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The heartless triplet: Acardius anceps complicating monochorionic pregnancy

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Background: Twin Reversed Arterial Perfusion (TRAP) sequence affects 3% of monochorionic triplets. It results in a 'donor' fetus retrogradely perfusing an 'acardiac' fetus. In the acardius anceps variant (9%), the fetal head and body are differentiated. Common to all acardiac variants in the literature is the preferential development of the lower body.

Objective: Here we present an unusual case of TRAP sequence in a triplet pregnancy with paradoxical preferential development of the upper body of an acardiac anceps fetus.

Clinical Description: A 28 year woman, G1P0 was referred at 14 weeks' with MCTA triplet pregnancy complicated by demise of triplet 3; the fetus appeared fully formed with marked cystic hygroma and no heartbeat. At 18 weeks significant increase in size, hydrops and Doppler perfusion into triplet 3 prompted diagnosis of TRAP sequence. End-diastolic flow (EDF) in the umbilical artery and a-wave in the ductus venosus of triplet 2 were absent, therefore interstitial laser coagulation of pelvic vessels was performed in triplet 3. At 33+2 weeks the restored positive EDF in triplet 2's umbilical artery deteriorated. The babies were therefore delivered by EMCS. Triplet 1 weighed 2030g with Apgars 10,10 and Triplet 2, 1650g with Apgars 7,9,10.


Discussion: Acardius anceps variant of TRAP was diagnosed on autopsy of triplet 3. Unlike other cases described, the upper body was better developed: an aortic type vessel extended rostrally with appropriate branches and the upper limbs had 5 digits on each hand. In contrast, the vasculature of the lower body was difficult to assess. Fracture dislocations were seen at both knees and ankles, with fusion of the 4th and 5th digits of the feet.

Conclusions: The above case highlights difficulties posed by well differentiated TRAP variants at early gestations. Doppler studies and a thorough examination are essential to aid diagnosis of these rare cases.

Speaker Biography

Sarah L Adams is currently studying in her penultimate year of Medicine at the University of Cambridge. She intercalated in Genetics during her 3rd year, graduating with a 1st Class in 2016. She aspires to be an Academic Obstetrician Gynaecologist and has a interest in global women's health and the genetics of fetal development. In her spare time, she enjoys learning to fly with Cambridge University Air Squadron.

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