

To Study Uterine Rupture & Fetal Distress in patients with previous LSCS

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ABSTRACT

Background: With increasing operative deliveries i.e. Caesarean sections in obstetrics, management of subsequent pregnancies has become a challenge among, Obstetricians, as on one hand, repeat caesarean deliveries are associated with several morbidities like placenta previa, adherent placenta, adhesions, infections and on the other hand vaginal birth after caesarean section (VBAC) is associated with uterine rupture, fetal distress, and scar dehiscence etc.

Objective: To study uterine rupture and fetal distress in patients undergoing trial of labour (TOL) with previous caesarean section.

Materials & method: One hundred pregnant patients with only one previous section attending antenatal clinic in Services hospital, Lahore were included. Patient in which there was no contra indication to vaginal birth, no significant medical or surgical problem affecting mode of delivery were included. Both the patient and her husband were explained pros & cons of trial of labour (TOL) in previous section and they consented to VBAC. Labour either spontaneous or induced, was included with all arrangements of an emergency caesarean section with strict feto-maternal monitoring and with maintenance of partogram.

Results: It was found that out of 100 patients 4 (4%) had uterine rupture and 10 (10) fetuses had fetal distress & 1% baby expired. 67% of patients were between 31-40 years of age. Blood transfusion was observed in 12(12%) patients.

Conclusion: Although VBAC is a better choice for women with previous one caesarean section, a better antenatal evaluation with exploration of her previous record is essential. Labour must be vigilant with arrangements of blood and emergency operative delivery.

Key words: VBAC (Vaginal birth after section) & TOL (Trial of labour).

INTRODUCTION

With a dramatic rise in caesarean section, there is a change world over leading to increased practice of attempting vaginal birth after one caesarean delivery rather than doing a repeat caesarean section.

Although successful VBAC is associated with less changes of post partum fever, wound infections, maternal discomfort, length of hospital stay and hysterectomy.

But on the other hand, trial of labour in a woman with previous one caesarean section puts the woman to the rise of uterine rupture which increased morbidity and mortality in both mother and the baby⁴. So one has to have a good patient selections in order to achieve successful vaginal birth and reduces changes of the risks involved with trial of labour in woman with previous one caesarean section.

Although, the success rate as high as 70-80% in trial of labour with previous one caesarean section has been document, there is a need to evaluate the risk versus benefits as there is always a threat of scar

dehiscence and uterine rupture causing serious feto-maternal morbidity.

Uterine rupture and fetal distress in patients undergoing trial of labour with previous one caesarean section.

Objectives: To study occurrence of uterine rupture and fetal distress in patients undergoing trial of labour with previous one caesarean section.

Study Design: Observational / Descriptive study.

Duration of Study: The study was conducted over a period of one year from 01.01.2008 to 31.12.2008 in SIMS/Services Hospital, Lahore.

Materials & Methods: One hundred pregnant patients with only one previous caesarean section attending antenatal clinic at Services Hospital, Lahore were selected. Following inclusion and exclusions was observed.

Inclusion Criterion:

1. Women with only one LSCS.
2. Women with at least two antenatal visits and on the basis of their medical, surgical and
3. antenatal record were considered fit for the trial of labour.

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4. Based on patients height, clinical pelvimetry, estimated fetal weight on abdominal
5. examination & by ultrasonography there was no obvious element of Cephalopelvic disproportion (CPD).
6. Only cephalic presentation and longitudinal lie were included.
7. Women and their husbands agreed to undergo trial of labour (TOL) and the risk of repeat LSCS was explained to them.

Exclusion Criterion

1. Women with no antenatal visits and medical surgical or antenatal record.
2. Women with placenta previa or history of antepartum haemorrhage.
3. Women with abnormal lie, abnormal presentation or multiple gestation with previous one SCS.
4. Women with more than one caesarean sections.
5. Women with known or suspected classical caesarean section or J-Shaped uterine incision.
6. Obvious CPD i.e., grossly contracted pelvis on clinical pelvimetry or estimated fetal weight
7. of more than 4kg on ultrasound examination or abdominal palpation.
8. Patient and / or her husband not willing to undergo trial of labour.

