Patient Counseling and Preferences for Elective Repeat Cesarean Delivery

Susan Folsom, MS1 M. Sean Esplin, MD1,2 Sean Edmunds, MD1 Torri D. Metz, MD3 G. Marc Jackson, MD1,2 T. Flint Porter, MD1,2 Michael W. Varner, MD1,2

1 Division of Maternal Fetal Medicine, University of Utah Health Sciences Center, Salt Lake City, Utah
2 Division of Maternal Fetal Medicine, Intermountain Healthcare, Salt Lake City, Utah
3 Division of Maternal Fetal Medicine, Denver Health Medical Center, Denver, Colorado

Address for correspondence M. Sean Esplin, MD, Division of Maternal Fetal Medicine, Intermountain Medical Center, Suite 100, 5121 S Cottonwood St, Salt Lake City, UT 84107 (e-mail: sean.esplin@imail.org).

Abstract

Objective We sought to identify factors influencing a woman’s decision to have an elective repeat cesarean delivery (ERCD) versus vaginal birth after cesarean (VBAC).

Methods and Materials A prospective study at two academic medical centers of women with one prior cesarean, and no contraindication to a trial of labor, delivered by ERCD from October 2013 to June 2014. Participants completed anonymous surveys during their delivery hospitalization. Counseling was considered adequate if women reported being counseled, recalled being quoted a VBAC success probability, and this probability was within 20% of that derived from an established VBAC success prediction model. Participants were also asked why they chose ERCD.

Results Of 68 participants, only 8 (11.8%) had adequate counseling. Of those with inadequate counseling, 21.7% did not recall being counseled, 63.3% were not quoted a chance of success, and 60.0% had more than a 20% discrepancy between their recalled and predicted success rates. Eighteen women were calculated to have more than 70% chance of successful VBAC. Of these, 16 (88.9%) were not adequately counseled.

Conclusion Most women were inadequately counseled about delivery options. The most important factors influencing the choice of ERCD over VBAC were patient preferences, risk for fetal injury, and perceived physician preference.

Cesarean delivery (CD) rates continue to increase in the United States and around the world. One approach for reduction of CD rates in the United States is safe prevention of the initial CD. However, equally important is prevention of the second or repeat CD. In fact, elective repeat CD (ERCD) is a significant contributor to the overall increased CD rates and accounted for 40.5% of all cesareans in the United States in 2013.

When compared with routine ERCD, planned vaginal birth after cesarean (VBAC) is safe for the mother and newborn. A systematic review and meta-analysis of 203 studies demonstrated that maternal mortality was increased significantly with ERCD compared with planned VBAC (1.34 vs. 0.38 per 10,000 live births). However, only 8.5% of U.S. women experienced VBAC in 2006—an incredible 70% drop from the reported rate 10 years earlier (28.2% in 1996). The challenges of interpreting and applying the complex potential risks and benefits for this procedure is one of the reasons for the low rate of attempted VBAC.

We have previously shown that many women who were good candidates for VBAC (defined as having a calculated chance of successful VBAC of 70% or more) chose to have an ERCD. Several factors, including the prenatal care provider,
were associated with a patient’s choice of whether or not to attempt a VBAC. If we hope to decrease the CD rate going forward, it is critical that we identify the factors that are most important for women as they make this decision.

We hypothesized that pregnant women who have had one previous CD do not receive adequate or accurate counseling about their predicted VBAC success rates. In addition, we hypothesized that we could identify the factors that are most important to women who are making this important decision and thus provide insight into the optimal counseling for women in this clinical scenario in the future.

**Material and Methods**

We performed an observational study at two affiliated academic medical centers in Salt Lake City, Utah (University of Utah Health Sciences Center and Intermountain Medical Center). After obtaining approval from the institutional review board, we approached women who had undergone an ERCD and asked them to complete a questionnaire about their experience making the decision to have an ERCD.

Women were included in the study if they had only one prior CD, a singleton pregnancy at term, and did not have any contraindication for attempting VBAC but chose to have an ERCD. Women with a contraindication to labor (including presence of a prior classical incision or vertical extension of a low-transverse uterine incision, fetal malpresentation, placenta previa, or active genital herpes infection) were excluded. To avoid the confounding effect of a secondary indication for laparotomy, women who had a tubal ligation or other planned surgical procedure along with their ERCD were also excluded.

