Twin Vaginal Delivery After A Previous Cesarean Delivery For Twins

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Twin pregnancies are at high risk for infant morbidity and mortality and are associated with a fourfold to tenfold greater perinatal mortality rate compared with singleton pregnancies.[1] Because twin pregnancies are frequently associated with premature labor and malpresentation, many twins are delivered by Cesarean section, either for both or for the second twin. Fleming, et al.[2] found in a 2-year study of 117 women pregnant with twins a 52 percent Cesarean section rate even for those women who were delivered at term.

A twin pregnancy in a woman who has had a previous Cesarean section presents a clinical dilemma, and there is little published information to assist a physician when choosing between routine repeat Cesarean section and a trial of labor. Many studies assessing the risk of singleton vaginal birth after Cesarean section delivery have shown that vaginal birth is a safe alternative to routine repeat Cesarean section.[3-6] Most large series have excluded women with twin or multiple gestations from participating in a trial of labor. Experience with twins after a Cesarean section delivery has been described in brief reports, with 22 out of 28 women with twin pregnancies who were offered a trial of labor successfully giving birth vaginally after undergoing a previous Cesarean section.[7,8] This case report describes a rare patient who required a Cesarean section for a twin pregnancy and then successfully gave birth to a subsequent set of twins vaginally.

Case Report

A 32-year-old gravida 1, para 1, woman with a history of infertility came to the Family Practice Clinic for her annual examination. Four years before this visit she had received ovarian stimulation with injectable menotropins (human menopausal gonadotropin) to become pregnant with her first and only pregnancy. That pregnancy resulted in twins, which were delivered by Cesarean section at 34 weeks because of premature rupture of membranes and malpresentation. No abnormalities were found during an examination for her recurrent infertility, and her menstrual history and basal body temperature charts were all consistent with anovulation. After an obstetric consultation, two cycles of clomiphene citrate were administered, but she failed to become pregnant, so she was referred to a regional center for repeat stimulation with menotropins.

She successfully conceived, and at approximately 8 weeks' gestation, she had sonographic confirmation of pregnancy, which demonstrated two gestational sacs consistent with her dates. Findings on a base-line physical examination and results of laboratory analysis were normal, and she was seen biweekly. She was referred for an initial high-risk obstetric consultation at 16 weeks and again at 32 weeks. At first the patient was advised to undergo a repeat Cesarean section based on her history, but later vaginal birth was considered. Regional experts were consulted, and the literature was surveyed. No contraindication for vaginal delivery of twins after previous Cesarean section could be found. The patient was counseled regarding the risks and benefits of vaginal birth versus repeat Cesarean section, and she agreed to a trial of labor.

She was seen weekly in the Family Practice Clinic after 28 weeks' gestation and received monthly sonographic evaluations to ensure adequate and concordant fetal growth, as well as weekly nonstress tests after 34 weeks to assess fetal well-being. At 39 weeks she was brought into the hospital with both twins in vertex presentation, her membranes were artificially ruptured, and she proceeded into active labor without additional stimulation. Both infants were monitored intrapartum, one by fetal scalp electrode and the

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other externally. She gave birth to the first twin, a male, spontaneously over a midline episiotomy under pudendal anesthesia 5 hours after rupture of the membranes. His Apgar scores were 9 and 9 at 1 and 5 minutes, respectively, and his birth weight was 7 pounds, 3 ounces. The position of the second twin was palpated vaginally and found to be vertex with a hand in front of the presenting part. Membranes were ruptured, and a fetal scalp electrode was applied. A heart rate of 60 to 80 beats per minute was noted, and the presenting hand was reduced manually behind the head as the mother pushed and fundal pressure was applied. The second twin was then rapidly delivered spontaneously 9 minutes after the first with Apgar scores of 7 and 9 at 1 and 5 minutes, respectively. This infant was female with a birth weight of 6 pounds, 11 ounces. The placenta was delivered spontaneously and was submitted for pathologic evaluation. It was determined to be diamnionic-dichorionic. An internal examination of the patient found no defects in the previous Cesarean section incision. The mother and both infants recovered uneventfully and had a normal postpartum and nursery course, leaving the hospital on the second postpartum day.

Discussion

This case demonstrates a successful twin vaginal birth in a woman who had had a previous Cesarean section for twins. Her first pregnancy was complicated by premature rupture of membranes. This common complication in twins leads to a 33.3 percent delivery rate before 34 weeks.[9] Malpresentation, occurring with one or both infants at the time of labor in 60 percent of twin births, also affected her first pregnancy.[10] Her second twin pregnancy was uncomplicated, allowing an opportunity for a trial of labor and subsequent successful vaginal delivery.

Vaginal birth after Cesarean section is now considered a safe alternative to repeat Cesarean section. In a 1991 review of 11,417 trials of labor in 31 studies, Rosen, et al.[11] concluded that vaginal birth after Cesarean appears to be a safe component of obstetric care. Flamm, et al.[6] reported a 75 percent success rate in 5733 women offered a trial of labor during a 5-year study; there were no maternal deaths, and there was no significant difference in perinatal mortality. Both of these large series excluded multiple-gestation pregnancies after a previous Cesarean section. In 1988 the American College of Obstetrics and Gynecology (ACOG) re-issued guidelines for vaginal delivery after a previous Cesarean birth.[12] In these guidelines, no specific recommendation was made for the multiple-gestation pregnancy, and the decision with twins was to be guided on an individual basis.

