

A parasitic or symbiotic relationship? :

A Rare case of Twin to Twin Transfusion syndrome

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INTRODUCTION

TWIN TO TWIN TRANSFUSION SYNDROME ALSO KNOWN AS FETO- FETAL TRANSFUSION SYNDROME OR TWIN OLIGOHYDRAMNIOS POLYHYDRAMNIOS SEQUENCE IS A RARE COMPLICATION OCCURRING IN MONOCHORIONIC DIAGNOSTIC PREGNANCY WHEREIN THERE IS ABNORMAL INTERTWIN VASCULAR CONNECTIONS WITHIN THE PLACENTA DIAGNOSED BETWEEN 16-24 WEEKS OF GESTATION THIS RESULTS IN HYPOPERFUSION OF THE OTHER TWIN (DONOR) AND HYPERPERFUSION OF THE OTHER (RECIPEIENT) WITH THEIR RESPECTIVE COMPLICATIONS AND OUTCOMES.

TTTS (TWIN TO TWIN TRANSFUSION SYNDROME OCCURS IN 15% OF MONOCHORIONIC PREGNANCIES.

DONOR TWIN

The donor twin receives less blood flow from the placenta compared to the recipient twin. As a result, the donor twin has less blood volume. This can lead to slower growth and decreased amniotic fluid volume. The donor twin urinates less. Since amniotic fluid is made up mostly of urine (pee), the amniotic sac can shrink or even disappear. When the amniotic fluid is low, the membrane or sac that the donor fetus is in can collapse around it. A shrinking amniotic sac is concerning because it can affect the movement of the fetus and can compress the umbilical cord.

RECEPIENT TWIN

The recipient twin receives too much blood volume from the placenta. The excess blood volume can put a strain on the recipient twin's heart, leading to heart failure. While the donor twin's body can be undernourished, the recipient twin's body is overworked. The recipient fetus has to process too much blood volume and makes more urine than is typical, leading to an amniotic sac that's much larger.



STATISTICS

TTTS IS A CONDITION AFFECTING 10% TO 15% MONOCHORIONIC PREGNANCIES AND IS ASSOCIATED WITH A HIGH RISK OF PERINATAL MORTALITY AND MORBIDITY

ALL LABS WERE SENT AND PATIENT WAS ADVISED ULTRASONOGRAPHY IN OUR CENTRE
ULTRASONOGRAPHY FINDINGS REVEALED TWIN OLIGOHYDRAMNIOS- POLYHYDRAMNIOS SEQUENCE

F1 TWIN : 1) ABSENCE OF BLADDER
2) DVP OF 1.5 CM S/O OLIGOHYDRAMNIOS
3) WT. OF 228GM WITH PARAMETERS OF 18W+2D
4) NORMAL DOPPLER STUDY

F2 TWIN : 1) MILD CARDIOMEGLY WITH MILD DILATED IVC, BOTH ATRIUM AND SVC PRONE TO FETAL CARDIAC FAILURE
2)NORMAL BLADDER
3) DVP OF 8CM S/O POLYHYDRAMNIOS
4) WT. OF 374GM WITH PARAMETERS OF 20W+3D
5) NORMAL DOPPLER STUDY

FINDINGS S/O: STAGE II TWIN TO TWIN TRANSFUSION SYNDROME

TTTS STAGING : QUINTERO CLASSIFICATION ACC TO ULTRASONOGRAPHIC FINDINGS

Quintero stages	Sonographic or Doppler findings
I	Polyhydramnios, DVP ≥ 8 cm in recipient's sac and oligohydramnios, DVP ≤ 2 cm in donor's sac with visible bladder in donor
II	As in I but no visible bladder in donor
III	As in II and abnormal Doppler flow of umbilical artery*, umbilical vein** or ductus venosus ***
IV	As in III and hydrops of either twin
V	Fetal demise of one or both twins

CASE REPORT

A 27YR OLD G6P3L2D2A2 WITH 22WKS OF GESTATION CAME TO VDGM, LATUR WITH OUTSIDE SCAN S/O "TWIN TO TWIN TRANSFUSION SYNDROME"

