Success Rate of Vaginal Birth after Cesarean Delivery at Maharaj Nakorn Chiang Mai Hospital

THEERA TONGSONG, MD*,
CHANTIP JITAWONG, MD*

Abstract

Objective : To study the success rate of vaginal birth after cesarean delivery (VBAC) in pregnant women with prior cesarean scar who delivered at Maharaj Nakorn Chiang Mai Hospital.

Study Design : Prospective descriptive study.

Setting : Maharaj Nakorn Chiang Mai Hospital, Chiang Mai, Thailand.

Subject : One hundred and seventy-seven pregnant women with one or two prior cesarean deliveries, who attended the antenatal clinic and delivered at Maharaj Nakorn Chiang Mai Hospital between January, 2000 and September, 2002 were recruited with written informed consents.

Intervention : Systematic non-directive counseling concerning VBAC compared with elective repeated cesarean delivery was given to the pregnant women. Couples freely chose their preferred route of delivery and were informed that they could change their mind at anytime. Subjects attended the high risk antenatal care clinic. Patients who requested repeated cesarean deliveries were scheduled for the operation at 38 weeks of gestation. All VBAC patients were admitted to the labor unit when in labor and were closely monitored. Labor and postpartum information was prospectively recorded.

Main Outcome Measure : Success rate of VBAC.

Result : Of 177 counselled women, 118 chose VBAC, 54 chose repeated cesarean and 5 could not make a decision. Thirty-three of the177 cases were excluded, leaving 98 in the VBAC group and 46 in the repeated cesarean group. Baseline characteristics of the patients in both groups were not significantly different. Nineteen of the 98 cases were delivered by cesarean section because of obstetric indications (12/19) and changed their minds during the antenatal period (7/19). Forty-three of 79 cases had successful vaginal delivery, and 36 underwent repeated cesarean deliveries due to obstetric indications (19/36) and changed their minds during labor (17/36). The success rate of VBAC after trial of labor was 54.4 per cent (43 in 79). No uterine rupture or serious complication occurred in the present study.

Conclusion : The attitude for VBAC was 66.7 per cent and the success rate of VBAC after trial of labor was 54.4 per cent in the present series. Several cesarean deliveries could be avoided by the VBAC policy. Unlike other previous reports, the failure rate of VBAC was rather high. This was associated with many factors such as change of mind due to labor pain.

Key word : Vaginal Birth After Cesarean Delivery, Repeated Cesarean

TONGSONG T & JITAWONG C
J Med Assoc Thai 2003; 86: 829-835

* Department of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand.

'Once a cesarean, always a cesarean' was generally accepted in the early 1900s, the time that classical cesarean section was commonly used in the presence of a contracted bony pelvis. However, the majority of uterine incisions made today are low transverse incisions. In 1980, the Consensus Development Conference on Cesarean Child birth concluded that vaginal birth after a previous low transverse cesarean delivery (VBAC) was a safe and acceptable option[1, 2]. The American College of Obstetricians and Gynecologists (ACOG) Practice Bulletin regarding VBAC from 1998 summarizes that most women with one previous cesarean delivery with a low-transverse incision are candidates for VBAC and should be counseled about VBAC and offered a trial of labor[1].

In Thailand, the cesarean section rate at Maharaj Nakorn Chiang Mai Hospital in 1994 was 18.4 per cent[3], and was slightly decreased to 16.1 per cent in 1999[4]. This may be, in part, due to the impact of VBAC which has been introduced to our practice since 1994.

However, the authors have never studied the success rate of VBAC, risk of VBAC, maternal and neonatal morbidity and mortality compared with repeated cesarean section. Furthermore, no standard protocol for patient counseling about VBAC, as well as practical guidelines for VBAC has been developed. Therefore, the authors introduced the systematic protocol of patient counseling on VBAC and also assessed the attitude and success rate of VBAC, as well as, maternal and neonatal risks of VBAC at Maharaj Nakorn Chiang Mai Hospital.

MATERIAL AND METHOD

The study was approved by the ethical committee of the Faculty of Medicine, Chiang Mai University. Subjects were recruited from the antenatal clinic and labor room at Maharaj Nakorn Chiang Mai Hospital. The inclusion criteria included 1) pregnancy with one or two previous cesarean deliveries, 2) singleton pregnancy, 3) low transverse uterine incision, 4) no other history of other uterine scar, 5) delivery at Maharaj Nakorn Chiang Mai Hospital. The exclusion criteria included patients ending with abortion and patients lost to follow-up or giving birth elsewhere.

