

Monoamniotic twin pregnancy: A favourable outcome despite multiple cord and placental complications

Gravidez gemelar monoamniótica: Desfecho favorável apesar de múltiplas complicações do cordão e da placenta

Ana Elisa Sousa¹, Ana Paula Ferreira¹, Marta Luísa Rodrigues¹

Serviço Ginecologia/Obstetrícia da Unidade Local de Saúde Amadora/Sintra, Amadora, Portugal

Abstract

We report the case of a monochorionic monoamniotic twin pregnancy conceived by in vitro fertilisation, complicated by fetal growth discordance, proximate cord insertion, a true umbilical knot, and a placental chorioangioma. Despite multiple factors associated with adverse perinatal outcomes, regular and individualised antenatal surveillance, defined in agreement with the couple, allowed early identification of fetal compromise and timely obstetric intervention. Caesarean section was performed at 31 weeks' gestation, with a favourable perinatal outcome, reinforcing the importance of rigorous monitoring and shared decision-making in monochorionic monoamniotic twin pregnancies.

Keywords: Monochorionic monoamniotic; Intertwin growth discordance; Umbilical cord entanglement; Chorioangioma.

Resumo

Relatamos o caso de uma gravidez gemelar monocoriônica e monoamniótica após fertilização *in vitro*, que apresentou como intercorrências a discordância do crescimento fetal, inserção próxima dos cordões umbilicais com nó verdadeiro e corioangioma placentário. Apesar da presença de múltiplos fatores associados a risco perinatal, uma vigilância pré-natal regular e individualizada, definida em concordância com o casal, permitiu a identificação precoce de comprometimento fetal e a intervenção obstétrica atempada. A cesariana foi realizada às 31 semanas, com desfecho perinatal favorável, reforçando a importância da monitorização rigorosa e da decisão partilhada nas gravidezes gemelares monoamnióticas.

Palavras-chave: Monocoriônica monoamniótica; Discordância do crescimento fetal; Nó verdadeiro dos cordões umbilicais; Corioangioma placentário.

INTRODUCTION

Monoamniotic twin pregnancies represent 1% of all twin pregnancies¹. They result from a late division of the zygote, occurring between the eighth and thirteenth day after fertilisation¹. Beyond the complications inherent in monochorionic twins, the absence

of an intertwin membrane introduces an additional vulnerability, particularly to cord-related events and growth discordance^{1,2,3}.

Assisted reproductive techniques, such as in vitro fertilisation (IVF), have been associated with an increased incidence of monozygotic twinning, although reports regarding their association with monoamniotic pregnancies remain inconsistent⁴.

In monoamniotic twins, umbilical cord entanglement is almost inevitable owing to the shared amniotic

1. Serviço Ginecologia/Obstetrícia da Unidade Local de Saúde Amadora/Sintra, Amadora, Portugal.

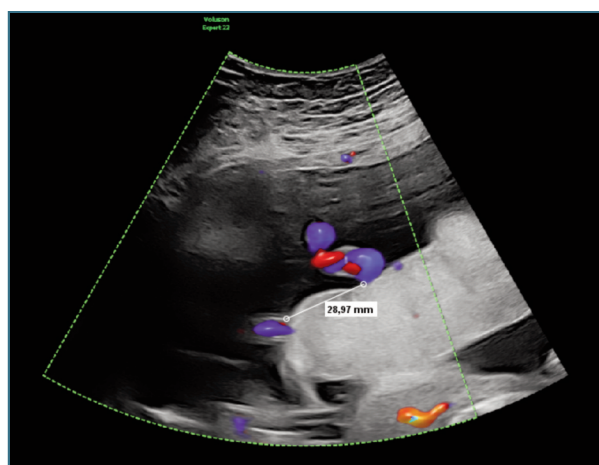


FIGURE 1. Ultrasound view showing two cord insertions in the placenta separated by approximately 29 mm, indicating proximate umbilical cord insertion.

cavity¹. While many cases remain asymptomatic, transient or sustained umbilical vessel compression can result in hypoxic injury or intrauterine demise^{1,2}. One structural factor that may exacerbate these risks is proximate cord insertion, defined as umbilical cord insertions separated by less than the 5th percentile distance (below 33 to 40 mm)¹. This anatomical variant has been associated with abnormal vascular anastomoses and adverse perinatal outcomes¹.

