Late Presentation of Acardiac twin- A Rare case report

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ABSTRACT

Acardiac twinning, a rare congenital anomaly of monozygotic twin pregnancy, often results from abnormal placental vascular anastomosis. This leads to twin reversal arterial perfusion with complex Pathophysiology. Here we are presenting an interesting case of second gravida of 26-28 weeks of gestation with twin of mono-chorionic type in preterm labor, it was accidently diagnosed a case of acardiac twin and delivered at our institution.

Keywords: Acardiac twin; fetal anomaly; twin reversed arterial perfusion sequences (TRAP)

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INTRODUCTION

Multiple pregnancy accounts for 1.5% of all pregnancies, with approximate perinatal morbidity and mortality of 10% [1]. Certain malformations, such as conjoined twins, twin to twin transfusion syndrome & twin reversed-arterial-perfusion (TRAP) sequence, are unique to multiple pregnancy. The presence of an acardiac twin occurs in one of every 35,000 twin pregnancies and in 1% of all mono-chorionic twin pregnancies[2]. Occurrence of acardiac twin is due to twin reversed arterial perfusion (TRAP) sequence occurring early in embryogenesis. There is vascular communication between the monozygotic twin.

The vascular communication in acardiac twin is different. In that, the acardiac twin (recipient twin) receives blood supply from other twin (pump twin) through umbilical artery. The blood in the umbilical artery is mostly deoxygenated. So, leads to secondary organ atrophy[3].

CASE REPORT

A case of 24 year female G2P1A0L1 with 7 month amenorrhea admitted in Sir T. hospital, Bhavnagar on 10/9/2014, at 10.30 p.m. Patient had not taken any antenatal visits and she was referred from rural hospital with twin pregnancy.

She had c/o lower abdominal pain since 4 hours and pain was increasing in

nature with hardening of uterus and per vaginal blood stained discharge. She had not taken any treatment for infertility; she had not any ANC investigations and USG. O/E patient had mild pallor; BP was 130/80, Pulse-98/min. On P/A examination uterus was 36 weeks size, multiple fetal parts felt, FHS were not located properly due to obesity, uterine contractions were present on P/S examination show was present, On P/V examination cervical os fully dilated, fully effaced, with bag of membrane, presenting part was feet of the baby. ARM done liquor drained out which was clear and baby delivered by assisted breech vaginal delivery. Cord was clamped and cut. Baby had weak cry, APGAR score was 6 at 1 min and 5 min & weighed about 1kg, Baby was kept in NICU. After delivery of 1st baby on P/A examination uterus was still 32-34 week size, presentation of fetus couldn't be recognized. On P/V examination feet of second baby felt which was malformed. With good uterine contraction, trial for breech vaginal delivery was given for about 45 mins, but station was not coming down and mother was exhausted, signs of obstructed labor present. There for decision for lower segment Cesarean section was taken and baby delivered with difficulty by breech extraction. On gross examination of fetus the lower limb and buttocks were malformed, still well developed (figure1). The upper limb, facial structure, skull vault were not properly developed. There were not any recognizable parts and weighted about 2.5 kg (figure2). So flashy mass of fetus was suspected to be an acardiac twin. Relatives were not willing to do any further investigations.

Placenta was weighted about 500 gm and it was mono-amniotic, mono-chorionic type.

DISCUSSION

TRAP sequence is one of the rare occurrences of monozygotic mono-chorionic twin. In this situation one twin has no cardiac structure or placental circulation and the blood supply comes from the healthy twin by means of A-A Anstomosis and the blood of the donor twin enter the acardiac twin via the umbilical artery & iliac vessels. Thus the arterial system of acardiac twin is perused in reverse manner with deoxygenated blood from donor twin and lower half of the body of acardiac twin although malformed is better developed once the blood enters upper part of the body in retrograde fashion oxygen saturation is very low ,halting the development of heart and upper part of the body.[4]

Multiple anomalies associated with acardiac twin like absence of cranial vault, facial structure, cleft lip/palate, anopthalmia, absent limb, thoracic organ defect.

Acardiac twin classified as,

- Acrdiac acephalus-thorasic organ and fetal head absent
- Acardiac acromus-only fetal head and some neural tissue of brain developed
- Acardiac amorphous-mass of tissue without recognizable human part
- Acardiac myelocephalus-Head and one or several extremities developed

Although classification is not important as mortality is 100% and our importance is to save pump twin. Pump twin also at risk to die because of high cardiac output failure, in our case pump twin expired after 24 hour due to high cardiac output failure and this cardiac failure is also directly proportional to weight of the acardiac twin.

Currently to stop the blood flow to acardiac twin a high energy radiofrequency ablation is utilized to destroy the blood vessels and surrounding tissue at the site where they enter the acardiac twin. the other therapy is fetoscopic placental laser surgery directed at the vascular connection between the twins.[5]

CONCLUSION

Accurate antenatal diagnosis is essential to improve the prognosis of this rare entity of TRAP sequence. Improved imaging techniques like 2D ultrasonography, 3D ultrasonography and transvaginal Doppler ultrasonography have made the diagnosis of Acardia possible even in the first trimester of pregnancy by detecting inversion of vascular flow in the recipient acardiac fetus.

Prevention of preterm labor and diagnosing cardiac failure in the pump twin is very important. First line treatment is by blocking the vessel of acardiac twin by radio frequency ablation by ultrasound guidance. Treatment at appropriate time improves the survival of the pump twin by 95% with an average age at delivery between 36 and 37 weeks.

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