The Journal of
OBSTETRICS AND GYNECOLOGY of India

J Obstet Gynecol India Vol. 59, No. 2 : March/April 2009 pg 136-139

Original Article

Analysis of mode of delivery in women with previous one cesarean section

Shah Jitesh Mafatlal [1], Mehta Meghana Narendrabhai [2]

[1,2]Assistant Professor, Department of Obstetrics and Gynecology, Government Medical College and Sir Takhtsinhji Hospital, Bhavnagar, Gujarat

Abstract

Objectives: To know the outcome of mode of delivery - elective repeat cesarean section (CS) and trial for vaginal delivery in women with prior one cesarean section. *Methods:* A prospective study was carried out on 385 women with previous one lower segment cesarean section (LSCS) from 1st January 2005 to 31st December 2006. Women with recurrent indications for CS or those having non recurrent indications with any complicating factors in present pregnancy were taken for elective LSCS. Those women with previous one LSCS for the non recurrent indications were given a trial for vaginal delivery. Case selection for trial of vaginal delivery was done as per ACOG guidelines. Statistical analysis was done by t test. *Results:* Out of the 197 women in the trial group, 72.1% delivered vaginally and 27.9% required emergency repeat LSCS. There was no statistically significant difference in maternal and perinatal morbidity rates in elective CS versus trial of vaginal delivery groups. *Conclusion:* With proper selection, appropriate timing and close supervision; trial of vaginal delivery eliminates the need for a large proportion of repeat cesarean operations. Individualized approach seems to be the best.

Key words: previous cesarean section, vaginal birth after cesarean section, elective repeat CS

Introduction

Worldwide rise in cesarean section (CS) rate during the last three decades has been the cause of alarm and needs an indepth study. The procedure is not simple and needs to be performed only when circumstances distinctly require it[1]. Before 1970s, the phrase "one a cesarean, always a cesarean" dictated obstetric practice. Later because of escalating rates of cesarean section (CS), suggestions were made that vaginal birth after CS (VBAC) might help in reducing the rates of CS[2]. In an appropriate clinical setting and properly selected group of women, VBAC is safe and effective [3,4]. All post cesarean pregnancies do not require repeat CS and a majority of them may have uncomplicated vaginal delivery [5].

A trial of vaginal birth after a previous CS (VBAC) is considered safer than a routine repeat CS [1]. VBAC offers distinct advantages over a repeat CS since the operative risks are completely eliminated, the hospital stay is much shorter and expenses involved are much less. However, several factors increase the likelihood of a failed trial, which in turn might lead to increased maternal and perinatal morbidity and mortality rates [2]. In view of this,

Paper received on 26/07/2007 ; accepted on 20/01/2009

Correspondence :
Dr. Shah Jitesh M
C/o. N. M. Mehta
6, Navyug Colongy,
Opp. Bhulabhai Park, Gitamandir Road,
Ahmedabad - 380022.
Tel. (079) 25383723 (Resi.) 9426228108

trial of vaginal delivery in women with post cesarean pregnancy remains controversial and continuous critical audit of the trends is imperative. Women and their relatives should be informed and counseled regarding the safety and the risk involved in both the modes of delivery [6].

The purpose of this study was to look into this issue.

Methods

A prospective study was carried out on 385 women with previous one lower segment cesarean section (LSCS) from 1st January 2005 to 31st December 2006. Complete history including indication of previous CS, intra and postoperative complications during previous surgery, the details of the present pregnancy, scar tenderness and any other disorder were recorded. However, those who had presented with intrauterine fetal death, two previous CS and scar of other uterine surgery were excluded from the study.

Women with recurrent indications for CS or those having non recurrent indications with any complicating factors in present pregnancy were taken for elective LSCS (n=188). Those women with previous one LSCS for the non recurrent indications were given a trial for vaginal delivery (n=197).

Case selection for the trial for vaginal delivery was done as per ACOG guidelines –

- Singleton pregnancy
- Gestational age >34 weeks
- History of previous one LSCS
- Non recurrent indication for the previous LSCS

The labor was monitored with

- Hourly recording of maternal vital parameters, particularly pulse and BP
- Fetal heart rate monitoring by intermittent auscultation – every 15 minutes in the first stage and every 5 minutes in second stage of labor.
- Progress of labor as per WHO partograph
- A close watch for the early recognition of scar dehiscence by identifying maternal tachycardia, vaginal bleeding, scar tenderness and fetal distress

Attempt at vaginal delivery was abandoned if there was any suspicion of scar dehiscence or fetal distress or unsatisfactory progress of labor. All women were always prepared for emergency CS if need arose.