Placental abnormalities may further exacerbate the haemodynamic instability intrinsic to monoamniotic pregnancies. Among these, chorioangioma – a benign vascular tumour of the placenta – can disrupt fetoplacental circulation and accentuate perfusion imbalances⁵.

CASE REPORT

A 36-year-old primigravida was referred to a tertiary hospital care centre with a diagnosis of monochorionic monoamniotic twin pregnancy conceived through IVF following single-embryo transfer. Her past medical and surgical history was unremarkable.

Fetal surveillance was performed with serial ultrasound examinations every 1-2 weeks from 17 weeks' gestation. The surveillance strategy was discussed with the patient, and ambulatory follow-up was chosen. From 27 weeks onwards, assessments were intensified,

with consultations including cardiotocography and/or ultrasound evaluation every 1-3 days.

A discrepancy in fetal growth was noted from 27 weeks, with the second twin being smaller, with normal Doppler findings. Growth discordance increased from 23% to 27% by 30 weeks, with the estimated fetal weight of the first at the 78th percentile and that of the second twin at the 10th percentile. Ultrasound also revealed two cord insertions separated by approximately 29 mm, indicating proximate umbilical cord insertion (Figure 1). The pregnancy was otherwise uneventful, and both fetal echocardiograms revealed no abnormalities.

A course of antenatal corticosteroids for fetal lung maturation was administered at 25 weeks, with a rescue course at 27 weeks.

At 31 weeks, caesarean section was performed due to a persistent non-reassuring fetal heart rate pattern of the second twin, requiring urgent delivery without time for antenatal neuroprotection. The first twin weighed 1900 g and the second twin weighed 1630 g; both had Apgar scores of 8/9/9.

Both neonates were admitted to the neonatal intensive care unit. They remained hospitalised for 32 days for management of prematurity-related complications, including respiratory distress syndrome, neonatal jaundice, patent foramen ovale and patent ductus arteriosus. Maternal postoperative recovery was uneventful.

Three months after birth, the first infant showed favourable clinical evolution, with weight between the 15th and 50th percentiles. The second infant presented with mild hypertonia and incomplete head control, with weight at the 3rd percentile.

Macroscopic examination of the placenta revealed paracentral cord insertions separated by approximately 30 mm, with a true knot between them (Figure 2). Histopathological analysis identified a paracentral placental chorioangioma measuring 20 mm in its greatest dimension, which had not been detected during prenatal surveillance, and morphological features suggestive of maternal vascular malperfusion.

CONCLUSION

Despite multiple potential risk factors, frequent

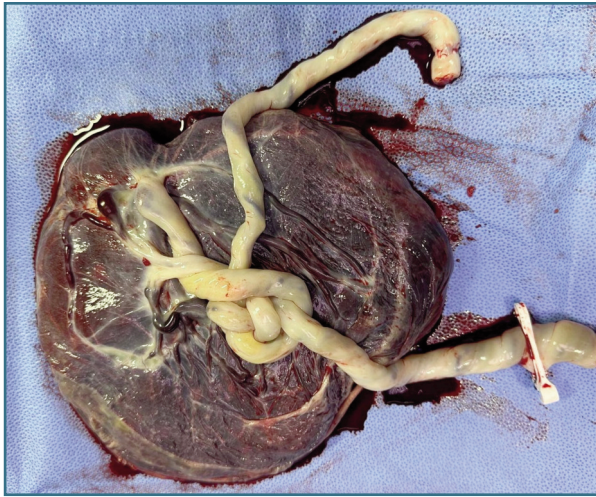


FIGURE 2. Macroscopic view of umbilical cord entanglement with a true knot involving both fetuses in a monochorionic monoamniotic twin pregnancy. The umbilical cord corresponding to the first twin is identified by a white clamp.

antenatal surveillance allowed early detection of fetal compromise and appropriate obstetric management, resulting in a favourable perinatal outcome.

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AUTHORS CONTRIBUTIONS

AES: Conceptualization, Investigation, Writing – original draft.

APF: Writing – review & editing.

MLR: Supervision, Writing – review & editing.

INFORMED CONSENT

Patient consent was obtained to publish this work.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest

CORRESPONDENCE TO

Ana Elisa Sousa

E-mail: anae.sousa.l@gmail.com

<https://orcid.org/0009-0006-3349-9612>

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