



# Successful delayed-interval delivery in monochorionic diamniotic twin pregnancy: A case report

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## ABSTRACT

Delayed-interval delivery in twin pregnancy is a rare occurrence. It is sometimes performed in twin pregnancies when the first twin is born at the limit of viability, to improve outcome for the second twin. It has been suggested that monochorionicity is a contraindication to delayed-interval delivery in multifetal pregnancy. The literature describes only a dozen cases over the last 20 years and only a handful of these reports specify success.

We describe a case of a successful delayed-interval delivery of monochorionic diamniotic twins following prelabour rupture of membranes at 20 weeks of gestation. The first twin was pre-viable, delivered at 23 weeks and 2 days of gestation, but the second twin was delivered at 24 weeks and 1 day of gestation and survived. Practitioners could consider delayed-interval delivery in monochorionic diamniotic twin pregnancy in a closely monitored environment if the first twin is born peri-viable, to obtain an improved outcome for the remaining fetus.

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## 1. Introduction

Delayed-interval delivery (DID) is sometimes considered in selected twin pregnancies when the first twin is born peri-viable after an insufficient period of gestation. As neonatal morbidity and mortality are often dependent on gestational age at birth, the aim of DID is to improve outcome for the second twin. Monochorionicity is often regarded as a contraindication to DID in twin pregnancy due to the risks to the remaining fetus [1]. Because of the overall rarity of DID in twin pregnancy and as most studies exclude monochorionicity, high-quality data are lacking. We present a case of successful DID of monochorionic diamniotic (MCDA) twins.

## 2. Case Presentation

A 33-year-old woman, gravida 2 para 1, with a MCDA twin pregnancy presented at 20 weeks of gestation with preterm premature rupture of membranes (PPROM). Diagnosis of PPRM was confirmed clinically based on the large amount of amniotic fluid visible in the posterior fornix and by means of a positive AmniSure rupture of membrane test. The amniotic fluid index (AFI) on admission was satisfactory, with the deepest pocket being greater than 4 cm for both twins. There were no signs of threatened preterm labour (TPL) on admission. Antibiotic coverage was started as well as analytic and ultrasound monitoring.

Following extensive multidisciplinary discussion, a collective decision was made not to initiate active resuscitation until 24 weeks of gestation. The patient was discharged from hospital for close outpatient management at 22 weeks of gestation following 2 weeks of admission. The patient was stable on discharge with a closed cervix and unchanged AFI. Fetal monitoring consisted of biophysical assessment at regular intervals; no abnormalities were detected. Maternal monitoring consisted of regular serum inflammatory markers and rotating antibiotics.

The patient was re-admitted at 23 weeks of gestation with TPL. Speculum examination revealed an open cervix with the first twin in breech presentation. At 23 weeks and 2 days of gestation, a 555-g female infant was delivered via spontaneous vaginal breech delivery and no resuscitation was initiated. After delivery of the first twin, the umbilical cord was ligated high in the vagina. The family was counselled regarding the options for the second twin and the family opted for DID. A cervical cerclage was not performed. The patient was given steroids at 23 weeks and 5 days of gestation and she was transferred to a tertiary obstetrics unit.

Due to suspected chorioamnionitis she was induced with an oxytocin infusion at 24 weeks and 1 day of gestation. The patient was given intravenous magnesium sulphate for fetal neuro-protection.

A 698-g female neonate was delivered via vaginal breech delivery with Apgar scores of 3 at 1 min and 5 at 5 min; the umbilical arterial blood pH was not recorded. The neonate received full resuscitation and immediate life-support. The fused placenta was spontaneously delivered.

There were no maternal complications and the neonate was discharged after 3 months and remained well at the time of writing.

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### 3. Discussion

The incidence of twin pregnancy is increasing, partially due to increasing maternal age and medically assisted reproductive techniques. Currently, multiple gestations comprise approximately 4% of all live births. One of the most serious risks of twin pregnancy is preterm delivery (PTD). The incidence of PTD in twin pregnancies is up to 60% and is a major factor in perinatal morbidity and mortality [2].

The causes of PTD are broadly classified into three subtypes: PTD after PPRM; spontaneous onset of labour; and iatrogenic PTD for maternal for fetal indications. In our case, PPRM was associated with PTD. PPRM has been shown to complicate up to 8% of twin pregnancies, of which 15–20% occur before fetal viability [3]. Although the treatment of PPRM in twin pregnancies is similar to that in singleton pregnancies there may be additional challenges, such as the possibility of DID if the first twin is born peri-viable after an insufficient period of gestation. Our patient was admitted with PPRM at 20 weeks of gestation and we undertook close outpatient monitoring from 22 weeks of gestation. However, we would like to specify that this is feasible only in strict selected cases, where maternal-fetal wellbeing can be assured, depending on individual patient characteristics, local health-care infrastructure and multidisciplinary approval.

The success of DID in terms of neonatal outcome is variable, and, due to the rarity of DID in twin pregnancies, there are no large-scale studies and no formal guidelines. The majority of published studies see monochorionicity as a contraindication to DID as the vascular anastomoses in the retained placenta may cause complications for the retained fetus and the risk of chorioamnionitis is thought to be increased [1]. Over the last 20 years, only about a dozen of cases of DID in MCDA twins have been described, and only a handful of these specify a successful neonatal outcome [4–8]. The first case of successful DID in MCDA twins was described by Beinder et al. in 1996, who reported a successful 10-week interval delivery following initial delivery at 24 weeks [4]. Furthermore, two case series published in 2009 and 2015 included 4 and 7 cases of DID in MCDA twins, respectively; however, success was not specified [5,7]. A case series in 2012 reported a successful outcome in one MCDA pregnancy [6]. The most recent case of successful DID was described by Youssef et al. in 2018, who reported successful 19-week interval delivery following initial delivery of the presenting twin at 19 weeks of gestation [8].

We report a unique case of MCDA twins with PPRM at 20 weeks of gestation; the patient delivered a first, pre-viable fetus at 23 + 2 gestation. She had a successful 6-day DID of the second twin, who survived.

Our case suggests that DID in MCDA twins is feasible if the first twin is born peri-viable, to improve outcome for the second twin, in a closely monitored environment.

### Contributors

Tanja Baltus MD and Maria Luisa Martin MBBS were equal and sole contributors.

### Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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### Patient Consent

Written informed consent was obtained from the patient for the publication of this case report.

### Provenance and Peer Review

This case report was peer reviewed.

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