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Case Report

A rare case report of cord entanglement in a post-dated monochorionic monoamniotic twins

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ABSTRACT

Monochorionic Monoamniotic (MCMA) twin gestations have been associated perinatal mortality rates as high as 28 to 47%. Umbilical cord entanglements and knots, twin-to-twin transfusion syndrome, congenital anomalies, prematurity and intertwin locking during labour is responsible for their high perinatal morbidity and mortality. We report here a case of Cord entanglement in a post-dated MCMA twin pregnancy without any complications.

Keywords: Monochorionic, Monoamniotic, Cord entanglements

INTRODUCTION

Monoamniotic twins have a prevalence of less than 5% of monozygotic twin gestations and 1% of all twin pregnancies.¹ They occur as a result of ovum division beyond eight days after fertilization and are characterized by a single amnion and single yolk sac. There may be two or one (conjoined twins) embryos present.

They are at increased risk of preterm delivery and acute fetal death. Cord entanglement, malformations, twin-to-twin transfusion syndrome are responsible for their high perinatal morbidity and mortality.² Literature presents perinatal mortality rates of 28% and 47% based mostly on case reports and small series. These high rates are suggested to be specifically due to cord accidents secondary to the entwining of the two umbilical cords and/or knotting and thus leading to occlusion.³ Early diagnosis is essential if attempts to reduce the complication rates are to be made. The diagnosis is usually made by ultrasound, with an inability to distinguish a dividing membrane between the foetuses. Colour flow Doppler is useful in the identification of

umbilical cord entanglement in monoamniotic twin pregnancies and may provide a method of monitoring fetuses for the evidence of cord compression.

In this study, we present a case of post-dated monoamniotic twin pregnancy with cord entanglement.

CASE REPORT

A 20-year-old primigravida came to our hospital as an unbooked case at 40 weeks 4days gestation with complaints of pain abdomen in latent labour. On examination, she had no signs of pallor, icterus, cyanosis, clubbing, lymphadenopathy or edema. She was normotensive.

Her sonography report at 30 weeks showed twin gestations in single amniotic cavity (amniotic membrane could not be visualized) indicating a monochorionic monoamniotic twin gestation, without any congenital anomalies.

A repeat scan was done which showed both twins in cephalic presentation in a single amniotic cavity, with >2 kg of estimated fetal weight with good cardiac activity and adequate liquor. Keeping in mind the risks and adverse events, a decision for caesarean section was taken.



Figure 1: Cord entanglement.

Intra-operatively, the single amniotic sac was ruptured and clear liquor drained. Both babies were extracted by Vertex and both cried immediately after birth, weighing 2.2 and 2.3kgs. The cords were entangled around each other without any evidence of compression.



Figure 1: Babies post-caesarean.

DISCUSSION

Monochorionic monoamniotic twin gestations derive from a single blastocyst in which the zygotic division takes place for more than 8 days after fertilization.⁴ In these pregnancies, the fetuses are at high risk because of shared vascular areas as well as cord accidents and birth trauma. Vascular anastomoses generally occur between fetuses and monochorionic placentas and can cause twin-to-twin transfusion or twin reversed arterial perfusion, thus developing the risk of intrauterine fetal demise or prematurity as a cause of preterm delivery. Cord entanglements are the main risk of these pregnancies, developing in very early gestational ages and a crucial problem in later weeks.⁵

Twin-to-twin transfusion syndrome may also occur in these pregnancies, due to the unbalanced unidirectional flow along the arteriovenous anastomoses, causing anemia, growth restriction and Oligohydramnios.⁶ Fetal survival rate is less than 10% if conservative approach is sought.

Twin reversed arterial perfusion (TRAP) sequence can also occur, in which the normal (pump) twin donates blood to the other twin with absent cardiac structure (acardiac). The incidence is 1 in 350000 pregnancies and 1% of Monochorionic pregnancies. This results in the reversal of flow in the umbilical cord vessel of the recipient twin, leading to better development of the pelvis and lower extremities and atrophy of heart and non-development of head and upper limbs.⁶

Clinical management of these pregnancies remains to be clarified. Limited data are available on the timing and mode of delivery for twins. General thoughts have been focused upon the termination of pregnancy at 32-34 weeks or after lung maturation for monoamniotic twins.⁷

CONCLUSION

Monoamniotic monochorionic twin pregnancies have an increased risk of cord entanglement, twin-to-twin transfusion syndrome, prematurity and congenital malformations. The research based on determinations of chorionicity and amnionicity via first trimester sonography would be helpful for planning fetal surveillance and neonatal follow-up.

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