

Patient Counseling and Preferences for Elective Repeat Cesarean Delivery

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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.

Keywords

- ▶ elective repeat cesarean delivery
- ▶ vaginal birth after cesarean
- ▶ counseling
- ▶ patient 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.¹ 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.^{2,3}

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).⁴ 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).^{4,5} 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.⁶ Several factors, including the prenatal care provider,

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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

How important were the following factors in your decision to have a repeat cesarean section without trying to have a vaginal delivery					
	Not at all important	Slightly important	Somewhat important	Very important	Extremely important
Your own desires about your delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your belief that you would be unsuccessful if you tried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your family's desires about your delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your spouse's (significant other's) desires about your delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your doctor's desires about your delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your fear of uterine rupture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your fear of injury to your baby	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Issues about the cost of delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ideas about your recovery after delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your desire to avoid labor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The convenience of planning or scheduling your delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The risk of a failed attempt to have a vaginal delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your desire to avoid induction of labor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your desire to have a tubal ligation at the same time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your desires to prevent future problems like urinary incontinence or vaginal prolapse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your desire to have your own doctor present for your delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Fig. 1 Survey used in the study.

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/VGBirthCalc/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.

Results

Between October 2013 and June 2014, 68 women were enrolled in the study. There were 28 women at the University of Utah Health Sciences Center and 40 women at Intermountain Medical Center who participated. The demographics of study participants are given in ►Table 1. There were no differences in the demographics or any other outcome between the two institutions (data not shown). The majority of subjects who participated were cared for by a general obstetrician/gynecologist.

Fifty-five (80%) women reported that they were offered an attempt at VBAC. Only 8 (11.8%) of the 68 women who completed the survey met our criteria for adequate counseling (►Fig. 2). Of those with inadequate counseling, 13 (21.7%) did not recall being counseled, 38 (63.3%) were not quoted a percent chance of success, and 36 (60%) had more than 20% discrepancy in their estimate of their chance of successful VBAC compared with the calculated chance of success.

There were 18 (26.4%) women who were calculated to have more than 70% chance of successful VBAC. Of these, 16 (88.9%) were not adequately counseled and 13 (72%) had a more than 20% discrepancy between the calculated chance of success and their own perceived chance of success. A comparison of the calculated chance for successful VBAC and the patient's own perception of her chance for a successful VBAC is shown in ►Fig. 3. Of the 18 women, 15 (83%) of these women underestimated their chance of success.

Table 1 Summary demographic characteristics of study participants

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

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

^aValues given in mean and standard deviation.

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

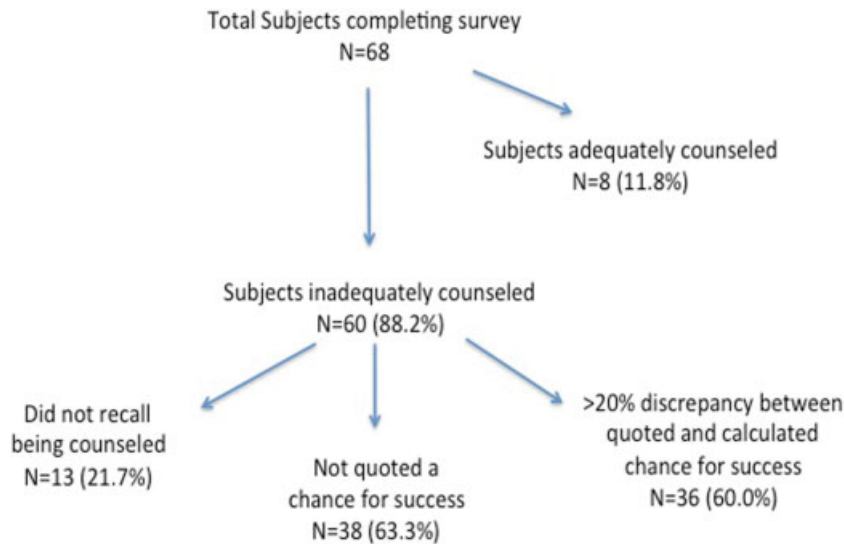


Fig. 2 Adequacy of vaginal birth after cesarean counseling received by subjects who chose to have an elective repeat cesarean delivery.

