SONOGRAPHY IS THE MODE OF CHOICE TO DIAGNOSE THE “MONSTER TWIN” OF MONOAOMNIOTIC-MONOCHORIONIC.

OBJECTIVE: “Mono-chorionic, Mono-amniotic Second Monster Twin” was diagnosed during sonography in Radiology Department, Aga Khan Hospital for Women & Children, Kharadar, Karachi, AKUH.

INTRODUCTION & BURDEN OF DISEASE: Acardiac: Acardiac twins (recipient twins) are known to be disadvantageous non-viable twins that undergo secondary atrophy in association with a twin reversed arterial perfusion sequence.

Epidemiology: Acardiac twins are thought to affect 1 in 100 monochorionic twin pregnancies and 1 in 35,000 singleton pregnancies overall.[1-3] There is no recognized familial recurrence.

Pathology: Acardiac & acardiac twin: underruns secondary atrophy of the heart and dependent organs (brain & often develops a characteristic set of anomalies including Acardiac-Acute twins. This twin carries a normal placenta at the opposite (pump) twin by stealing its circulation.

There are two school of thought in the pathogenesis of the acardiac twin:
1. Some propose that the primary defect is one of cardiac embryogenesis (hydropspheroangioma).
2. Others propose that the primary defect is the abnormal umbilical vascular communication between endodermal vessels in the placenta with arterial to steal avascular communication leading to reversed flow of blood to (or hematologically disassociated) recipient twin, with resulting secondary atrophy of the heart and dependent organs.

Twins: reverse arterial perfusion syndrome (TRAP) is a type of twin to twin transfusion which occurs in “Monochorionic Gestation”. There are two accepted theories about the pathogenesis of the TRAP sequence. The popular theory suggests that perfusion of the recipient twin occurs by reversal of flow through the umbilical vessels of the normal pump twin through the anomalous vessels in the placenta. This blood entering the recipient twin is under reduced oxygen tension. The decalcified blood (reduced oxygen tension) that enters the body of the affected twin allows some development of lower body and upper extremities but as time passes the blood reaches the upper half of the body, the oxygen saturation is too low causing disorganization of the placenta and poor development of head and upper extremities.[1-3]

The second theory suggests that there is primary failure in early organogenesis with cardiac disorganization.[1] This reversed arterial perfusion (TRAP) sequence is classified according to the degree of development of the placental twins.[1]

Acardiac-Acute twin, where heart & upper extremities are not developed. It is most common variety of which is seen in our [Present Case] case.

METHODOLOGY: RADIOGRAPHIC FEATURES:
I. ULTRASOUND CRITERIA:
While features can vary to some extent, general features include fetal biometric discordance. Marked edema (massive) of the affected twin with cyclic changes, Normal or accelerated growth of the lower extremities due to inadequate blood supply in the interstitial circulation. Retrograde supply of the descended blood to the upper body and head, edema of the heart, brain, and upper extremities, which are completely absent or severely diminished. Umbilical cord to the scardiac twin is often quite short and may be difficult to identify.

Associations: Single umbilical artery: –60% of cases. Underlying chromosomal anomaly: –33%

II. Doppler Assessment:
Shows reversed flow through the umbilical arteries to the affected fetus.

A PARTICULAR CASE OF MONSTER TWIN WITH ACARDIAC-ACEPHALIC SECOND TWIN:

A woman of 35 years old with Para 2+0, Gestational age 19.5 weeks. The ultrasound scanning showed a normal single placenta and a moderate degree polyhydramnios. The fetuses were seen within the single gestation sac.

Twin-A: The active fetus showed normal biometry and morphology, while Twin-B: Without Head-Brain, Thorax [No Chest], No Heart seen, only blood flow seen in cords & lower abdomen was seen with Moving Long Bone [All four long bones were slightly curved & talipes feet & talipes hands], No abdominal organ identified separately & Body ecdema noticed.

The Acardiac-Acute twin is non-viable and management is aimed at maintaining viability of the other (donor/pump) twin, including close surveillance for development of hydrops. Interrupting blood flow to the acardiac twin may be performed by various methods which include hysterectomy and removal of the acardiac twin, ligation of the umbilical cord and/or laser ablation of vessels, but due to high expenses for above-mentioned management. In our case study, Patient seeked low cost treatment that's why patient moved to Local GP clinic and Terminated the both twin.

ULTRASOUND IMAGES WITH DESCRIPTIVE POINTS IN OUR CASE:

ULTRASOUND IMAGES WITH DESCRIPTIVE POINTS IN OUR CASE:

MONO-CHORIONIC TWIN.

BOTH TWIN SHOWS UMBILICAL CORD WITH VESSELS.

NO HEART SEEN IN MONSTER TWIN WHILE TWIN A HAS HEART & GREAT VESSELS.

RECOMMENDATION:
MCAA twin should be checked carefully to rule out Circum vessels, Heart, recipient twin, twin to twin interferential circulation & especially to rule out Morbid Acardiac-Acpehalic twin, in our case, the decision for termination was taken early by the patient.

KEY WORDS:
• Acardiac: Acardiac twin.
• Monarz Twin.
• Sonography for Monochorionic twin.

ABBREVIATION:
• ACAC: Acardiac-Acpehalic twin.
• MCAA: Mono-chorionic & Mono-amniotic.

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