



A Case Report on Monochorionic Diamniotic Twin Gestation with Rh Negative Pregnancy

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Abstract

The terms "monochorionic" and "diamniotic" refer to multiple gestations with just one placental disk (or chorion) and two separate amniotic cavities, respectively. Each fetus in a monochorionic diamniotic twin pregnancy has its own amniotic sac in addition to the common placenta. PPRM is the rupture of membranes before the onset of labor and before 37 weeks of gestation. We present a case of a 33-week-old primigravida female with monochorionic diamniotic twin gestation, Rh negative pregnancy, and PPRM who presented to the labour room with a fully dilated cervix, an emergency lower segment caesarean section was performed with prolonged second stage labour, and twins were delivered.

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INTRODUCTION

The risk of unfavorable pregnancy outcomes is higher in monochorionic twin gestations, whether diamniotic or monoamniotic [1]. In comparison to dichorionic twin pregnancies, monochorionic diamniotic twin pregnancies (MCDA), which make up 20% of all twin gestations, are known to carry a higher risk of mortality and morbidity. Perinatal mortality rates

for monochorionic twins are roughly twice as high as those for dichorionic twins (2.8 versus 1.6%) and four times higher than those for singletons (2.8 against 0.7%) (3). The excessive hazards are thought to be caused by the unusual features of monochorionic placentation. Monochorionic twins circulated through placental vascular anastomoses during pregnancy and shared a single placenta [2]. Monochorionic twins have a higher morbidity and death rate than even triplets without a shared placenta due to these unpredictable and randomly distributed vascular anastomoses that force two twins to compete for the same circulatory pool. The demands of two pregnancies must also be met by this single placenta, which was initially created to nourish one fetus. As a result, the monochorionic placenta is appropriately described as an ineffective, risky, and unpredictable arrangement [3].

Despite extensive monitoring, monochorionic twins without TTTS or IUGR appear to have a higher stillbirth incidence than normal twin pregnancies. This has led to the advice that these pregnancies be delivered at 37 + 0 weeks gestation. When it comes to monochorionic twins, each woman should be treated differently. Vaginal birth is not threatened by monochorionic twin pregnancies. As with all twins, vaginal birth should be attempted only when there are appropriate facilities for continued intrapartum foetal observation and access to an emergency caesarean surgery. The therapy of choice for the great majority of TTTS pregnancies is laser ablation of vascular connections [4].

The twin-twin transfusion syndrome (TTTS) and potential sequelae in one twin following the intrauterine demise (IUD) of the cotwin are the specific complications associated with MCDA twin pregnancies. Additionally, these pregnancies are more likely to have issues like birthweight inconsistency and congenital structural defects. Long-term prognosis include mental retardation, cerebral palsy, vision loss or hearing loss etc. [5]

Preterm premature rupture of the membranes (PPROM), which is more prevalent in twin pregnancies, is a major cause of preterm delivery. Both PTD and preterm premature membrane rupture (PPROM) contribute significantly to newborn morbidity and death in multiple gestations. Compared to 2% to 4% of singletons, PPRM has been reported to complicate twin pregnancies in 7% to 8% of cases. Although the cause of PPRM is still unknown, environmental, fetal, and maternal variables are believed to play a role in its development (5). About 30% of pregnancies treated with minimally invasive surgery experience preterm prelabor rupture of membranes (PPROM), which raises the risk of prematurity and its related problems [6].

Decidual haemorrhage (placental abruption) and intra-amniotic infection are the two primary risk factors for spontaneous PPRM. In fact, 4-12% of PPRM-complicated pregnancies have placental abruption, which happens more commonly in PPRM-complicated pregnancies before 28 weeks of gestation. Although these are unusual causes of PPRM, invasive uterine procedures (such as amniocentesis, cordocentesis, chorionic villus sampling, fetoscopy, and cervical cerclage)

may damage the membranes and cause them to leak [7].

Selective intrauterine growth restriction (sIUGR), twin anaemia polycythemia sequence (TAPS) or twin-to-twin transfusion syndrome (TTTS) are conditions that can subsequently emerge in monochorionic diamniotic (MCDA) twin pregnancies with significant discordant amniotic fluid volumes. It is essential to distinguish and diagnose these illnesses quickly.

It is very uncommon to get twins who are Rh-immunized. Twin pregnancies carry several perinatal concerns. The potential risks of such a compromised pregnancy increase with rhesus isoimmunization.

Prophylactic anti-D immunoglobulin (IgG) injection provides for better monitoring of the risk of alloimmunization and better avoidance of its anticipated repercussions (hemolytic illness of the foetus [HDF] and stillbirth caused by the passage of maternal immunoglobulins via the placenta). This is made feasible by determining the foetal Rh blood type early in pregnancy in Rh-negative mothers. When the foetal Rh type is positive or unknown, the regular injection of anti-D IgG at 28 weeks of gestation for all Rh-negative non-sensitized women is presently regarded as the best practice for avoiding alloimmunization [8].

