Twin anaemia polycythaemia sequence in dichorionic diamniotic twins

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Introduction

Twin anaemia polycythaemia sequence (TAPS) is a syndrome described in monochorionic twins characterised by anaemia in one twin and polycythaemia in the other. Vascular anastomoses are thought to occur only in monochorionic twins.[1] However 12 case reports have demonstrated evidence of TAPS, twin-twin transfusion syndrome (TTTS) and twin reversed arterial perfusion (TRAP) syndrome and thus evidence of vascular anastomoses in dichorionic diamniotic twins.

Case

A 34 year old, G2P1, was transferred to our tertiary centre with a spontaneous DCDA twin pregnancy with dichorionicity diagnosed at the first trimester ultrasound. At 16 weeks, Twin 1 had normal biometry, normal amniotic fluid and morphology, while, Twin 2 demonstrated intrauterine growth restriction with AC (abdominal circumference) <5th centile, oligohydramnios (which subsequently resolved at 26 weeks) and Tetralogy of Fallot. At 32 weeks gestation, there was persisting weight discordance of 40 percent and a new finding of discordance of middle cerebral artery peak systolic value (MCA PSV). Twin 1 had MCA PSV 0.56 multiples of the mean (MoM) while Twin 2 had MCA-PSV 1.3 MoM. Twin 1 had an normal appearing placenta, and twin 2 demonstrated an echogenic and thickened placenta, raising suspicion for a diagnosis of TAPS. At birth after emergency caesarean section for abnormal CTG in Twin 2,

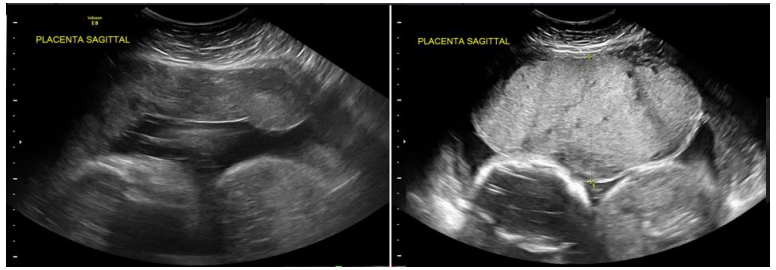

Figure 1. a) Placenta of twin 1: normal appearing b) Placenta of twin 2: thickened and echogenic

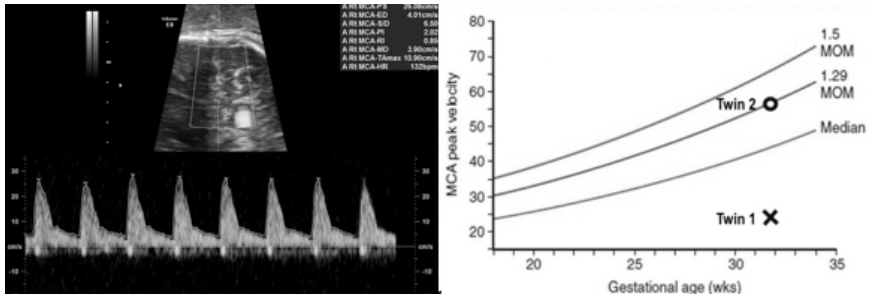

Figure 2. a) MCA doppler of Twin 1. MCA PSV 26cm/s and 0.56 MoM suggestive of polycythaemia b) Plotted MCA PSV of Twin 1 (cross) and Twin 2 (circle) at 32 weeks

Twin 1 had Hb of 266 g/L and reticulocyte percentage of 4.5%. Twin 2 had Hb 49 g/L, but due to the emergent clinical scenario, reticulocyte count was not performed and urgent packed red cell transfusion was given. Twin 1 had a darker placenta while Twin 2 had a pale placenta and thin umbilical cord. Placental histopathology confirmed dichorionicity.

Discussion

Suspicion of TAPS was raised in our case due to a large difference in MCA-PSV, marked difference in placental echogenicity and a large haemoglobin difference of 217g/L. The current ISUOG criteria for the antenatal diagnosis of TAPS includes antenatally, MCA-PSV > 1.5 MoM in the donor and MCA-PSV < 1.0 MoM in the recipient. Postnatally criteria includes a haemoglobin difference of 80g/L between twins and either a reticulocyte count ratio of 1.7 or evidence of small (<1mm) anastomoses seen in the placenta.[2] Antenatal criteria was met except for MCA PSV >1.5MoM in the anaemic twin, and postnatal criteria was met excluding reticulocyte count which was not collected due to the critical clinical scenario. The twins do however fulfil new proposed criteria, of a difference in the MCA-PSV between the donor and recipient twin of >0.5 MoM (delta MCA PSV >0.5 MoM)[3]. Although rare, vascular anastomoses do occur in dichorionic twins and therefore TTTS and TAPS should be considered as differential diagnoses in dichorionic twins.

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