A Monochorionic-like presentation in a diagnosed
Dicchorionic Twin Pregnancy

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Introduction

A monochorionic twin pregnancy is one in which both babies are dependent on a single, shared placenta. Around one-third of twin pregnancies in the UK have monochorionic placentas. Monochorionic placentation can also occur in higher-order multiples. There has been a recent increase in all types of multiple pregnancies with the increasing use of assisted reproductive techniques. Use of Monochorionic (MC) and dichorionic (DC) twin pregnancies share increased risks of preterm birth, fetal growth restriction, pre-eclampsia, maternal pregnancy symptoms and postpartum haemorrhage. The particular challenges of monochorionic pregnancies arise from the vascular placental anastomoses that are almost universal and include the unusual physiological adaptations of both twins: twin–twin transfusion syndrome (TTTS), the consequences to the co-twin of fetal death and the management of discordant malformations. In addition, monochorionic, monoamniotic pregnancies (1% of twin pregnancies) carry a very high risk of cord entanglement. (1)

Case

We describe a high-risk case of MCDA pregnancy who was managed and monitored very closely at our hospital. She was known to have a high BMI and had a previous caesarean section in the past. A diagnosis of a dichorionic diamniotic presentation was made at 12 +4 weeks. At the twenty weeks anomaly scan the both placentas were visualized at an anterior high placement and were found to be normal. However the thirty week scan indicated a growth restriction with normal Doppplers, fluid and fetal movements. At around this time (DAMES) the mother began to exhibit signs of pre-eclampsia and was treated with Labetalol and salbutamol by the Fetal Medicine team for follow-up. In view of developing pre-clampsia and growth restriction the decision was made for early delivery via elective caesarean 36 weeks. The smaller twin continued to grow slowly and was classified as below the fifth percentile.

Two days before delivery the babies were seen on ultrasound by a consultant Fetal Medicine doctor and showed normal fetal movement and Doppplers. The elective caesarean section was performed at 36 weeks gestation. Two hours before delivery the records indicate that both fetal heartbeats were heard by CTG. However thirty minutes before delivery the theatre staff and midwives were having trouble finding fetal heart sounds which at the time was attributed to the mother’s very high BMI. The surgeons proceeded with the procedure. The larger baby was first and was by all accounts healthy and normal. Twin number two was delivered shortly after in poor condition without signs of life and with maceration of skin on the face, chest and scrotum. Resuscitation efforts began but the team was unable to revive the baby. The paediatric consultant present felt that the child had been dead for sometime prior to delivery. Afterwards the family decided to forgo the fetal autopsy but a CVS indicated no chromosomal abnormalities. The surviving twin is currently healthy.

Discussion

Since we were unable to investigate the cause of death further many questions remain, especially if it was preventable. The mother’s significant comorbidities namely pre-clampsia and obesity might have played a role increasing the stress on the smaller twin and making monitoring more difficult before the delivery. However although pre-eclampsia is more prevalent in twin pregnancies it does not necessarily lead to significant growth retardation or discordant fetal growth and poor outcome for the twins. (2) The actual time of death is unknown but the level of desquamation present at birth is consistent with a timeframe of six to twelve hours. (3) Growth restriction is a leading cause of sudden infant death and could have manifested itself as a factor resulting in a decreased stress response in the smaller twin as the pregnancy progressed. (4)

Monochorionic pregnancies have an associated increased unexpected death rate another possibility is a potential misdiagnosis of chronicity, which has been seen in the literature (5) and might support such a sudden and tragic outcome. Disproportional placenta size was not investigated but may have also been a cause of growth restriction in the smaller twin. Despite excellent management and maternal care there is no current data and late-term weekly ultrasound scans an underlying placental pathology could have contributed.

Monochorionic twin pregnancies have an inherent risk associated with increased fetal mortality rates over normal pregnancies. Retrospective studies have shown that when discounting other pathologies like twin-twin transfusion syndrome (TTTS), growth restriction, structural abnormalities, or twin reversed arterial perfusion sequence, monochorionic diamicot pregnancies had a 4.6% rate of unexpected fetal demise despite monitoring that was adequate according guidelines. Possible causes of death were acute onset late TTTS. In this study population the prospective risk of antepartum stillbirth after 32 weeks was one in twenty three. (6, 7) High-risk MCDA pregnancies can be identified with prompt identification of placental vasculature at 7 weeks and monochorionicity between the tenth and thirteenth weeks, then subsequent ultrasound scans at two to three weeks. Screening for TTTS, fetal anemia, discordant fetal growth restriction and placental anastomosis can identify higher risk pregnancies and change the clinical decision-making. (6) Early detection of severe TTTS warrants discussion of fetoscopic laser ablation or amniocentesis. Current UK guidelines suggest delivery at 36-37 weeks and to have a specific discussion about birth plans with the patient at 32-34weeks.(8,11)

Conclusion

Clinicians and women should be aware that MC twin pregnancies have higher foetal loss rates than DC twin pregnancies, mainly due to second trimester loss and, overall, may have a propensity to excess neurodevelopmental morbidity. (1) A diagnosis of two separate placental masses in twin pregnancy does not necessarily prove a dichorionic presentation. (8) Several studies suggested that the main risk of foetal death in MC pregnancies is before 24 weeks of gestation and after this time, the rate of perinatal loss is only slightly higher in MC than DC pregnancies. Recent UK guidelines indicate that even when intensively monitored, apparently healthy MCDA pregnancies remain at a substantial risk of perinatal mortality after 24 weeks of gestation. (3.3% of foetuses). Optimal ultrasound scanning regimen is poorly defined in terms of evidence base and requires further research (6)

References