All subjects received the same protocol of counseling from the physicians well-trained for VBAC counseling. The main topics of counseling included the purpose, method of the study, advantages and disadvantages of VBAC and repeated cesarean section. The decision for delivery route was freely made by the couple and they could change their mind any time. The women meeting the inclusion criteria gave written informed consent. The patients making the decision for repeated cesarean delivery were scheduled for the operation at 38 weeks of gestation. All VBAC patients were admitted to the labor unit when the labor occurred and they were closely monitored for labor course and fetal well-being. Physicians were readily available throughout the labor who were capable of

monitoring labor and performing an emergency cesarean section and also the availability of anesthesia and personel for emergency cesarean section. The labor and postpartum information was prospectively recorded for subsequent analysis.

The primary outcome measure was the success rate of VBAC. Secondary outcome measures were as follows : 1) patient's attitude on the decision for delivery route, 2) factors associated with the failure of VBAC, 3) neonatal outcome assessed by Apgar score at 5 minutes. Chi-square, student *t*-test and Mann-Whitney test were used as appropriate. The result were considered statistically significant at $p < 0.05$.

RESULTS

From January 1st, 2000 to September 30th, 2002, there were 177 patients meeting the inclusion criteria. One hundred and eighteen patients chose VBAC, 54 patients chose repeated cesarean delivery and 5 patients could not make a decision. Thirty-three patients were excluded from the present study due to spontaneous abortion, changing their mind during the antenatal period. One hundred and forty-four patients were finally included in the study until delivery, 98 in the VBAC group and 46 in the repeated cesarean group.

In the VBAC group, 19 of 98 women planned for VBAC changed the delivery route due to changing their mind (7/19) and obstetric indications (12/19). Of the remaining 79 women planned for VBAC with trial of labor, 43 had successful vaginal delivery, including normal delivery (25), vacuum extraction (15), and forceps extraction (3). Thirty-six cases were required cesarean deliveries due to obstetric indications (19/36) and changing their mind during labor because of labor pain (17/36). (Flowchart 1)

There were no significant differences between the VBAC group and repeated cesarean group in the aspect of baseline data (maternal age, gestational age, occupation, and residency), the history of previous cesarean section (number of previous sections, indications, previous successful vaginal delivery), labor complications, and neonatal outcomes (Apgar scores at 5 minutes).

Notably, the number of patients undergoing tubal resection in the repeated cesarean section group was significantly higher than that in the VBAC group; (87% *vs* 59%, $p = 0.000$).

Concerning tubal resection, the repeat cesarean group (87%) had a higher tubal resection rate than the VBAC group (59%) ($p = 0.001$), and was statistically significantly different in both groups.

