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Title: A case presentation of identical monochorionic twin pregnancy with Twin reversed arterial perfusion (TRAP) sequence.

Introduction-Twin reversed arterial perfusion (TRAP) sequence is a rare complication of identical monochorionic twin pregnancies. TRAP--one twin (known as the acardiac twin) does not develop a functional heart, or their heart is severely underdeveloped. This twin receives its blood supply from the other twin, the “pump twin,” who has a properly functioning heart. The incidence is one in 35,000 births and one in 100 monozygotic twin pregnancies ⁽¹⁾ Because the twins share a placenta and their circulatory systems are connected, the pump twin supplies blood to itself and the acardiac twin, putting extra strain on its heart

Objectives- To identify the pregnancy with TRAP fetus and associated risk for the pump fetus.
Management of the TRAP fetus by selective fetal reduction.

Case report- A 22 yr old patient presented with Twin pregnancy with one anomalous fetus at 18 weeks

Anomaly scan
was monochorionic diamniotic placenta seen in the anterior wall

Fetus A

No gross abnormality seen (pump fetus).
No hydrops seen
AUA=18+3wks FHR=154bpm
EFW=230gm(+/-34gm)



Fetus B-

Multiple structural abnormalities noted-
1. The head and face of fetus are not well seen probably the brain is herniated outside suggestive of Acrania.
2. Marked subcutaneous oedema around the fetus, mainly around the head and neck. Pleural effusion noted,
3. The heart and chambers not well visualized, however a pulsating vessel was seen in the thoracic region suggestive of abnormal structure of the heart .
4. Bilateral Talipes Equinovarus deformity or clubfeet.

The umbilical artery shows reversed perfusion to the fetus from the placenta with only vascular structures seen in the fetus with no well defined heart suggestive of TRAP fetus.

The volume of TRAP fetus is 260cc
AUA=17wks Pulsation in vessel=156bpm



Discussion-Mortality of pump twin is around 50% due to heart failure and sometimes prematurity caused by polyhydramnios⁽²⁾ The prognosis of the pump fetus depends upon the relative size of the TRAP fetus, and the doppler, hydropic changes in the pump fetus.
If the abnormal twin is greater than 50% of the size of the pump twin, the survival rate for the pump twin is only 10%⁽³⁾ .

Conclusion- Monitoring of the pump fetus with doppler studies and earliest intervention is necessary. Selective fetal reduction greatly increase the survival chances of the pump twin to about 80%. The prognosis of the pump fetus depends upon the volume of the TRAP fetus.

References-

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2. Van Allen MI, Smith DW, Shepard TH. Twin reversed arterial perfusion (TRAP) sequence: a study of 14 twin pregnancies with acardius. Semin Perinatol. 1983;7(4):285–93.
3. Moore TR, Gale S, Benirschke K. Perinatal outcome of forty-nine pregnancies complicated by acardiac twinning. Am J Obstet Gynecol. 1990;163(3):907–12. doi: 10.1016/0002-9378(90)91094-S.

Laser reduction of TRAP fetus.

Performed under LA. The TRAP fetus vessels were targeted with 18G spinal needle under USG guidance. A 600 micron laser fibre was advanced within it and with short bursts of laser energy of 30 watts. The vessels were ablated over 30 sec. Follow up after 1 week-FHR absent in Fetus A