Data were analyzed using t test. Statistical significance was defined as $p<0.05$.

Results

During the period of study, a total of 385 women with previous one CS were included in the study protocol. Looking into the previous details and present findings, in 197 (51.2%) women (Table 1) vaginal delivery was contemplated and in 188 (48.8%) women elective CS was planned.

Table 1.

Group	No.
Vaginal trial	197 (51.2%)
Elective CS	188 (48.8%)

Table 2 shows the demographic profile. Most of the women (85.7%) belong to 21-30 years of age. Indications of the primary CS were mentioned in the table. In the study group, 77.1% of the women had term pregnancy. There were 10 women with >40 completed weeks, 8 women went into spontaneous labor and 2 women required induction of labor with oxytocin infusion with favorable Bishop's score.

Table 2. Demographic profile (n=385).

Parameters	Number
Age (years)	
21-25	87 (22.6%)
26-30	243 (63.1%)
31-35	43 (11.2%)
>35	12 (3.1%)
Period of gestation (weeks)	
34-37 weeks	78 (20.3%)
37-40 weeks	297 (77.1%)
>40 weeks	10 (2.6%)
Indication for previous cesarean delivery	
Fetopelvic disproportion	163 (42.2%)
Fetal distress	84 (21.8%)
Non progress of labor	38 (9.8%)
Malpresentation	32 (8.3%)
Antepartum hemorrhage	22 (5.6%)
Failed trial	13 (3.8%)
Failed induction	12 (3.1%)
Obstructed labor	11 (2.8%)
BOH	10 (2.6%)

As shown in Table 3, 72.1% women delivered vaginally in the trial group; 61.4% had spontaneous vaginal delivery and 10.7% women required outlet forceps or vacuum extraction either for the prolonged 2nd stage or fetal distress in 2nd stage. Fifty five women needed emergency LSCS, indications for which are given in Table 4. The commonest indication was fetal distress. In 12 women, scar tenderness was the indication, but during surgery, scar dehiscence was found in only one woman, which was repaired.

Table 3. Mode of delivery in trial of labor group (n=197).

Mode of delivery	Number
Spontaneous vaginal	121 (61.4%)
Instrumental	21 (10.7%)
Emergency repeat LSCS	55 (27.9%)

Table 4. Indications of repeat emergency LSCS (n=55).

Indications	Number
Fetal distress	26 (47.3%)
Non progress of labor	15 (27.3%)
Scar tenderness	12 (21.8%)
Abruptio placenta	02 (3.6%)

Maternal complications are shown in Table 5. There was no maternal mortality. Morbidities like pyrexia, PPH, wound gape, hematuria and blood transfusion requirement were more in repeat LSCS group while cervical / vaginal tears, traumatic PPH and scar complications were more common in the VBAC group. But the difference was not statistically significant (t=0.218, p>0.05).

Table 5. Maternal complications.

Type of complication	Repeat LSCS group	Vaginal delivery group
Pyrexia	3	1
Post apartum hemorrhage	4	2
Wound gap	3	0
Cervical/vaginal tear	0	4
Abruptio placenta	1	2
Hematuria	2	0
Blood transfusion required	3	0

t=0.218, p>0.05. The difference is not statistically significant.

Neonatal complications are shown in Table 6. Four neonates in repeat LSCS group required NICU admissions; one for fever, one for birth asphyxia and two for jaundice. All were discharged in good condition. Five neonates in vaginal delivery group required NICU admissions; two for birth asphyxia, one for septicemia and two for jaundice. All were discharged in good condition. There was no statistically significant difference in Apgar scores at one and five minutes in both the groups.

Table 6. Neonatal complications.

Type of complication	Repeat LSCS group	Vaginal delivery group
Fever	1	1
Asphyxia	2	3
Septicemia	0	1
Jaundice	2	2

t=0.488, p>0.05. The difference is not statistically significant.

Discussion

This study represents our observations over a period of two years. Women with prior one LSCS require special management, both antenatally and in labor. The decision for a trial of labor or the elective repeat LSCS is an individual one that should be based on careful selection and thorough counseling [4]. Maternal characteristics and obstetric history can provide a rough estimate.