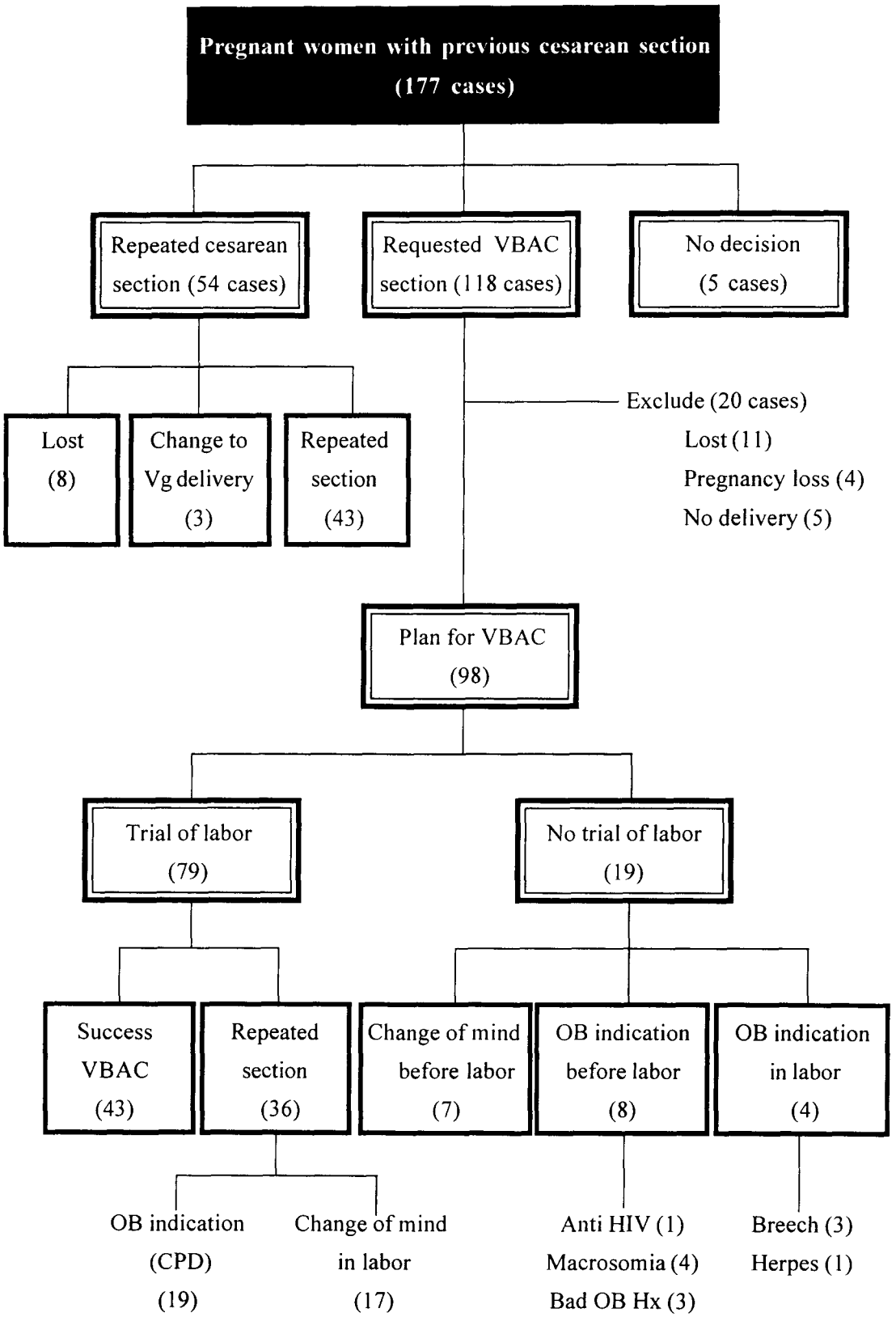
Additionally, the number of hospital days in the repeated cesarean group was significantly longer than that in the VBAC group (6 *vs* 5 days, $p = 0.0006$).

In summary, of the originally recruited patients, 66.7 per cent preferred a trial of labor, whereas 33.3 per cent chose an elective repeat. The success rate of VBAC in the present study was 54.4 per cent of the patients with trial of labor (43 of 79 patients).

DISCUSSION

The present results indicate that after proper counseling most pregnant women (approximately two-thirds) preferred a trial of labor rather than a repeated cesarean section, although a significant number later changed their mind due to various reasons. The present finding is exactly the same as that reviewed by Roberts et al[5]. Although the presented patients were counseled by different counselors and the individual difference in counseling might influence the patient's decision for or against a trial of labor, the authors believed that the patient's attitude to VBAC or repeated cesarean section in the present study was highly reliable due to the fact that all patients were given the same systematic standard protocol of non-directive counseling by standardized and well-trained counselors. Notably, the patient's baseline characteristics, except the desire for tubal resection, between the VBAC group and repeated cesarean group were not significantly different. The tubal resection rate was significantly higher among the patients of the repeated cesarean group. This implied that the patients who intended to have tubal resection had a tendency to choose an elective repeat with tubal resection in the same setting.

The success rate of VBAC in the trial labor group in the present study was 54.4 per cent, relatively low when compared to other previous reports, which quoted VBAC success rates of 60-80 per cent. For example, Martin[6] found the success route of VBAC was 75-82 per cent, in a study of 26,123 prior cesarean deliveries. Likewise, McMahon[7] reported a success rate of 60.4 per cent in 6,138 subjects. The first study of VBAC in Thailand at Ramathibodi Hospital[8], including 650 subjects, showed the success rate of 76 per cent. However, to compare success rates is difficult because the number of women offered a labor trial, hospital settings, and labor management differed. This may yield a selection bias because


Pregnant women with previous cesarean section (177 cases)
Repeated cesarean section (54 cases)
Requested VBAC section (118 cases)
No decision (5 cases)
Lost (8)
Change to Vg delivery (3)
Repeated section (43)
Exclude (20 cases)
Lost (11)
Pregnancy loss (4)
No delivery (5)
Plan for VBAC (98)
Trial of labor (79)
No trial of labor (19)
Success VBAC (43)
Repeated section (36)
Change of mind before labor (7)
OB indication before labor (8)
OB indication in labor (4)
OB indication (CPD) (19)
Change of mind in labor (17)
Anti HIV (1)
Macrosomia (4)
Bad OB Hx (3)
Breech (3)
Herpes (1)

candidates at perceived high risk for failure may have been excluded. The sample size of this study was too small to identify the factors influencing or predicting the success rate, however, the present small series suggests that labor pain may probably contribute to changing their mind during labor. Therefore, painless labor may be helpful.

