ACOG Updates Recommendations on Vaginal Birth After Previous Cesarean Delivery

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The rate of cesarean delivery has increased dramatically in the United States over the past four decades, perpetuated somewhat by the dictum "once a cesarean, always a cesarean." However, evidence has shown that many women who have had a cesarean delivery can safely deliver vaginally in subsequent pregnancies. Advantages of this approach include avoidance of major surgery, lower risk of hemorrhage and infection, and shorter recovery periods. Between 1985 and 1996, rates of vaginal birth after previous cesarean delivery (VBAC) increased steadily. Since the mid-1990s, however, medicolegal issues and concerns about the risk of uterine rupture have contributed to a reversal in this trend.

Although a trial of labor after previous cesarean delivery (TOLAC) is appropriate in select women, several factors increase the likelihood of complications. The risks associated with TOLAC are the same as those associated with elective repeat cesarean delivery: maternal hemorrhage, infection, operative injury, thromboembolism, hysterectomy, and death. Because most maternal morbidity during TOLAC occurs when repeat cesarean delivery becomes necessary, VBAC is associated with fewer complications than elective repeat cesarean delivery, and failed TOLAC is associated with more complications. The outcome of TOLAC that most significantly increases the risk of maternal and neonatal morbidity is uterine rupture or dehiscence. The incidence of uterine rupture varies, but the risk is higher in women with a history of hysterotomies. The location of the prior uterine incision influences risk.

Determining Candidates for TOLAC

Most studies of women attempting TOLAC have shown a 60 to 80 percent probability of VBAC. Individual demographic and obstetric factors that affect a woman's probability of successful TOLAC are listed in *Table 1.* Women in whom the balance of risks and the chances of successful VBAC are acceptable to the patient and the physician are good candidates for planned TOLAC. Decisions about TOLAC should take into account the possibility of future pregnancies, because delivery ▶

Table 1. Factors Associated with Successful Trial of Labor After Previous Cesarean Delivery

Increased probability of success
Previous vaginal birth
Spontaneous labor
Decreased probability of success
Gestational age greater than 40 weeks
Increased maternal age
Increased neonatal birth weight
Maternal obesity
Nonwhite ethnicity
Preeclampsia
Recurrent indication for cesarean delivery
Short interpregnancy interval

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decisions made in the first pregnancy after a cesarean delivery typically affect plans in subsequent pregnancies. Because of the risks associated with TOLAC, it should be attempted in facilities with staff immediately available to provide emergency care.

PRIOR DELIVERIES

Most women who have had one previous cesarean delivery with a low transverse incision should be counseled about VBAC and offered TOLAC. Women who had a low vertical incision seem to have similar rates of successful VBAC, and may attempt TOLAC. Women at high risk of complications (e.g., those with a previous classical or T-incision, prior uterine rupture, or extensive transfundal uterine surgery) and those in whom vaginal delivery is otherwise contraindicated (e.g., those with placenta previa) are not generally candidates for planned TOLAC.

The safety of VBAC has been questioned in women who had a previous cesarean delivery with an unknown incision type. However, two case series reported similar rates of successful VBAC between women with unknown previous incision types and those with previous low transverse incisions. No significant association was noted between unknown incision types and rates of uterine rupture. Therefore, TOLAC is not contraindicated in women who have had one previous cesarean delivery with an unknown incision type, unless there is high clinical suspicion of a previous classical incision.

It is unclear whether the risk of uterine rupture is lower in women attempting TOLAC who have had only one previous cesarean delivery compared with those who have had more. The chances of achieving VBAC are similar between these groups of women. Therefore, it is reasonable to consider TOLAC in women who have had two previous low transverse cesarean deliveries, and to counsel them based on other factors that affect their chances of successful VBAC. Data on the risk in women who have had more than two previous cesarean deliveries are limited.

