

Delayed Interval Delivery in a Triplet Pregnancy

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Due to a surge in the availability of assisted reproductive techniques (ART), the incidence of multiple pregnancies is increasing. Preterm labor is a major complication in such pregnancies. Preterm delivery of the first fetus is often followed by delivery of the remaining fetuses. However, conservative management and delayed interval delivery in the remaining fetuses might allow for fetal lung maturity and would reduce perinatal morbidities. A 32-year-old female had a quadruplet pregnancy after receiving ART. Fetal reduction to triplet pregnancy was performed at 11 weeks of gestation. The remaining triplet pregnancy was stable until 29 weeks of gestation, when the first triplet was delivered after spontaneous rupture of membranes. Under intensive monitoring, the remaining 2 fetuses were delivered by cesarean section at 31 weeks of gestation. Only the first fetus had retinopathy after discharge. In conclusion, delayed interval delivery of the remaining fetuses should be attempted after preterm delivery of the first fetus. [J Chin Med Assoc 2006;69(2):92-94]

Key Words: delayed interval delivery, triplet

Introduction

The incidence of multiple pregnancies has increased dramatically in recent years due to a combination of increasing maternal age and the frequent application of assisted reproductive techniques (ART).^{1,2} Premature birth is one of the most frequent and serious complications of multiple pregnancies. Despite great improvement in the survival of very premature fetuses, they still have a significantly higher risk of mortality and long-term morbidity.

In recent years, various studies have reported successful attempts at delayed interval deliveries in multiple pregnancies.³⁻⁵ They further suggested that delayed interval delivery might reduce perinatal mortality. However, the optimal management is not known. Cerclage, tocolysis, hospitalization, and antibiotic treatment have all been described.^{6,7} Here, we report a case of successful delayed interval delivery of a triplet pregnancy.

Case Report

A 32-year-old female with a history of primary infertility due to endometriosis underwent oocyte retrieval and tubal embryo transfer resulting in a quadruplet pregnancy. Fetal reduction using intracardiac KCl injection (< 2 mL of 2 mEq/mL KCl) of 1 fetus was performed successfully during the second trimester. Unfortunately, spontaneous rupture of membranes occurred at 29 weeks of gestation. The patient was then admitted for tocolytic and prophylactic antibiotic treatment. Four days later, a male fetus was delivered, weighing 1,235 g and with Apgar scores of 7 and 9 at 1 and 5 minutes, respectively. No evidence of placenta abruptio, vaginal bleeding, or uterine contraction was noted. Tocolytics, steroids, and antibiotics were continued. Laboratory data, including complete blood count and C-reactive protein, were in the normal range. At 31 weeks of gestation, the patient was in preterm labor. Due to a breech presentation of the

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presenting fetus, emergency cesarean section was performed. Two male fetuses were delivered, weighing 1,440 and 1,285 g and with Apgar scores of 7 and 9 at 1 and 5 minutes, respectively. They were taken to the neonatal intensive care unit for observation. After follow-up visits for 2 years, the first infant had retinopathy while the other 2 infants were healthy without any deficits.

Discussion

Preterm premature rupture of membranes and preterm labor in multiple gestations are most often associated with infection resulting in expulsion of the uterine contents. Occasionally, a patient with multiple fetuses will spontaneously cease to contract after delivery of the leading fetus. Once infection has been ruled out as the etiology of preterm delivery, steps can be taken to prolong the remaining fetuses in utero. Prolonging pregnancy reduces the morbidity of premature birth and reduces the costs associated with intensive neonatal care. There is no consensus regarding the use of antibiotics, tocolysis, or cerclage to accomplish this goal, nor is this question amenable to prospective study.

In a series of delayed interval deliveries of triplet pregnancies, an overall survival rate of 42.8% was reported.⁸ Abboud et al⁶ reported 14 triplet pregnancies with a survival rate of 59.5% using delayed interval delivery with at least 1 surviving infant. Cardwell et al⁹ reported the delivery of second and third triplets on the same day in 13 cases following a delay after delivery of the first fetus. The first triplet often died; however, even if it survived, it often experienced major morbidity.¹⁰ In our case, the first triplet just had retinopathy. A study by Zhang et al² concluded that delayed delivery of the remaining fetus(es) before 30 weeks of gestation for 2 or more days was associated with improved infant survival. Another large study concluded that, when the first twin was delivered at 22–23 weeks, reduced perinatal and infant mortality of the second twin was found even if the delayed delivery interval was less than 3 weeks.¹

There is no consensus on practice in extending the interval between delivery of multiple fetuses presenting preterm. Such practice includes the use of antibiotics, tocolysis, and cerclage. No method has, thus far, shown greater efficacy over any other. Biased reporting contributes to the inability to determine the optimal method.

Use of antibiotic prophylaxis in cases without signs of infection and with intact membranes is controversial. Continuous use of antibiotic prophylaxis in all interval

delivery cases, as well as their use only in the presence of bacterial colonization of the amniotic fluid, have been reported.⁸ Arias¹¹ also suggested a 1-week antibiotic treatment by intravenous infusion for the first 3 days following premature rupture of the membranes.

Tocolysis has been used after delivery of the first twin, with different combinations, including β -2 agonists, calcium channel blockers, anti-inflammatory drugs, MgSO₄, and progesterone. Tocolysis can be a systemic preventive measure except with renewed uterine contractions.⁸

There is no consensus for performing cerclage to achieve delayed interval delivery. The invasive nature of cerclage and the increased risk of chorioamnionitis due to the closure of a potentially infected amniotic sac is certainly a great concern. However, if cerclage is to be performed, Platt and Rosa⁷ and Fayad et al⁸ have reported that the interval between cerclage and delivery was not significant in the 4 groups of patients receiving cerclage alone, antibiotics alone, tocolysis and antibiotics, or a combination of all 3 methods. Once such a procedure had been done, strict bed rest in the hospital was suggested.⁸

Treatment of multiple gestations presenting with preterm rupture of membranes or preterm labor is primarily expectant. Infection, abruption, fetal demise, and fetal anomaly must be recognized and treated appropriately. If delivery of the leading fetus occurs, therapy should be instituted to delay the delivery of subsequent fetuses. Although there is no conclusive evidence supporting the use of antibiotics, cerclage placement, and tocolysis, these data strongly suggest that the combined use of broad-spectrum antibiotics, tocolysis, and cerclage placement will improve the potential outcome of the remaining fetuses.

Maternal morbidity and mortality remain a primary concern. There have been no reported cases of maternal deaths while using delivery delaying techniques. As with preterm premature rupture of membranes, maternal morbidity includes intraamniotic infection and placental abruption. A case of maternal sepsis has been reported.¹² Maternal care and delivery of these preterm infants in a tertiary perinatal center greatly enhances the possibility of a good outcome.¹³

Our case report adds to the evidence that delayed interval delivery is a useful therapeutic option for the management of the remaining fetuses in multifetal pregnancies after the preterm delivery of the presenting fetus. Close clinical and laboratory monitoring are required to search for signs of chorioamnionitis that would necessitate early delivery of the presenting fetus.

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