Despite the small sample size and a rather high failure rate, the authors found significantly longer hospital stay in the group of repeated cesarean section. The pregnancy outcomes in terms of maternal complications especially uterine rupture, neonatal morbidity assessed by Apgar scores were not significantly different between both groups, but the sample size was too small to draw any conclusions. Rosen and et al[9] also found there were significant fewer postpartum fever subjects in the VBAC group. According to the ACOG Practice Bulletin, the incidence of uterine rupture among VBAC patients with low-transverse incision ranged from 0.2 per cent to 1.5 per cent[1].

The present small series also indicated that the repeated cesarean rate accounted for 30 per cent of the total cesarean rate and could be reduced to only 20 per cent by the VBAC policy[3].

In summary, the present results suggest that when proper counseling is offered to pregnant women with a previous cesarean section, most of them prefered VBAC rather than a repeated cesarean section. The success rate of VBAC was 54.4 per cent. Several cesarean deliveries could be avoided by the VBAC policy however, unlike other previous reports[6,7], the failure rate of VBAC was rather high. This was associated with many factors such as changing their mind due to labor pain.

(Received for publication on June 3, 2003)

REFERENCES

1. ACOG practice bulletin vaginal birth after previous cesarean delivery, October 1998. Int J of Gynecol Obstet 1999; 64: 201-8.
2. Mastrobattista JM. Vaginal birth after cesarean delivery. Obstet Gynecol Clin North Am 1999; 26: 295-304.
3. Annual report 1994, Maternal and fetal medicine: Obstet Gynecol Chiang Mai university 1994: 40.
4. Annual report 1999, Maternal and fetal medicine: Obstet Gynecol Chiang Mai university 1994: 40.
5. Roberts RG, Bell HS, Wall EM, Moy JG, Hess GH, Bower HP. Trial of labor or repeated cesarean section. The woman's choice. Arch Fam Med 1997; 6: 120-5
6. Martins ME. Vaginal birth after cesarean delivery. Clin Perinatol 1996; 23: 141-53.
7. McMahon MJ, Luther ER, Bowes wA, Olshan AF. Comparison of a trial of labor with an elective second cesarean section. N Engl J Med 1996; 335: 689-95.
8. Saropala W, Suthutvoravut S. The outcome of the first VBAC program in Thailand. Int J of Gyn & Obst 1999; 64: 307-8.
9. Rosen MG, Dickinson JC. Vaginal birth after cesarean : A meta- analysis of indicator for success. Obstet Gynecol 1990; 76: 865-9.

อัตราความสำเร็จของการคลอดทางช่องคลอดในหญิงตั้งครรภ์ที่เคยผ่าตัดคลอดในโรงพยาบาลมหาราชนครเชียงใหม่

ธีระ ทองสง, พบ, จันทร์ทิพย์ จิตรวงศ์, พบ**

วัตถุประสงค์ : เพื่อศึกษาถึงอัตราความสำเร็จของการคลอดทางช่องคลอดในหญิงตั้งครรภ์ที่เคยผ่าตัดคลอดมาฝากครรภ์และคลอดในโรงพยาบาลมหาราชนครเชียงใหม่

วิธีการ : เป็นการศึกษาเชิงพรรณาในหญิงตั้งครรภ์ที่มาฝากครรภ์ หรือมาคลอดที่โรงพยาบาลมหาราชนครเชียงใหม่ โดยมีประวัติผ่าตัดคลอดไม่เกิน 2 ครั้งจำนวน 177 คน ระหว่างวันที่ 1 มกราคม 2544 ถึงวันที่ 30 กันยายน 2545 ดำเนินการวิจัยโดย

