IN THE LITERATURE

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Safety of VBACs in Birth Centers: Choices and Risks

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An important and long-awaited paper on the outcomes of childbearing women who sought a vaginal birth after cesarean (VBAC) in out-of-hospital birth centers in the United States was published in 2004 by Lieberman et al (1). This paper adds to the discussion of the safety and efficacy of care for women who desire a VBAC. The authors' main conclusion was that VBACs should be attempted within hospitals because of the elevated risks of adverse outcomes (particularly perinatal mortality) in birth center settings—a conclusion that, in my view, overstates the absolute risks and will contribute to reduced access to VBAC care.

This study collected data from intended VBAC deliveries in free-standing birth centers from 1990 to 2000. Significantly, during this decade many things changed about obstetric care in general, and about VBAC care in particular:

- In-hospital care for VBACs, as for all vaginal births, grew ever more technically focused.
- A nursing shortage for the nation resulted in fewer registered nurses to provide supportive care for women in labor.
- Opinions of the American College of Obstetricians and Gynecologists (ACOG) changed from encouraging VBACs in 1988 to discouraging them in 1999, except where physicians were constantly available for emergencies.
- The overall proportion of VBACs in the nation rose from 20 percent in 1990 to a high of 28.3 percent in 1996, then fell again to 20 percent in 2000 (2,3).

In 1990, nearly half of the 123 operational free-standing birth centers in the United States were performing VBACs and participated in data collection for this study. These centers provided informed consent for VBAC patients, had physician and institutional support, and emergency care plans in place. Study staff verified completeness and accuracy of data through site visits and phone calls to participating centers. Some centers ceased study participation during the 1990s because they closed.

Of 1,913 women who planned a VBAC delivery, 1,453 presented to one of the birth centers during labor. As a group, these women were more advantaged than usual: they averaged 31 years of age, two-thirds had attended college, 89 percent were white, and 93 percent had 1 prior cesarean. Of women who labored at birth centers, 87 percent achieved a normal vaginal birth. This is a higher success rate than the 60 to 80 percent that is typically reported (4). The authors evaluated 4 adverse outcomes: uterine ruptures, hysterectomies, low 5-minute Apgar scores (< 7), and perinatal deaths (deaths during labor or in the early neonatal period).

In the study, 6 uterine ruptures occurred (for an overall rate of 4 per 1,000 live births). Five of these 6

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women were transferred to a hospital *during labor* for fetal indications, and were delivered by cesarean section. Three of the 5 women had 2 prior cesareans, and because of the elevated risk of uterine rupture with more than 1 cesarean, probably should not have been in the birth center group. The woman with the remaining uterine rupture was transferred to a hospital after the birth for persistent vaginal bleeding. As noted by the authors, if the study had been restricted to women with only 1 cesarean, the uterine rupture rate would have been 2 per 1,000 births—a rate well below the expected rate of 5 to 6 ruptures per 1,000 births for this rare outcome (5,6).

One woman who received birth center care had a hysterectomy (rate of 0.7 per 1,000 births). In a meta-analysis of over 26,000 trials of labor and over 17,000 elective repeat cesareans, the rate of hysterectomy was found to be 1.6 per 1,000 with a trial of labor, and 4.1 per 1,000 with elective repeat cesarean (5). All that can be said about the single case from the birth centers is that it is below the range of expectation.

One percent of newborns in the birth center study had 5-minute Apgar scores below 7. This rate is the same as that observed in other large studies of well-screened, healthy women in midwifery care who were not receiving oxytocin or epidurals during labor (7,8).

Seven perinatal deaths were reported in the study for a rate of 5 per 1,000 births. Four of the 7 perinatal deaths occurred in mothers with 2 prior cesareans, or who were postdates, both indications for a hospital birth. If only 3 deaths had occurred in connection with birth center care, the perinatal mortality rate would have been 2 per 1,000 live births, as noted by the authors (1). In 2000 the overall perinatal mortality for the United States was 7 per 1,000 births (9). Given that rate averaged over all 4 million births in the nation, perinatal mortality is always observed to be less in healthy populations and higher for women with complications. For example, perinatal mortality has been calculated as 1.3 per 1,000 births in women at 40 weeks' gestation, with babies weighing 3,500 to 3,999 g, and with no placental abruption, but 25 times higher for similar women at term with abruptions (10). A rate of 2 per 1,000 is not in excess, and has been observed in several studies of planned home births (11).

An important lesson to be learned from the birth center VBAC study is that postdates women and those with 2 or more cesareans are not suitable candidates for out-of-hospital care, which is clear from the excess rate of serious complications in these women. However, interpreting the meaning of rare adverse outcomes in the rest of the women is less simple. Below-average rates of mortality or serious morbidity in birth center populations are to be expected; these are healthy, well-screened women. But how low is reasonable to expect? Without huge numbers, stable rates for rare events cannot be determined, and comparisons between studies cannot be viewed as definitive.

Women who choose birth center care are more likely to have a spontaneous vaginal birth, VBAC or not. This comes as no surprise, because birth centers provide individualized and supportive care, and labor management does not involve electronic fetal monitors, oxytocin, and epidurals as routine procedures. If a woman with a history of *1* prior cesarean (who is not postdates) strongly desires to have a vaginal birth in the current pregnancy, her best chance for meeting this goal is with birth center care. Birth centers are the settings where evidence-based care for vaginal birth is most likely to be demonstrated.

The problem with a VBAC, *as for any vaginal birth*, is that serious untoward events are actually rare. Risk assessment remains an imperfect science, because it involves applying population-based data to individual women. Some perinatal events can never be predicted, regardless of the place of birth. This fact underscores the need for discussion of risks and benefits of the place of birth, institutional affiliations, and plans for handling emergencies, as demonstrated by the birth center practitioners in this study.

When the occasional baby dies in a hospital, no one blames the hospital. Why would birth centers be expected to have a perfect record? Only two-thirds of all US women have vaginal births in hospitals, and those who do are overtreated with numerous technical procedures. Birth centers have important lessons to teach about appropriate care for vaginal birth. When care guidelines are issued based on very small numbers of adverse events, actual risks are overstated and options for women are curtailed. As a result, regrettably, maternity care options for childbearing women in the United States seem to be diminishing year by year.

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