MACROSOMIA

Women attempting TOLAC with a macrosomic fetus (greater than 4,000 to 4,500 g [8 lb, 13 oz to 9 lb, 15 oz]) have a lower likelihood of successful VBAC than those who have a nonmacrosomic fetus. Women who have had a previous cesarean delivery because of dystocia also have a lower likelihood of VBAC if the weight of the current fetus is greater than that of the index pregnancy. There is limited evidence that the risk of uterine rupture is greater in women who have not had a previous vaginal delivery and who are attempting TOLAC with a macrosomic fetus. It is important to note, however, that these data are based on actual—not predicted—birth weight, thus limiting their applicability when making delivery decisions antenatally. Although previous and predicted birth weights should be considered when making delivery decisions, suspected macrosomia alone is not a contraindication for TOLAC.

GESTATION BEYOND 40 WEEKS

Rates of VBAC are consistently lower in women who attempt TOLAC after 40 weeks' gestation. However, most studies have not shown that the risk of uterine rupture is increased in these women. Although the chances of successful VBAC are lower, gestation beyond 40 weeks is not a contraindication for TOLAC.

TWIN GESTATION

Women with twin gestations who attempt VBAC have similar outcomes to women with singleton gestations. Therefore, TOLAC can be considered in women who have had one previous cesarean delivery with a low transverse incision and who have no contraindications for twin vaginal delivery.

Labor Management

Several studies have noted an increased risk of uterine rupture after labor induction in women attempting TOLAC. Although labor can be induced for maternal or fetal indications in women attempting TOLAC, physicians should counsel the patient that it increases risk of uterine rupture and decreases the possibility of successful VBAC.

Studies of the effects of prostaglandins on uterine rupture in women who have had a previous cesarean delivery have had inconsistent results. One large study found an increased risk of uterine rupture, whereas a second study found no increased risk, and a third found no increased risk when prostaglandins were used alone (with no subsequent oxytocin [Pitocin]). Studies of specific prostaglandins are limited, but generally indicate that the risk of uterine rupture may vary among agents. Evidence from small studies shows that the use of misoprostol (Cytotec) increases the risk of uterine rupture in women who have had previous cesarean deliveries. Therefore, this agent should not be used for third trimester cervical ripening or labor induction in women who have had a previous cesarean delivery or major uterine surgery.

Limited data suggest that external cephalic version for breech presentation is not contraindicated in women with prior uterine incisions if the risk of adverse maternal and neonatal outcomes is low. The chances of successful external version are similar in women with and without a previous cesarean delivery.

Epidural analgesia may be used during TOLAC, and adequate pain relief may encourage more women to

attempt TOLAC. Effective regional analgesia should not be expected to mask signs of uterine rupture.

EDITOR'S NOTE: In early 2010, the National Institutes of Health (NIH) held a consensus conference focusing on short- and long-term maternal and neonatal outcomes of VBAC versus elective repeat cesarean delivery.[1] Several speakers emphasized that the overall risk of perinatal morbidity and mortality associated with TOLAC is similar to that of any nulliparous woman in labor.[2] A recent systematic review conducted for the NIH found that VBAC is a reasonable option in most women, and that adverse outcomes are rare.[3]

However, women who wish to attempt VBAC face several obstacles in gaining access to physicians and facilities that offer TOLAC. Many hospitals no longer allow VBAC because they are not able to provide immediate access to surgeons and anesthesiologists, and some insurance carriers prohibit physicians from performing the procedure. The NIH conference called on ACOG and the American Society of Anesthesiologists to reconsider the "immediate availability" stipulation, and for hospitals, maternity care providers, health care and professional liability insurers, consumers, and policymakers to collaborate on developing integrated services that could mitigate or eliminate current barriers to TOLAC.[1]—C.A.

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3. Guise JM, Denman MA, Emeis C, et al. Vaginal birth after cesarean: new insights on maternal and neonatal outcomes. *Obstet Gynecol.* 2010;115(6):1267-1278. ■

Answers to This Issue's CME Quiz

Q1. A	**Q6.** A, B, C, D	**Q11.** B, D
Q2. D	**Q7.** A	**Q12.** C, D
Q3. C	**Q8.** A, B, D	**Q13.** A, D
Q4. B	**Q9.** B	**Q14.** D
Q5. C	**Q10.** C	

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