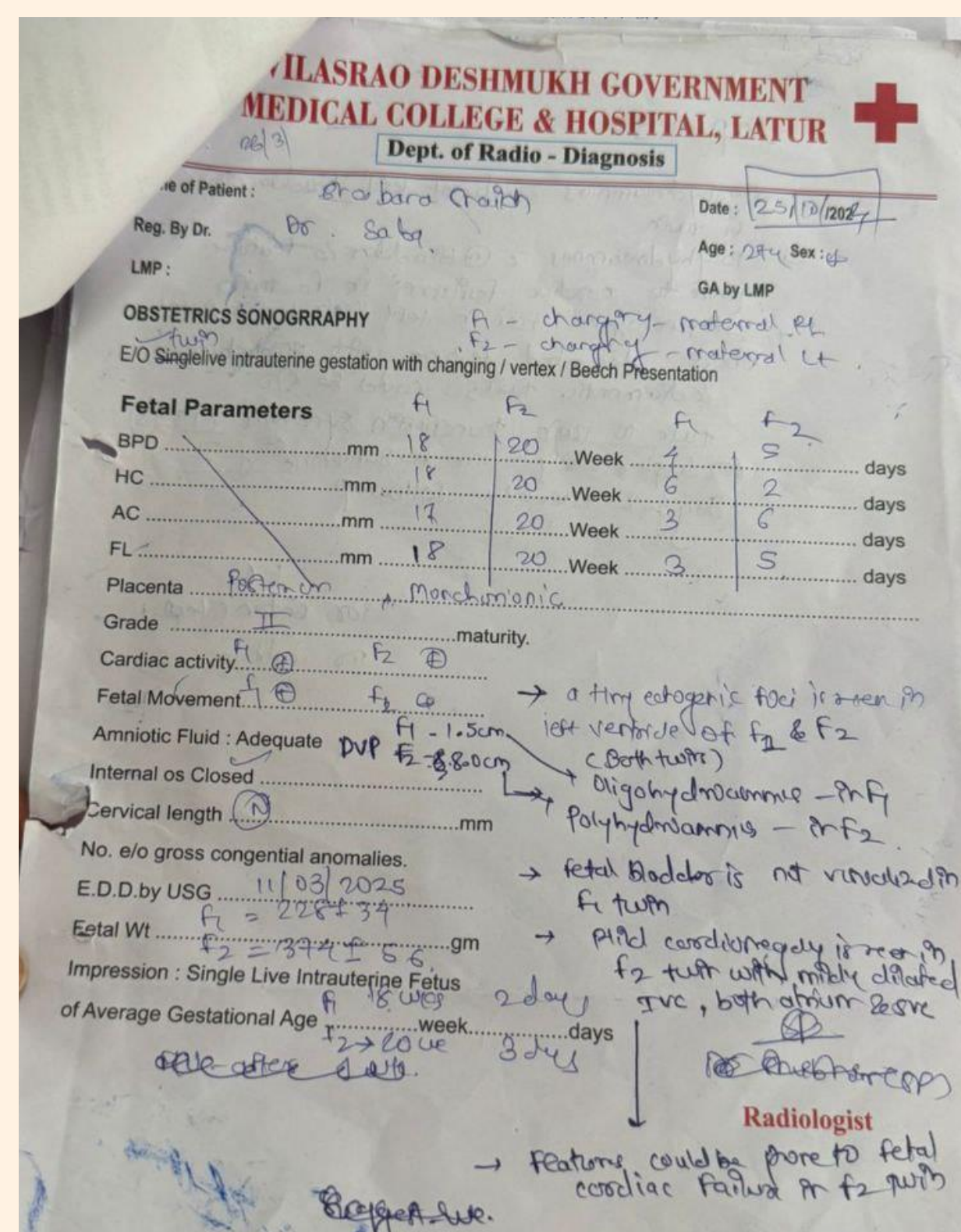
**O/E: GC FAIR
AFEBRILE
P: 88/MIN
BP: 110/70MMHG
RR: 18/MIN
PALLOR +
EDEMA-
ICTERUS-**

**S/E: CVS S1S2+ NO MURMUR
RS AEBE CLEAR**

**P/A: UTERINE HEIGHT UPTO 34-36WKS
MULTIPLE FETAL PARTS FELT
FHS1+ 134/MIN REGULAR
FHS2 + 156/MIN REGULAR
IRRITABLE**

**P/V: CX OS CLOSED
CX OS UNEFFACED**

HB : 8.4 G%



Treatment choice is dependent on the stage of TTTS, but the most common is fetoscopic laser coagulation. Fetoscopic laser coagulation is the destroying of the anastomoses within the placenta, to break the placenta into two distinct regions (Simpson & Miller, 1999). Other treatments include amnioreduction, septostomy, and termination of pregnancy. Amnioreduction is the removal of excess fluid while septostomy is the creating of a hole of the membrane between the twins to equalize the amniotic fluid