CASE REPORT

A 24-year-old primigravida with 33 weeks of gestational age was diagnosed as monochorionic diamniotic twin gestation with Rh-negative pregnancy and PPRM. She was referred from a private hospital to our institution due to a lack of NICU facilities. The patient presented to the hospital with complaints of abdominal pain and vaginal leaking. The patient's ultrasonography suggests a gestational age of 32 weeks 6 days and 31 weeks 3 days period for twin A and twin B respectively. Twin B was found to have AC and FL lag by 2 weeks due to oligohydramnios.

The patient's blood group was O negative and her husband was Rh positive. No blood transfusion was done for the patient.

Indirect coombs test was carried out for the patient to detect circulating antibodies against red blood cells. ICT was found to be negative.

Doppler studies showed normal foetoplacental and uteroplacental microvascular resistance for both twin A and twin B.

The patient was not getting adequate uterine contractions in spite of increased oxytocin, there was no descent of fetal head since full dilation - uterine inertia hence an emergency lower segment caesarean section was performed with prolonged second stage labor. Twin A female weighed 2.3 kg and twin B was about 2kg. Both the babies didn't cry immediately after birth and were kept in NICU since the time of birth. Daily serum bilirubin and complete blood count were monitored. Twin A was kept under double surface phototherapy and twin B was on single surface phototherapy.

Both babies were presented with perinatal asphyxia and were on mechanical ventilation. Initially babies were given with injection of ampicillin, injection gentamycin, injection calcium gluconate and IVF 10% dextrose followed by injection meropenem, injection vancomycin and injection calcium citrate. Episodes of seizure were observed in twin A hence adjusted glucose and electrolyte levels. Twin A was hypotensive and was given dopamine and dobutamine 10mcg/kg/min respectively for 36 hours. Twin B had sepsis and was given with injection ampicillin, injection gentamycin, after obtaining a blood culture report the drugs were upgraded to an injection piptaz and injection amikacin.

DISCUSSION

Monoamniotic monochorionic twinning with Rh-negative pregnancy is an uncommon kind of monozygotic twinning that accounts for just 1% of all monozygotic twins. One yolk sac and one amnion, the products of an 8-day ovum division, serve as the only distinguishing characteristics of these creatures. There could be one embryo or two(conjoined twins). An increase in perinatal loss (between 10 and 15 percent in a recent series of cases that were identified during pregnancy) distinguishes this type of twinning. These high neonatal mortality rates are mostly brought about by congenital abnormalities, umbilical cord entanglement/accidents, preterm birth, and intrauterine growth restriction. Clinicians and expectant mothers should be informed that monochorionic twin pregnancies

have greater foetal death rates than dichorionic twin pregnancies, primarily due to loss in the second trimester, and may also be more likely to have neurodevelopmental morbidity as a result. This needs to be covered in the parent counselling.

There are various diagnostic problems, such as oligohydramnios in one twin with a strongly adherent membrane, which necessitate a precise diagnosis for appropriate pregnancy treatment. If the foetus is Rhesus positive, a Rhesus negative woman may develop antibodies while she is pregnant. These antibodies may cause harm to newborns who are Rh-positive [9].

Samples should be obtained from all pregnant women early in the pregnancy, ideally during the booking visit at 10- 16 weeks gestation, for ABO and D type testing, as well as screening for the presence of red cell alloantibodies. Patients who test positive for antibodies should be subjected to further testing to determine the significance and specificity of the antibodies. All pregnant women, whether D positive or D negative, should have a repeat blood sample collected at 28 weeks gestation to check their ABO and D group once again and to test for the presence of red cell alloantibodies. Women, regardless of Rh status, are likely to acquire antibodies other than anti-D throughout late pregnancy. If red cell antibodies are discovered, they should be submitted to further testing to determine their origin, degree of concentration, and antibody specificity [10].

Monochorionic diamniotic twins should be delivered vaginally unless there are other particular clinical reasons to have a caesarean section. Unless there is a need to deliver earlier, women with monochorionic twins should have their delivery options addressed and offered to start at 36 weeks with the administration of antenatal steroids(1). We are reporting the situation of a 24-year-old primigravida who lives in a rural area and came for delivery of monochorionic diamniotic twin gestation with Rh negative pregnancy and PPRM. Regular follow-ups and routine investigations failed, there were no routine follow-ups. Because the mother was Rh-negative, an indirect Coombs test was performed, and additional blood tests came out negative. The foetal direct Coombs test was also negative. To avoid future complications, the

patient was given 300mcg of anti-D prophylaxis intramuscularly.

CONCLUSION

Early detection, foetal abnormality screening, twin-twin transfusion syndrome monitoring, post-viability monitoring decisions, and delivery time and route cannot be emphasised. Individualised PPROM therapy for twins should consider the patient's informed consent as well as maternal, foetal, and obstetric factors. To avoid mortality and morbidity in such high-risk pregnancies, proper screening, as well as frequent prenatal check-ups and follow-up, should be performed. This is especially important in rural areas where a lack of follow-ups and knowledge results in greater mortality and morbidity rates.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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