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 ade-

quate 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

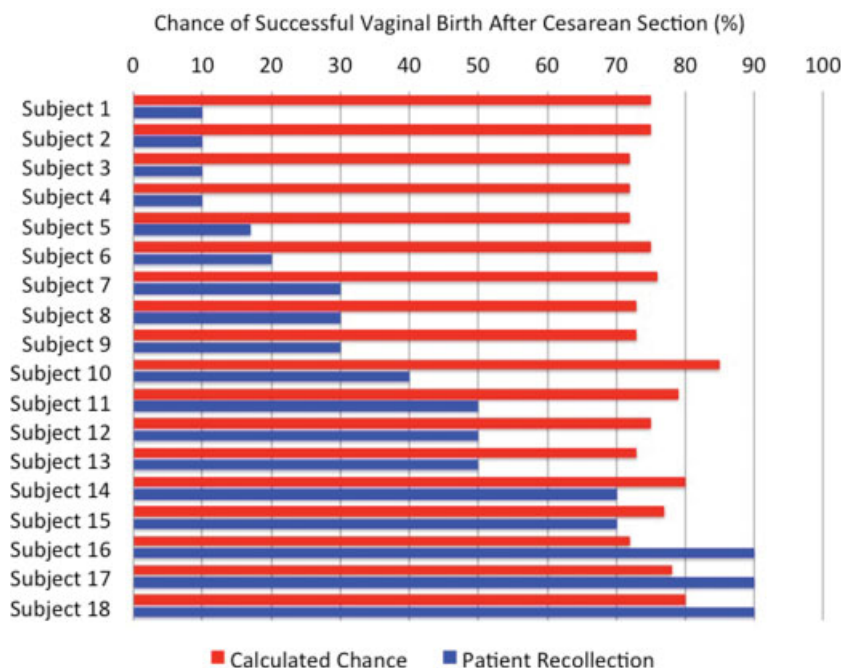


Fig. 3 Calculated chance for successful vaginal birth after cesarean (VBAC; red bars) and the patient’s perceived chance of successful VBAC (blue bars) among 18 women who were good candidates for VBAC (more than 70% calculated chance of successful VBAC).

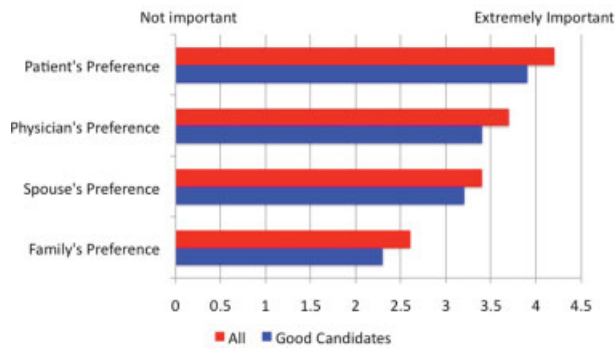


Fig. 4 Response to the question “How important were the following factors in your decision to have a repeat cesarean section?” (0 = Not important and 5 = Extremely important). Results of all of the study participants are represented in red bars and those who were good candidates for attempted vaginal birth after cesarean are represented by blue bars.

Institutes of Health (NIH) Consensus Development Conference Statement on VBAC.⁷ 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.⁸

This study documents the gap that still exists between patient and provider preferences with respect to attempted VBAC.⁸ 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.⁶ 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

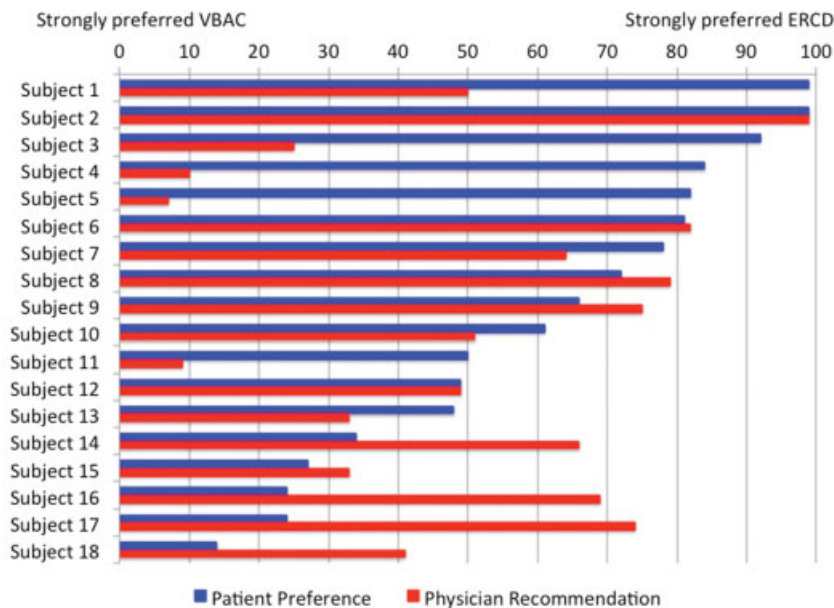


Fig. 5 Responses of 18 women who were good candidates for vaginal birth after cesarean (VBAC; more than 70% calculated chance of successful VBAC) when asked to rate their preference for delivery (blue bars) on a scale of 0 (strongly preferred attempting VBAC) to 100 (strongly preferred cesarean delivery) and their perception of their physicians’ preference (red bars) on a scale of 0 (strongly recommended attempting VBAC) to 100 (strongly recommended cesarean delivery).



Fig. 6 Subjects were asked to rate on a scale of 0 (not important) to 5 (extremely important) the importance of several factors in their decision to have an elective repeat cesarean delivery instead of attempting a vaginal birth after cesarean (VBAC). The responses from all of the study participants are represented by red bars and responses from women who were good candidates for VBAC are depicted by blue bars.

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

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