Women were approached in the postoperative period (postoperative day 1–4) after having an ERCD and were invited to complete a questionnaire regarding the counseling that they received and the reasons that they chose to have an ERCD instead of attempting a VBAC. Women were queried during their postpartum hospitalization to assess the factors that affected their final decision to have an ERCD. Information was gathered about their previous delivery to allow for a calculation of the chance of success for VBAC had the patient chosen to have a trial of labor. The patient’s demographic

![Survey used in the study.](image-url)
information was entered into the Maternal-Fetal Medicine Units Network VBAC calculator for use at the first prenatal visit (https://mfmu.bsc.gwu.edu/PublicBSC/MFMU/VGBirth-Calc/vagbirth.html) and the predicted VBAC success rate was recorded for each participant.

We sought to determine if participants received adequate counseling about their predicted VBAC success rates. For the purposes of this study, women were considered to have adequate counseling if they met all three of the following criteria: (1) the patient reported being counseled about VBAC, (2) the patient could recall being quoted a percent chance of success, and (3) the patient’s recalled estimate of success was within 20% of the calculated estimate.

The patient was also asked to rate on a 5-point Likert scale (from Not Important to Very Important) the importance of 16 different potential factors in her decision to have an ERCD instead of attempting a VBAC (Fig. 1). Participants also rated the importance of their own wishes and the wishes of their partners, families, and physicians with respect to preference for an ERCD. The importance of the wishes of these parties was rated by the participant on a scale of 0 to 100, with 0 corresponding to not important and 100 correlating with very important.

Demographic characteristics of the study group were summarized with means and standard deviations for continuous measures and as N (%) for categorical variables. Prior to initiating the study, approval was obtained from the institutional review boards of Intermountain Healthcare and the University of Utah.

Table 1 Summary demographic characteristics of study participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women enrolled (N = 68)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age (years)</td>
<td>30.5 ± 4.5a</td>
</tr>
<tr>
<td>Weight at admission (pounds)</td>
<td>188.0 ± 46.1a</td>
</tr>
<tr>
<td>Height (inches)</td>
<td>63.4 ± 3.1a</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>33.0 ± 6.6a</td>
</tr>
<tr>
<td>Caucasian race N (%)</td>
<td>53 (77.9%)</td>
</tr>
<tr>
<td>Delivery hospital</td>
<td></td>
</tr>
<tr>
<td>Intermountain Medical Center</td>
<td>40 (58.9%)</td>
</tr>
<tr>
<td>University of Utah Health</td>
<td>28 (41.1%)</td>
</tr>
<tr>
<td>Sciences Center</td>
<td></td>
</tr>
<tr>
<td>Provider type</td>
<td></td>
</tr>
<tr>
<td>General OB/GYN</td>
<td>54 (80%)</td>
</tr>
<tr>
<td>Maternal fetal medicine</td>
<td>12 (18%)</td>
</tr>
<tr>
<td>Family practice</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Indication for previous CD</td>
<td></td>
</tr>
<tr>
<td>Malpresentation</td>
<td>7 (10.3%)</td>
</tr>
<tr>
<td>Arrest of dilation</td>
<td>13 (19.1%)</td>
</tr>
<tr>
<td>Arrest of descent</td>
<td>10 (14.7%)</td>
</tr>
<tr>
<td>Fetal distress</td>
<td>29 (42.6%)</td>
</tr>
<tr>
<td>Elective/other (HSV)</td>
<td>9 (13.2%)</td>
</tr>
<tr>
<td>Previous vaginal delivery</td>
<td>5 (7.3%)</td>
</tr>
</tbody>
</table>

Abbreviations: BMI, body mass index; CD, cesarean delivery; HSV, herpes simplex virus; OB/GYN, obstetrician/gynecologist.

In an attempt to identify the most important factors that women considered while making the decision to have an ERCD versus attempted VBAC, we asked the study participants to rate the importance of their own preferences and the preferences of their partners, families, and physicians (Fig. 4). While the participants’ own preferences were rated the highest among all subjects and among those who were good candidates for VBAC, the second most important factor was the perceived preference of their physicians, which was rated higher than the preferences of both their partners and their families.

The participants who were good candidates for VBAC were also asked to rate how strongly their physician recommended an ERCD and how strongly the subject herself wanted to have an ERCD (Fig. 5). Interestingly, a third of the women (6/18) perceived their own desire to have an ERCD to be much lower than their physician’s preference for an ERCD. In fact, 10 of the 18 good candidates for successful VBAC perceived that their physician recommended an ERCD (score > 50 on the 0–100 scale).

