due to failure to progress. In 20 (20%) of the patients, the indication for caesarean section was fetal distress. Placenta previa was indication for caesarean delivery in 18 (18%) cases.

Transverse lie was indication of caesarean in 12 (12%) cases. Different kinds of breech including priori breech was the cause in 10 (10%) cases. Oblique lie was found in 2% of cases (pregnancy induced hypertension was found to be the cause of caesarean in 4 (4%) cases. Twin (both breech) 2 (2%) twin with first breech 3% and twin with 1<sup>st</sup> transverse lie was found in 1% of cases. Out of those 100 women who had previous one caesarean for non-recurrent cause and were given trial of labour 70 (70%) had normal vaginal delivery while 30 (30%) had emergency caesarean section due to failure of trial (Table 2).

**Table 2:** *Outcome of trial of vaginal delivery following previous lower segment caesarean section.*

Model of Delivery	No. of Cases	Percentage
Vaginal deliveries	70	70.0
Emergency caesarean section after failed trial of labour	30	30.0

Those patients who had vaginal delivery out of 70 patients 50 patients (71.43%) had spontaneous delivery and 12 (17.14%) patients had outlet forceps delivery and 8 patients (11.43%) had ventous delivery (Table-3).

**Table 3:** *Type of vaginal delivery (n=70).*

Type of Vaginal Delivery	No. of Cases	Percentage
Normal vaginal delivery	50	71.43
Outlet forceps	12	14.14
Ventouse Delivery	08	11.43

In our study there was only one case of scar dehiscence who underwent emergency caesarean section. Patient with scar dehiscence showed a definite fetal distress and also complained of pain and tenderness over the lower segment but the uterine contraction were regular immediate emergency caesarean was performed and there was no maternal or fetal complications.

Numerous Reports of the benefits and safety of such vaginal deliveries can be found. Carefully selecting the indication of trial of labour and monitoring the labour course are very important for increasing successful vaginal delivery and reducing repeat caesarean section<sup>23</sup>.

The risk of uterine rupture is increased in patients who has an excessive amount of oxytocin, who has experienced dysfunctional labour, and who has history of two or more caesarean deliveries<sup>24</sup>. So all patients with a history of caesarean delivery should be observed closely for progression of labour. Recognition of an active phase arrest disorder despite adequate augmentation with oxytocin, requires operative delivery<sup>25</sup>. The dehiscence rate of a lower segment transverse uterine scar is 2% to 4%, but of a vertical is much

higher. So the strongest predictor of the safety of labour after previous caesarean is the location of the previous uterine scar.

Our overall success rate and feto-maternal outcome is comparable to other studies from developed and developing countries.

In this context it is said that a trial of labour after previous caesarean delivery is safe for patients who are managed in hospital with the capacity to conduct increased surveillance and accomplished emergency caesarean deliveries and exploratory laparotomies if necessary.<sup>26</sup>

## Discussion

Each delivery method has its advantages and disadvantages. It is ultimately the responsibility of the obstetrician to ensure that the delivery plan is appropriate for each individual case. The stimulus for interest in vaginal birth after caesarean section was probably the progressive rise in the caesarean section rate.

The increased morbidity and mortality associated with caesarean section as compared to vaginal delivery is clearly born out by the literature<sup>27</sup>. This fact together with the lower reported incidence of uterine rupture and consequent maternal and fetal compromise strongly argues for the trial of labour in carefully selected patients with previous caesarean section<sup>13</sup>. The rate of normal vaginal delivery after previous one caesarean section was 70% in our study. This is comparable to most of the studies, which indicate that 60-80% of women can achieved a normal vaginal delivery following a previous LSCS.<sup>17,18,30</sup> In our study patients with previous one caesarean section, who had previously delivered vaginally demonstrated a better chance of successful vaginal delivery<sup>[28]</sup> (76.19% vs. 68.96%). There was no maternal mortality in this study. Most of the published data suggest the incidence of uterine rupture following LSCS is <1 %<sup>20</sup>. Complications were two times higher in patients after failed attempt at vaginal delivery as compared to successful vaginal delivery. The greatest morbidity occurred in women who attempted a vaginal delivery after a previous C-section and failed to achieve that mode of birth<sup>29</sup>.

## Conclusion

In the management of patients with previous caesarean section regular and intensive antenatal surveillance is required. Careful observation throughout labour in a well equipped unit is necessary. Thus proper counseling for trial of labour and evaluation of the cases of women with prior caesarean section has been considered a key method of reducing the caesarean section rate. There is no doubt that a trial of labour is a relatively safe procedure but it is not risk free and should not be under taken in casual manner. Hence trial labour after 1 caesarean section in which uterine incision involved only the lower segment is safe in our setup where high tech facilities of continuous electronic fetal monitoring and intrauterine pressure monitoring are limited.

Higher morbidity and health care cost of repeat lower segment caesarean section outweigh, the advantages of such procedure and trial of labour after caesarean section helped to decrease the CSR in our department.

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