Several studies suggest that for appropriately selected women with previous one LSCS, a trial for vaginal delivery is safe. Published literature shows that there has been a 60-80% success in VBAC [1-5,7]. Our success rate (72.1%) is comparable to these studies. Factors that negatively influence the likelihood of successful VBAC are believed to be cases with labor induction and augmentation, maternal obesity, gestational age >40 weeks, birth weight >4000 gm and inter delivery interval of less than 19 months [2,8]. A history of a previous successful VBAC increases the likelihood for success with future attempts [9,10].

The risk of uterine rupture is higher with an induced labor than with a spontaneous labor with trial[2,5]. Induction and augmentation with oxytocin is safe in selected cases with standard obstetric indications; but

use of prostaglandins for induction needs much caution. Bujold E et al[11] have reported that the single layer closure of the previous lower segment incision was associated with a four fold increase in the risk of uterine rupture compared with a double layer closure. In our study, the incidence of scar dehiscence is 0.7% which is comparable to other studies [4,7,12].

Neither repeat cesarean delivery nor trial of labor is risk free[7]. Maternal morbidity in terms of pyrexia, atonic PPH, hematuria, superficial wound gape and need for blood transfusion are more common in repeat CS group, while cervical and vaginal tear, traumatic PPH and uterine scar problems are more common in trial of vaginal delivery. However, the difference in maternal morbidity rate is not statistically significant [4,13-15]. This is evident in our study also. A trial of vaginal delivery may result in small but insignificant increase in the perinatal morbidity and mortality rates [4,13-15] which can be reduced by proper selection of cases.

Conclusion

The ability to predict women who are at high risk for failing the trial of vaginal delivery and those with high probability of successful vaginal delivery would help guide the clinician making good clinical decisions and minimizing adverse events. With proper selection, appropriate timing and close supervision by competent staff, trial of vaginal delivery eliminates the need for a large proportion of repeat cesarean operations. With some basics not forgotten, individualized approach seems to be the best.

References

1. Mukherjee SN. Rising cesarean section rate. J Obstet Gynaecol India 2006;56:298-300.
2. Chhabra S, Arora G. Delivery in women with previous cesarean section. J Obstet Gynaecol India 2006;56:304-7.
3. Tripathi JB, Doshi HU. Pattern of cervical dilatation in women with a previous cesarean section. J Obstet Gynaecol India 2005;55:125-7.
4. Shah SR, Prasad P. Outcome of labor in previous one lower segment cesarean section cases. Asian J Obstet Gynecol Pract 2006;10:7-11.
5. Vardhan S, Behera RC, Sandhu GS et al. Vaginal birth after cesarean delivery. J Obstet Gynaecol India 2006;56:320-3.
6. Landon MB, Hauth JC, Leveno KJ et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. N Engl J Med 2004;351:2581-9.
7. Flamm BL, Goings JR, Liu Y et al. Elective repeat cesarean delivery versus trial of labor: a prospective multicenter study. Obstet Gynecol 1994;83:927-32.
8. Hanley ML, Smulian JC, Lake MF et al. Analysis of repeat cesarean delivery indications: implications of heterogeneity. Am J Obstet Gynecol 1996;175:883-8.
9. Caughey AB, Shipp TD, Repke JT et al. Trial of labor after cesarean delivery: the effect of previous delivery. Am J Obstet Gynecol 1998;179:938-41.
10. Gyamfi C, Juhasz G, Gyamfi P et al. Increased success of trial of labor after previous vaginal birth after cesarean. Obstet Gynecol 2004;104:715-9.
11. Bujold E, Bujold C, Hamilton EF et al. The impact of a single layer or double layer closure on uterine rupture. Am J Obstet Gynecol 2002;186;1326-30.
12. Caughey AB, Shipp TD, Repke JT et al. Rate of uterine rupture during a trial of labor in women with one or two prior cesarean deliveries. Am J Obstet Gynecol 1999;181:872-6.
13. Dodd J, Crowther C. Vaginal birth after cesarean versus elective repeat cesarean for women with a single prior cesarean birth: a systemic review of the literature. Aust NZJ Obstet Gynaecol 2004;44:387-91.
14. McMahon MJ, Luther ER, Bowes WA et al. Comparison of a trial of labor with an elective second cesarean section. N Engl J Med. 1996;335:689-95.
15. Mozurkewich EL, Hutton EK. Elective repeat cesarean delivery versus trial of labor: a meta-analysis of the literature from 1989 to 1999. Am J Obstet Gynecol 2000;183:1187-97.