Double trouble – a complicated twin pregnancy

Dr Gustavo Scavuzzo
Westmead Institute of Maternal Fetal Medicine, NSW

A/Prof Indika Alahakoon
Westmead Institute of Maternal Fetal Medicine, NSW

Key images

References

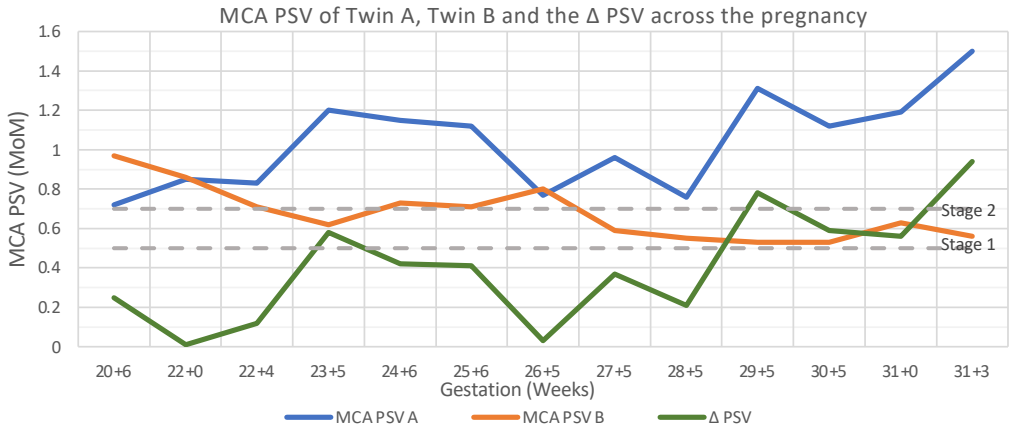
Introduction

Monochorionic Diamniotic (MCDA) pregnancies are associated with multiple complications including Twin-Twin Transfusion Syndrome (TTTS) and Twin Anaemia Polycythaemia Sequence (TAPS). Twin pregnancies occur at a rate of 1.5% and 30% of these are MCDA (1). Such pregnancies are associated with a 4 fold increased rate of perinatal mortality (2) at a rate of 44.4 per 1000 births (3).

This is largely attributed to known complications of MCDA twin pregnancies, whereby vascular anastomoses lead to shunt formation, initial cardiovascular compensation and finally haemodynamic compromise. Two discreet conditions arise, being TTTS and TAPS; occurring in 10-15% and 5% percent of cases respectively (4). The mortality from TTTS is 26% (4) whilst the mortality form TAPS is 8% (1, 5).

Common management of TTTS is Fetoscopic Laser Coagulation, a surgical procedure ablating common anastomoses between twins via laser. Whilst largely successful in the treatment of TTTS, it creates false reassurance that other complications cannot occur with 15% of pregnancies being affected by TAPS post FLC for TTTS (4). There is limited awareness with only 81% of General Obstetricians being aware of this rare but important complication (6).

Stage	Diagnostic Criteria
I	Δ MCA-PSV > 0.5 MoM; without signs of fetal compromise
II	Δ MCA-PSV > 0.7 MoM; without signs of fetal compromise
III	As Stage 1 or 2; with cardiac compromise of donor
IV	Hydrops of donor
V	Intrauterine demise of one or both fetuses preceded by TAPS



Case

This case report outlines an MCDA pregnancy complicated by both conditions and secondary severe fetal cardiac compromise. TTTS was identified at 18 weeks gestation and treated immediately with FLC. Twin A was the recipient and Twin B the donor. Thereafter routine ultrasonographic surveillance was performed on a weekly basis, MCA PSV values from such monitoring is demonstrated in figure 1. A new diagnosis of TAPS was recognised at 32 weeks gestation; the previous donor recipient relationship was now reversed. Additionally, a fetal echocardiogram of the recipient revealed torrential tricuspid regurgitation, a massively dilated right heart and critical pulmonary stenosis with moderate ascites in the recipient. Delivery was facilitated via caesarean section using appropriate protocols given the gestational age. Postnatal testing confirmed the ultrasonographic diagnosis of TAPS. Following delivery, both neonates have been stable, with the cardiac function of twin B improving to mild tricuspid regurgitation as well as dysplastic valves in the right heart. Detailed ultrasonographic images and further results are included here via the QR code above.

Discussion

This case demonstrates a rare although pathognomonic case of TTTS, FLC and post FLC TAPS associated with cardiac compromise. Clinicians must be reminded regarding the false reassurance provided by initial treatment of this sequence of conditions for which general obstetricians are largely unaware (6).

Reassuringly, the natural history and antenatal monitoring guidelines are well established in the literature. However, the management of this acute presentation is not in consensus and heterogenous in terms of treatment. Management paradigms have been suggested, However this remains untested and there are no randomised control or high-strength trials to support any paradigm (10). This difficulty is recognised in the RCOG guidelines (1). Whilst only one treatment treats the underlying cause (FLC), this is highly complicated at the gestational that post FLC TAPS occurs and complicated by frequent oligo/polyhydramnios (1). Additionally, the previous FLC was unable to identify small anastomoses responsible for TAPS, which reduces the likelihood of success of repeat FLC as a disease modifying therapy (1). Further management options, including selective fetocide and intrauterine transfusion also carry significant rates of complications and fundamentally will not alter the disease process (1). Hence, the management dilemma faced in this case was expectant management versus delivery. This case exemplifies the role of careful monitoring and expective management coupled with timed delivery to achieve the best outcomes for both mothers and neonates.