We also asked subjects to rate the importance of individual factors in their decision to have an ERCD versus attempted VBAC (Fig. 6). Women rated each factor on a scale of 0 (Not important) to 5 ( Extremely important). The
most important factors were fear of injury to their infant (median: 4.5; interquartile range: 1), the risk of failed VBAC (median: 4; interquartile range: 2), and wanting to have their own physician present at delivery (median: 3; interquartile range: 2).

**Comment**

We sought to identify factors that are important in a woman’s decision to have an ERCD instead of attempting a VBAC. We found that the majority of participants did not receive adequate counseling about their likelihood for a successful VBAC. Among women whose predicted VBAC success rates were more than 70%, 16 (88.9%) of 18 were not adequately counseled and the large majority (15 of 18) underestimated their chance for successful VBAC. Assuming a 70% success rate among these 18 women had they chosen to attempt VBAC, 13 patients could have had a successful VBAC and 19% of the 68 ERCDs could have been prevented.

Our study has identified some of the nonmedical factors that influence the patterns and utilization of VBAC—one of the key questions raised by the March 2010 National
Institutes of Health (NIH) Consensus Development Conference Statement on VBAC. We found that women are most concerned about the risk of injury to their infant when they consider the decision of whether or not to attempt a VBAC. The risk of failure and the desire to have their own physician present for the delivery are additional important factors in this decision. Integration of an assessment of women’s fears regarding VBAC into patient counseling may help to tailor the information and would allow for a more personalized approach to counseling.

It is striking that the rate of adequate counseling was so low in this population. We defined adequate counseling in very general terms but it is reasonable to assume that a patient who is adequately counseled would remember the discussion about the option of VBAC, would have been quoted a relative chance for successful VBAC, and would have an accurate idea of her chance for successful VBAC. These criteria can be considered to assess adequacy of counseling in future studies. All patients who receive counseling should be given a calculated estimate of successful VBAC to make a truly informed decision.

This study documents the gap that still exists between patient and provider preferences with respect to attempted VBAC. Although we found that our participants’ preferences were the most important factor in their decisions, their physicians’ preference about mode of delivery was the second most important factor, even more important than the preferences of spouses or other family members. The importance of the prenatal care provider in the decision-making process regarding VBAC has been documented earlier. Yet, among the best candidates for VBAC, there was a wide gap between the patient’s desires and the physician’s recommendations, demonstrating the conflict that exists. It is possible that differences noted in this study are biased by the patients’ perceptions of their physicians’ preferences, but if such a bias does exist, then the physician has likely done an inadequate job of counseling the patient. In a setting where the patient and physician preferences are both considered in the decision-making process, a thorough discussion of the risks, benefit, and alternatives should result in a narrowing of the gap between the patient and the physician preferences.

Although our study directly addresses several of the important gaps in knowledge identified by the NIH consensus conference, it does have several limitations. First, our study population consisted primarily of low-risk Caucasian women. The findings of this study may thus not be generalizable to populations with more racial diversity or higher risk patients. In addition, we approached a convenience sample of women...
who delivered over the study time period. This was random based on the investigator's availability and was unlikely to have resulted in a systematic bias. There were no women who declined to participate when approached. The relatively small number of women in the study makes it impossible to draw conclusions about all of the sociodemographic factors that may be important in this situation.

The fact that the survey was conducted after the ERCD had been performed may also have biased our results, but we did not believe that this study could be completed with preoperative interviews without exposing the patient–physician relationship to potential compromise. Finally, we chose to focus on women who elected to have an ERCD and not on those who attempted a VBAC and thus we are not able to compare the experiences of these two groups. Our primary intent was to study counseling practices with women who are good candidates for VBAC but did not choose VBAC.

This study has defined the importance of patient perception and accuracy of counseling for women interested in VBAC and has identified key factors that should be addressed in this decision-making process. Further studies showing the implementation of adequate counseling practices are warranted. We believe that if the rate of adequate counseling increases, patients who are good candidates for VBAC will be more likely to choose this option resulting in a significant reduction in the rate of repeat CD.

Conflict of Interest
The authors report no conflict of interest.

Presentation
This study was presented at the 35th Annual Society of Maternal Fetal Medicine Meeting (February 2015, San Diego, CA) as a poster presentation.

References
7. Shorten A. Bridging the gap between mothers and medicine: “new insights” from the NIH Consensus Conference on VBAC. Birth 2010;37(3):181–183