- ให้คำปรึกษาเกี่ยวกับข้อดีและข้อด้อยของการคลอดทางช่องคลอด (VBAC) และการผ่าตัดในสตรีที่เคยผ่าตัดคลอด
- ให้สตรีตั้งครรภ์และคู่สมรสตัดสินใจเลือกวิธีการคลอดโดยอิสระและมีสิทธิเปลี่ยนใจเรื่องวิธีการคลอดตลอดการตั้งครรภ์
- กรณีที่เลือกผ่าตัดคลอดซ้ำ นัดมาผ่าตัดคลอดเมื่ออายุครรภ์ 38 สัปดาห์
- กรณีที่เลือก VBAC ให้มาโรงพยาบาลเมื่อเจ็บครรภ์คลอด และได้รับการเฝ้าติดตามการคลอดและสุขภาพทารกในครรภ์อย่างใกล้ชิด

ผลการศึกษา : มีผู้เข้าร่วมวิจัย 177 คน, 118 คนเลือก VBAC, 54 คนเลือกผ่าตัดคลอดซ้ำ, 5 คนยังไม่ตัดสินใจ ข้อมูลพื้นฐานของทั้งสองกลุ่มไม่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ 33 คน ถูกคัดออกจากการวิจัย ทำให้เหลือผู้เข้าร่วมวิจัยเพียง 144 คน ประกอบด้วยกลุ่ม VBAC 98 คน กลุ่มผ่าตัดคลอด 46 คน

ในกลุ่มเลือกผ่าตัดคลอดซ้ำ 46 คน พบว่า 3 คนคลอดทางช่องคลอดสำเร็จ และ 43 คนมาผ่าตัดคลอดซ้ำ ในกลุ่มเลือก VBAC 98 คน ต่อมา 19 คนเปลี่ยนวิธีการคลอด มีผู้เข้าร่วมวิจัยที่เข้าสู่ระยะคลอดและพยายาม VBAC 79 คน เมื่อเฝ้าติดตามการคลอดต่อไป พบว่า 43 คนสามารถ VBAC สำเร็จ โดยคลอดปกติ 25 คน, ใช้เครื่องดูดสูญญากาศ 15 คนและใช้คีมช่วยคลอด 3 คน ในกลุ่มเลือก VBAC ที่ล้มเหลวต่อการ VBAC ที่ต้องผ่าตัดคลอดซ้ำในระยะเจ็บครรภ์คลอดมี 36 คน 19 คนเนื่องเหตุผลทางสูติศาสตร์และ 17 คนเนื่องจากผู้เข้าร่วมวิจัยเปลี่ยนใจ

12 คนในกลุ่มเลือก VBAC มีภาวะแทรกซ้อนจากการคลอด ในขณะที่กลุ่มเลือกผ่าตัดคลอดซ้ำมี 4 คน แต่อย่างไรก็ตาม พบว่าไม่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ (p = 0.414) และไม่พบภาวะมดลูกแตกและภาวะแทรกซ้อนรุนแรงจากการศึกษานี้

ในกลุ่มเลือกผ่าตัดคลอดซ้ำทำหมันหลังคลอด 40 คน (40/44) ขณะที่กลุ่มเลือก VBAC ทำหมัน 58 คน (58/98) ซึ่งพบว่ามีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ (p = 0.001)

กลุ่มเลือกผ่าตัดคลอดซ้ำมีค่ากลางของระยะเวลานอนโรงพยาบาล 6 วัน ขณะที่กลุ่มเลือก VBAC มีค่ากลางของระยะเวลาในการนอนโรงพยาบาลนาน 5 วัน ซึ่งมีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ (p = 0.0006)

ค่ากลางของ Apgar score ในสองกลุ่มไม่มีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ (p = 0.158)

สรุป : ทัศนคติของหญิงตั้งครรภ์หลังจากได้รับคำปรึกษาเรื่องข้อดีและข้อด้อยของ VBAC เทียบกับผ่าตัดคลอดซ้ำ พบว่าตัดสินใจเลือก VBAC ถึงร้อยละ 66.7 แต่เมื่อเข้าสู่ระยะคลอดพบว่า อัตราความสำเร็จของ VBAC เพียงร้อยละ 54.4 นับว่ามีอัตราความล้มเหลวสูงกว่าการศึกษาอื่น ๆ ที่ผ่านมา อาจสัมพันธ์กับปัจจัยหลาย ๆ อย่างที่สำคัญคือ ความเจ็บปวดรุนแรงในระยะคลอด

คำสำคัญ : การคลอดทางช่องคลอดหลังการผ่าตัดคลอด, การผ่าตัดคลอดซ้ำ

ธีระ ทองสง, จันทร์ทิพย์ จิตรวงศ์
จดหมายเหตุทางแพทย์ ฯ 2546; 86: 829–835

* ภาควิชาสูติศาสตร์และนรีเวชวิทยา, คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่, เชียงใหม่ 50200