

## Careful Diagnosis and Management of Monochorionic Monoamniotic twins

Dr. Abinaya Vijayan<sup>1</sup>, Dr. Saraswathi<sup>2</sup>

<sup>1,2</sup> Department of Obstetrics & Gynaecology, Sree Balaji Medical College and Hospital, Chromepet, Chennai, India

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**Abstract:** Monochorionicmonoamniotic twins are a subtype in monozygotic twin pregnancy. These twins are rare, occurring in approximately 1 in 35,000 to 1 in 60,000 pregnancies. These twins are associated with increased morbidity and mortality. Hence, with early diagnosis of chorionicity and amnionicity and its associated complications, the rate of fetal loss can be reduced. Intensified antenatal monitoring is required from 1<sup>st</sup> trimester onwards. We report a case of second gravida with previous normal vaginal delivery with monochorionicmonoamniotic twin pregnancy who was diagnosed at 11 weeks gestation by ultrasound. From then she was monitored extensively and was allowed for spontaneous onset of labour at 37 weeks. She delivered two alive babies with good APGAR score. Thus, with careful monitoring throughout pregnancy, good prognosis and outcome can be achieved.

**Keywords:** Amnionicity, chorionicity, monochorionicmonoamniotic twins and ultrasound.

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### I. Introduction

Monochorionicmonoamniotic twins (MoMo) occur in one of 10,000 pregnancies. Cord entanglement, malformations, twin-to-twin transfusion syndrome (TTS) and prematurity are responsible for their high perinatal morbidity and mortality [1]. Recent reviews of literature indicate significant reduction in perinatal mortality. Factors that may explain these changes are antenatal diagnosis of twinning, recognition of monochorionicmonoamnioticplacentation, close fetal surveillance, cesarean delivery and advances in neonatal care. Here, we report a case of Monochorionicmonoamniotic twins without any morbidity and mortality by means of careful monitoring throughout pregnancy.

### II. Case Report

A 30 year old woman, second gravida conceived spontaneously. She was married for 10 years and had regular menstrual cycles. She had a previous normal vaginal delivery, 9 years back with a baby weight of 2kgs. She consulted with our hospital after two months of amenorrhea due to the present pregnancy and was immunized. For her present pregnancy, a routine ultrasound at 11 weeks of gestation confirmed the diagnosis of a Monochorionicmonoamniotic twin pregnancy. Her anomaly scan at 20 weeks confirmed both the fetuses had no anomalies and one fetus had single umbilical artery. After 22 weeks, she underwent serial ultrasound every 2 weeks with regular antenatal visits. In every scan, a full assessment of fetal growth, amniotic fluid volume and fetal Doppler was performed to anticipate any complication. She received antenatal steroids Injectionbetamethasone 12mg IM, 2 doses 24 hours apart at 34 weeks of gestation to enhance lung maturity. The course of pregnancy went uneventful. She was admitted at 34 weeks for close monitoring. She underwent daily non-stress testing and weekly ultrasound with Doppler. At 37 weeks she presented with premature rupture of membranes in latent phase of labour. She was taken up for an emergency caesarean section in view of PROM for >12 hours and non-progress of labour. Caesarean section was performed and I twin was delivered by vertex presentation and II twin by breech extraction. She delivered two live female babies weighing 2.5kgs and 2.9kgs respectively with good APGAR score. The first twin had single umbilical artery [Figure - 1]. Placental examination showed a single placenta with Monochorionicmonoamniotic membrane and umbilical cord entanglement [Figure - 2]. Both infants showed good growth and development with nil complications at 6 months of age.



Fig 1 – Single Umbilical Artery



Fig 2 – Placenta showing Monochorionic Monoamniotic membrane with entangled cord.

### III. Discussion

Monoamnioticplacentation is the result of late splitting of the developing embryo around 8 to 9 days after fertilization. Cord entanglement, malformations, twin-to-twin transfusion syndrome (TTS) and prematurity are responsible for their high perinatal morbidity and mortality. [2]. Possible complications of Monochorionicmonoamniotic (MoMo) twins include: Cord entanglement, a condition unique to MoMo pregnancies, which occurs in 42% - 80% of cases and been traditionally related to high perinatal mortality [3]. Although entanglement with true knots represents a significant risk, actual umbilical cord vascular accidents may be less common than anticipated. The risk that a tightening knot may compromise the umbilical circulation may be ameliorated by the low friction surfaces of the cords, the cushioning effect of Wharton's jelly and the resistance of the vessels to compression. Cord compression is another life threatening condition preventing oxygenation and vital nutrients resulting in fetal demise [4].

Twin-to-Twin Transfusion Syndrome (TTTS) causes one twin to become undernourished whereas the other developshyperdynamiccirculation and heart failure. In severe TTTS presenting with acute polyhydramnios during the second trimester, endoscopic laser coagulation of the intercommunicating placental vessels is associated with survival of atleast one baby in about 70% of the pregnancies [5]. TTTS is not as common among MoMo as in MoDipregnacies because MoMo placentas have more arterioarterial and fewer deep

arteriovenous anastomoses than MoDi placentas. The presence of polyhydramnios, discordant fetal growth, hydrops, congestive heart failure, tricuspid regurgitation and discordant bladder fillings make the prenatal diagnosis of TTTS possible. Congenital malformations are associated with high perinatal mortality in premature singletons as well as in twins. Malformations are more frequent in monozygotic than dizygotic twins and they are 2.5-fold higher in monochorionic than in dichorionic placentations [6].

**Premature infants:** Those born before 32 weeks of gestation have a high incidence of perinatal depression, respiratory distress, early and late onset sepsis, patent ductus arteriosus, necrotizing enterocolitis, intracranial hemorrhage, prolonged hospitalization and poor neurological outcomes. All MoMo twins are born premature as deemed by medical professionals to surpass the complications [7]. It is known that uncomplicated twin pregnancies have a higher incidence of premature birth than singletons and that MoMo twins are at an even greater risk of being born before 32 weeks of gestation. During the last 20 years, most clinicians have opted for caesarean delivery in MoMo pregnancies. The early detection of chorionicity and amnionicity is important in the management of twin pregnancies, as the risk of fetal loss is higher in monochorionic than in dichorionic twins. A thick membrane between embryos indicates a diamniotic-dichorionic placentation, whereas a thin, wisp-like membrane suggests a monochorionic-diamniotic pregnancy. The distinction is easiest in the first trimester and becomes progressively more difficult later in gestation. Among monochorionic twins, monoamniotic placentation has the highest perinatal mortality, approaching 50%. Detection of monochorionic pregnancies at 10 to 14 weeks of gestation and monitoring by serial ultrasounds should lead to early diagnosis of TTTS by identifying the disparity in fetal size and amniotic fluid volume between donor and recipient twins [8].

#### **IV. Conclusion**

Women with monochorionic monoamniotic twins should be counseled immediately after the diagnosis of MoMo twins regarding the complications and perinatal mortality. With a multidisciplinary approach as followed in our case, a good outcome can be achieved. These antenatal women should be subjected to intensified monitoring as well as early admission in the hospital for close monitoring; taking care and caution to prevent perinatal mortality, thus, progressing to deliver at term.

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