Since the guidelines were published, several reports have documented successful vaginal birth after Cesarean deliveries in twins.[7,8] Strong, et al.[7] reported offering a trial of labor to 25 of 56 women with a twin pregnancy after a Cesarean section and had successful vaginal deliveries of both infants in 18 (72 percent) of the 25 cases. Brady and Reed[8] reported four successful vaginal deliveries of twins after previous Cesarean. These few numbers are not sufficient to conclude safety or to change the ACOG guidelines, however.

The difficulty of determining safety is hampered by the few twin pregnancies likely to meet the criteria for a trial of labor after a Cesarean section. Twins constitute only 1 percent or less of pregnancies, and women having had previous Cesarean sections make up approximately 10 to 20 percent of women in labor.[13] In the Fleming, et al.[2] study of twin pregnancies at term, the Cesarean section rate of 52 percent resulted from fetal malpresentation, failure to progress, or the patient's lack of desire for vaginal birth. All 13 of the women with twin pregnancies in their study who had had a previous Cesarean section underwent repeat operative delivery. In the series of 56 twin deliveries reported by Strong, et al.,[7] 14 of the 31 women who had repeat Cesarean sections did so for elective reasons. These studies reflect the controversy surrounding the management of twin births after an earlier Cesarean section. Several studies have addressed patient factors in the choice of a trial of labor, as well as physician and hospital characteristics that favor vaginal births after Cesarean, and found that patient and nonclinical factors frequently result in electing Cesarean section delivery.[14] Thus, the infrequent occurrence of twins, the high Cesarean section delivery rates for twins even without a previous Cesarean section, the frequent occurrence of prematurity, and the maternal and physician factors affecting the choice for a trial of labor for twins when the mother has had a previous Cesarean section, all combine to lead to few cases for analysis. Nevertheless, data to date still suggest that the

success rate of 75 percent in these small series is comparable with the singleton vaginal birth after Cesarean section rates.[7,8]

The unique aspect of this case was that of a repeat twin gestation. Dizygotic twins occur in approximately 1 percent of all pregnancies, and the likelihood of a woman who has had twins having dizygotic twins again is about 4 percent for the subsequent pregnancy.[15] The occurrence of twins worldwide appears to be decreasing, probably as a result of decreased family size, because twins are much more likely to be born to women of greater age and parity.[16] Factors associated with increased twinning include positive family histories of dizygous twins, enhanced nutritional status, older age, greater parity, and the use of fertility agents.[9] In this case menopausal gonadotropin and human chorionic gonadotropin were used for both pregnancies, leading to a repeat twin gestation. This therapy is associated with multiple gestation rates of 20 to 25 percent, the majority of which are twins.[16]

The other consideration in this case was the management and prevention of complications in the twin gestation. Although twins constitute only 1 percent of all births, they account for 10 to 12 percent of perinatal mortality.[9] Prematurity and its complications are the major contributors, with 74 percent of perinatal mortality in twins accounted for by infants with birth weights less than 1500 g.[13] Forty-seven percent of twins exhibit some form of neonatal morbidity, mostly related to prematurity and associated complications.[13]

Optimal obstetric management of the multiple-gestation patient begins with early diagnosis. The management of the twin pregnancy after a previous Cesarean section is the same as that for any twin pregnancy and includes accurate pregnancy dating both clinically and by sonography, periodic risk assessments, daily bedrest at home, adequate nutritional support, and serial sonographic examinations for fetal growth.[9,17] Regular testing of fetal well-being after 34 weeks is a routine part of the care of twin gestation and usually is done by nonstress testing. Frequent evaluation of the mother's status is also critical as she approaches term, because of common late rises in blood pressure and a fivefold risk of proteinuric preeclampsia with twin gestations.[9]

Intrapartum management of a twin gestation after a previous Cesarean section involves the same guidelines that apply to any vaginal birth after Cesarean section. Mothers should be assessed for potential complications including anemia, hypertension, and polyhydramnios. Careful monitoring of both infants with dual systems is critical, including internal monitoring for the first twin and external monitoring for the second twin. Fetal presentation and size of both twins should be assessed by sonographic examination. The chosen route of delivery will depend on these assessments, with most agreeing that a vertex-vertex presentation and estimated fetal weights of greater than 1800 g as favorable for vaginal delivery.[18] Cephalic presentation of the first twin occurs approximately 70 percent of the time and usually results in spontaneous vaginal delivery without difficulty, whereas breech presentation with the first twin could necessitate Cesarean section to avoid problems of prolapsed cord, inadequate dilatation of the cervix by small body parts, or a large after-coming head.[17] A safe vaginal delivery for the second twin is determined by position and estimated size, with infants greater than 1500 g having the most favorable outcomes with both vertex and breech presentation.[17] At the time of delivery, two teams skilled in neonatal resuscitation must be available (one for each infant).

Conclusion

With the increasing evidence that vaginal delivery after Cesarean section is safe, more liberal guidelines have been developed to encourage the trial of labor after a previous Cesarean delivery. There are no definitive guidelines for the management of a twin pregnancy in a woman who has had a previous Cesarean section. This case study describes the successful vaginal delivery of twins in a woman who had had a previous twin gestation and Cesarean section delivery and adds to the data of Strong and Brady of successful vaginal birth after Cesarean section for twins.

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