Data Collection:- At 37 completed weeks, patients had clinical pelvimetry to rule out CPD and after screening them for TOL. Patients were either allowed for spontaneous onset of labour and labour was awaited till 40 weeks & 6 days of gestation¹. Women reaching post date i.e. more than 40 weeks & 6 days were induced with a single vaginal pessary of prostaglandin E2. In that case the patients had pre & post induction CTG and were closely monitored regarding maternal pulse, B.P, scar tenderness and fetal heart rate. If labour did not start or any fetomaternal compromise occurred with PGE2 pessary, emergency caesarean section was done. All these women were kept NPO and at least two units of blood were cross-matched for an emergency need of blood transfusion. For patients in labour, maternal monitoring was done by maintenance of partogram which included a strict record of pulse every 15 min, B.P every 30 min. Fetal hear rate were monitored every 15 min. Patient was observed for any sharp lower abdominal pain and tenderness which is the sign of uterine rupture. Partogram also includes a graphical representation of position of vertex and dilatation of cervix. This graph is plotted by putting findings of pelvic examination which is repeated every 1-3 hours depending on strength of uterine contraction, cervical dilatation and station of head.

Arrangements to do an emergency / urgent caesarean section was made by keeping the theatre anaesthetist and neonatologist informed. Continuous

or intermittent electronic fetal monitoring was also done till the delivery of the baby².

RESULTS

The age distribution showed that out of 100 pregnant patient undergoing TOL with previous one LSCS, 67% women were between 31-40 years of age 20% were between 20-30 years, 3% were less than 20 years and 10% were 40 years.

Uterine rupture was diagnosed clinically by vaginal bleeding, sharp pain between contractions, maternal tachycardia, hypotension, fetal brady cardia and tenderness at the site of caesarean section³. Recession of the fetal heard (baby's head moving back up into the birth canal) and bulging of the baby's head outside the uterine scar are also signs of uterine rupture. Out of 100 patients, 8% patients had heavy vaginal bleeding during labour with suspected uterine rupture. 8% patients had repeat caesarean section due to failure progress of labour and out of these 8% patients two patients had rent in lower uterine segment of diagnosed when emergency operative delivery was performed. Fetal distress which is the hypoxic state of fetus and may lead to fetal acidemia and hypercapnia is diagnosed clinically by fetal bradycardia, type-II decelerations or by the passage of meconium⁴. Fetal distress was observed in 10% of fetuses & out of these 10%, 3 babies remained in nursery for treatment for more than 4 hrs and one baby expired. Uterine rupture is a tear through the thickness of uterine wall at the site of a prior caesarean section. The majority of caesarean uterine incision are low-transverse. The scar from this type of incision is least us likely to rupture in a subsequent pregnancy⁵. In this study uterine rupture was 4%, one patient was found to have a previous J-Shaped uterine incision although the documents & record of this patient showed LSCS. One patient had caesarean hysterectomy as a complication of uterine rupture. Blood transfusion of at least one unit of blood was given to all the patients with APH and uterine rupture. Hence it was observed in 12% of all the patients and it add to the risk of blood transfusion reactions³.

DISCUSSION

This study was conducted over a period of one year. A total of 100 pregnant patients with previous one caesarean section attending antenatal clinic were included. The patients were selected for a trial of labour (TOL).

Most of the patients fell into age group between 20-30 years of age which is comparable to a study carried out by Flemm & Geiger⁶.

About the maternal complications, most fearful is the uterine rupture. Data from various studies show that women who have had one prior caesarean birth, with a low transverse incision, the risk of uterine rupture as 0.5 to 1%. Women whose labours begin spontaneously, uterine rupture is reported to be less than 1% and the risks similar to or less than the risk of any other predictable complication of labour and delivery⁷. However our study shows that out of 100, four patients had uterine rupture which seems to be quite significant. Different reasons may play part like a previous J-Shaped incision, single layer closure of lower uterine segment or post operative infections, on which may not be documented in our country. After the most feared complication of uterine rupture in TOL with previous caesarean section, other complications were also significant like fetal distress. In a study maternal febrile episodes (RR 2.27), thrombo-embolism events (RR2.81), uterine rupture (RR 42.18) & perinatal mortality (RR 1.3). The risk of uterine rupture for patients with previous caesarean section was elevated in the TOL group as compared with the group undergoing elective LSCS but risks like peripartum hysterectomy (RR 0.23-0.56) were lower. When comparing the women having a TOL, 24.29% had uterine rupture compared with 13.92% who had an elective repeat caesarean section⁸. All these factors contribute directly or indirectly to maternal morbidity.

