



CASE REPORT

Acardiac Parabioc Triple

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Abstract

Acardiac parabioc twin commonly known as parasite occurs rarely and may lead to high output cardiac failure, hydrops or premature delivery in the pump fetus. Doppler USG of acardiac fetal umbilical vessels and fetal echocardiography aids in the diagnosis. Treatment can be done prenatally by stopping the blood flow to the acardiac twin without affecting the pump twin, achieved by endoscopic (fetoscopic) ligation or laser coagulation of the umbilical cord or Bipolar cauterization or intra-fetal radio frequency ablation or USG guided thrombosis of umbilical cord.

Key Words

Recipient and Pump Twin, Acardiac, TRAP, Triplet Pregnancy, USG

Introduction

Acardiac parabioc twin occurs rarely in 1 in 35000 pregnancies (1) and about 1 in 100 Monochorionic pregnancies (2) and is about 3 times higher among monozygotic triplets than twins (3). The Acardiac twin is called parasite (4) because it requires blood pumped by the normal co-twin to keep developing putting the pump fetus at risk of developing high output cardiac failure, hydrops and pre-mature delivery (5). We present a case of acardiac parabioc triplet in monochorionic triamniotic pregnancy conceived normally which was diagnosed at 26-27 wks of pregnancy.

Case Report

A 24 years old G₃P₂A₀L₂ with previously undiagnosed triplet pregnancy at 26-27 wks presenting with pain abdomen, was admitted. USG scan revealed a Monochorionic triamniotic triplet pregnancy with two normal appearing fetuses of 26-27 wks gestation. The third fetus had an incompletely formed Skelton with absent head, absent upper limbs, small thorax; and abdomen was filled with Heterogenous mass without differentiation of organs. It had well developed lower limbs with femur length of 22 wks. Its spine appeared normal as shown in *Fig 1*. The abdomen and Thorax was surrounded by Heterogeneous mass as shown in *Fig 2*. The patient also

had moderate polyhydramnios and single large placenta was located anteriorly. It was Monochorionic and triamniotic pregnancy.

During 28th week of gestation the patient went into pre-mature labour, delivered a male baby who died immediately, and a female baby who died after few days. She also delivered a headless fetus which also had absent upper limbs but lower limbs were well developed.

Fig. 1. Acardiac Parabioc Triplet Showing Spine with Heterogeneous Mass Around it Without Discernible



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Fig. 2. Acardiac Parabolic Triplet Diagnosed at 27-28 Weeks Pregnancy



Discussion

Acardiac twinning is considered sequelae of twin reversed arterial perfusion sequence (TRAP) in Monochorionic Twins/triplets pregnancies (3) The Acardiac twin is perfused by Normal co-twin called as pump twin or donor twin by means of reversal of circulation through the large vein to vein anastomosis within the placenta (4). The reversed circulation in the anomalous twin alters the hemodynamic forces needed for normal cardiac development resulting in Acardiac. The Umbilical cord of the Acardiac fetus has single umbilical Artery in most cases (66%)(6) Chromosomal abnormalities have been found in 33% of acardiac twins. (7,8) This in turn supports a possible etiological factor that aneuploidies could lead to slow development of abnormal twin (9).

Doppler USG (3) of acardiac fetus's umbilical cord vessels shows reversal of normal flow. Umbilical artery S/D ratio [systolic diastolic ratio] of donor twin is observed to be normal. S/D ratio of reversed flow in the acardiac twin's umbilical vein reported to be elevated and provides a measure of systemic vascular resistance of acardiac fetus. Acardiac twin's cord contain single umbilical artery in 50% cases (6). Fetal echocardiography is essential to evaluate pump twin for signs of cardiac failure. Acardiac Twins (3) are classified as Hemicardius if heart is

incompletely formed; Holocardius if heart is absent; Acardius Anceps when head is poorly formed; Acardius acephalus if head is absent; Acardius amorphous if unrecognizable amorphous mass is present.

Goal of pre-natal treatment is to stop the blood flow to the acardiac twin without affecting the pump twin. This can be achieved by endoscopic (fetoscopic) ligation or laser coagulation of the umbilical cord or Bipolar cauterization or intra-fetal radio frequency ablation (10) or USG guided thrombosis of umbilical cord (3). Acardiac fetus has 100% mortality (11). Pump twin is at risk of demise because of cardiac failure or pre-term delivery due to polyhydramnios (11, 12).

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