DISCUSSION

TWIN TO TWIN TRANSFUSION SYNDROME (TTTS) IS A SPECIFIC COMPLICATION OF MONOZYGOTIC MONOCHORIONIC TWINS RESULTING FROM TRANSFUSION OF BLOOD FROM ONE TWIN TO THE OTHER THROUGH A DEEP, ARTERY TO VEIN PLACENTAL VASCULAR ANASTOMOSIS. SUBSEQUENTLY, THE DONOR TWIN BECOMES ANEMIC, HYPOVOLEMIC, HYPOTENSIVE, AND HYPOPROTEINEMIC. DONOR TWIN UNDERGOES INTRAUTERINE GROWTH RETARDATION, AND OCCASIONALLY DEVELOPS OLIGOHYDRAMNIOS. IN CONTRAST, THE RECIPIENT TWIN IS HEAVIER, POLYCYTHEMIC, HYPERVOLEMIC, AND PACES COMPLICATIONS OF HYPERVISCOSITY OF THE BLOOD SUCH AS HYPERBILIRUBINEMIA, INTRAVASCULAR THROMBOSIS AND CARDIAC FAILURE. THE DEGREE OF SEVERITY OF THE TWIN TRANSFUSION DEPENDS ON THE DURATION OF PREGNANCY, STRUCTURAL ALTERATIONS OF THE VASCULATURE SUCH AS VESSEL CALIBER, QUALITY OF THE ANASTOMOSSES, AND THE PRESENCE/ABSENCE OF VASCULAR COMMUNICATION IN THE OPPOSITE DIRECTION TO COMPENSATE FOR THE HAEMODYNAMIC IMBALANCE, AND CHRONICITY OF TRANSFUSION. SEVERE OLIGOHYDRAMNIOS CAN RESULT IN THE STUCK TWIN PHENOMENON IN WHICH THE TWIN APPEARS IN A FIXED POSITION AGAINST THE UTERINE WALL. TTTS IS ASSOCIATED WITH THE DEATH OF ONE OR BOTH FETUSES IN MORE THAN 70-80% OF UNTREATED PREGNANCIES, PARTICULARLY IF PROBLEMS DEVELOPED BEFORE 28 WEEKS' GESTATION. THE MAIN TREATMENT OPTIONS IN CHRONIC TTTS ARE SERIAL AMNIOREDUCTION AND FETOSCOPIC LASER COAGULATION OF COMMUNICATING VESSELS (FLOC). DATA FROM STUDIES SUGGESTED SURVIVAL RATES FOLLOWING SERIAL AMNIOREDUCTION OF 37-60%, AND TREATMENT BY LASER PHOTOCOAGULATION INCREASES THE SURVIVAL RATE UPTO 55- 73%. THEREFORE ENDOSCOPIC LASER COAGULATION OF ANASTOMOTIC VESSELS SHOULD BE CONSIDERED IN THE TREATMENT OF ALL STAGES OF TTTS TO IMPROVE PERINATAL AND NEONATAL OUTCOME. AMNIOREDUCTION CAN BE RETAINED AS A TREATMENT OPTION FOR THOSE SITUATIONS IN WHICH THE EXPERTISE FOR LASER COAGULATION IS NOT AVAILABLE.

CONCLUSION

THE CASE STUDY DEMONSTRATED THE SUCCESS OF EARLY DETECTION AND PROMPT MEASURES TAKEN TO PREVENT ADVERSE OUTCOMES

TIMELY INITIATION OF PROTOCOLS HENCE PLAY AN IMPORTANT ROLE IN PREVENTING DETERIORATING SCENARIOS.

THE QUINTERO STAGING SYSTEM IS CRUCIAL TO THE DIAGNOSIS, MANAGEMENT, AND TREATMENT OF TWIN-TO-TWIN TRANSFUSION SYNDROME. IT IS IMPORTANT FOR RADIOLOGIST TO DIAGNOSE EARLY

MANAGING TTTS DURING PREGNANCY REQUIRES A MULTIDISCIPLINARY APPROACH, INVOLVING OBSTETRICIANS, MATERNAL-FETAL MEDICINE SPECIALISTS, RADIOLOGISTS, AND NEONATOLOGISTS. WITH CLOSE MONITORING AND SPECIALIZED CARE, IT IS POSSIBLE TO IMPROVE OUTCOMES FOR BOTH TWINS AND REDUCE THE RISK OF COMPLICATIONS

MANAGEMENT

**AFTER SENIOR CONSULTATION, PROPER COUNSELLING DONE TO THE PATIENT AND RELATIVES REGARDING PROGNOSIS OF BABIES AFTER THEIR CONSENT, 1 PCV TRANSFUSED
TERMINATION OF PREGNANCY DONE.
BOTH FETUSES EXPELLED & PLACENTA EXAMINED**