A retrospective review of records of 310 consecutive women who, at Jichi Medical School Hospital of 1990 through 1995, had previously undergone a primary caesarean section and gave birth to a singleton infant weight > or 2000g at > or 36 weeks of gestation in subsequent 96 (31%) of 310 women and VBAC were attempted in 214 (69%) women. Vaginal deliveries were successful in 132 (43%) of 310 pregnancies. No maternal deaths was observed in this group. A uterine rupture occurred in 2 (0.9%) of 214 women who attempted VBAC in the study⁹. Again 4% uterine rupture in this study shows that actual unidentified cause may be subclinical or overt hospital acquired infections, or poor theatre and instrumental sterilization. All these factors play part in weakening of the scar which gives way easily in subsequent pregnancy. Patients who experience failed vaginal birth after caesarean section also have a higher risk of uterine rupture and infections morbidity compared with patients who have successful vaginal birth after caesarean section or elective repeat LSCS. Because the actual morbid events are less, cautions should be exercised in interpreting results and counseling the patients more accurate prediction for safe successful vaginal birth after caesarean delivery is needed¹⁰. Uterine rupture pose a serious risk to both mother and fetus¹¹.

Although it is not easy to predict which women are likely to experience a rupture of uterus while laboring for a VBAC, recent studies have suggested that the risk for uterine rupture is higher when

1. Labour is induced with oxytocin, prostaglandin or misoprostol⁸.
2. The prior caesarean incision was closed with a single layer of sutures (single layer closure often done in recent years to shorten the time in the operating room) as compared to double layer closed.
3. Women pregnant and labour for a VBAC with in less than 24 months after a prior caesarean.
4. Women who are older than 30 years of age.
5. Maternal fever was a consequence of a prior caesarean birth.
6. A classical uterine incision was used in prior caesarean birth.

The other complication under study was the occurrence of fetal distress. In the current study fetal distress was observed in 10 fetus, out of 100, three babies were admitted in the nursery for more than 48 hours and one baby expired. Fetal distress which is defined as the state of fetal hypoxia leading to hypercapnia & acidosis clinically. It manifests as fetal heart decelerations (Type-II), passage of meconium & low birth APGAR score. In a comparable study, umbilical cord arterial blood gases were obtained in 88.3% of babies after delivery and umbilical cord arterial PH measurements were made between groups of VBAC & repeat elective caesarean section. It was noted that neonates with successful VBAC were more likely to have an APGAR score at 5min less than 7-1 (OR.1-69). This suggests that VBAC possess a lower overall risk of fetal distress but a two fold increased risk of fetal acidmia¹². Hence although there may be no scar dehiscence or distruption but a scar itself in lower uterine segment may be the reason of causing fetal distress due to certain unknown hemodynamic changes. Thus a continuous fetal monitoring is essential in women under going TOL with previous caesarean section. A vigilant active management helps in VBAC and thus lowering risk of repeated sedious¹³.

Hence in a tertiary care hospital where good theatre, neonatal and surgical facilities are available, a trial of labour in patients with previous caesarean section helps overall reducing morbidity, hospital stay and cost per patient¹⁴. But again patient selection is very important one needs to have good clinical assessment of the patient. Her detailed evaluation of history, estimated fetal weight clinically as well as by ultrasound, clinical pelvimetry are all helpful in patient selection. Spontaneous onset of labour, favourable bishop's score, estimated fetal weight less than 4kg

and a spacious pelvis are all good indicators for a VBAC¹⁵.

In Pakistan large scale data is lacking on the safety and outcome of trial of labour. Only a few studies are available⁶ two retrospective studies conducted in our country suggest success rate as high as 70-80% of trial of labour^{7,8}. Hence patient selection is important and factors like spontaneous onset of labour, favourable bishop's score^{5,6} and fetal weight less than 4kg may play an important role¹².

CONCLUSION

VBAC is an option which needs to be properly discussed with the patient after careful patient evaluation. Although it is associated with some serious complications but a successful VBAC in from long term complications of repeated operative deliveries.

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