MANAGEMENT OF FETAL ANEMIA BY INTRAUTERINE TRANSFUSION—a Rare Case Report

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Abstract*: Here we report a case of a 29-year-old gravida 3 Para 1 live 1abortion 1patient presenting with a growth scan at 30weeks with Doppler showing MCA PSA Suggestive of foetal anemia and required intrauterine transfusion and Caesarean delivery at 33 weeks.*

Keywords:**Rhesus alloimmunised pregnancy, foetal anaemia, intrauterine transfusion,caesarean delivery, middle cerebral artery doppler**

1. Introduction

Diagnosis of Rhesus factor alloimmunization is made by Indirect coombs test.hemolytic diseases of the fetus are characterized by raid destruction of red blood cells resulting in severe anemia hyperbilirubinemia and severe generalized edema even intrauterine death..The concept of IUT was describe by Liley.non invasive method to detect fetal anemia using middle cerebral artery peak systolic velocity.approximately 97 % of all cases of erythroblastosis fetalis are caused by maternal antibodies against RhD antigen in fetal cells.remaining cases are caused by immunization against other fetal antigenic groups like C,c,E,e,K,k(kell)

CASE REPORT

A 29year G3P1L1A1 outside Booked previous lscs patient with CEDD of 22/07/2024. Regular antenatal visits done at tambaram private hospital.she conceived spontaneously. NT scan was normal anamoly scan was normal her growth scan showed AC more than 90th centile. AFI was 15.4cm, foetal MCA Doppler. At 32 weeks+3 days at MCA PSV was 1.64 MOM suggestive of foetalanaemia and hence referred to our institution for further management. Steroid coverage was done in view of anticipated preterm delivery. ICT Done at SRMC was positive with dilution of 1:64.patient and attenders were counselled about the risks and benefits of intrauterine transfusion.

- Intrauterine transfusion was done strict aspetic precaution inj.vecuronium 1mg was given intramuscularly into foetal quadriceps. 20G spinal needle was inserted into intraadbdominal segment of the fetal umbilical vein under USG guidance. 3cc fetal blood was drawn and sent for CBC, reticulocyte count, bilirubin, fetal karyotype, blood grouping and Rh typing .**Pretransfusion fetal Hb-6.7, Hct-20.7**
- **80ml** of O negative, irradiated, leukocyte depleted, CMV negative, crossmatched with mother's blood was transfused at 5ml/min under USG guidance
- **Post transfusion Hb-14.3, Hct-42.9 and MCA PSV-1.37.post procedure NST was reactive weekly Doppler was done**

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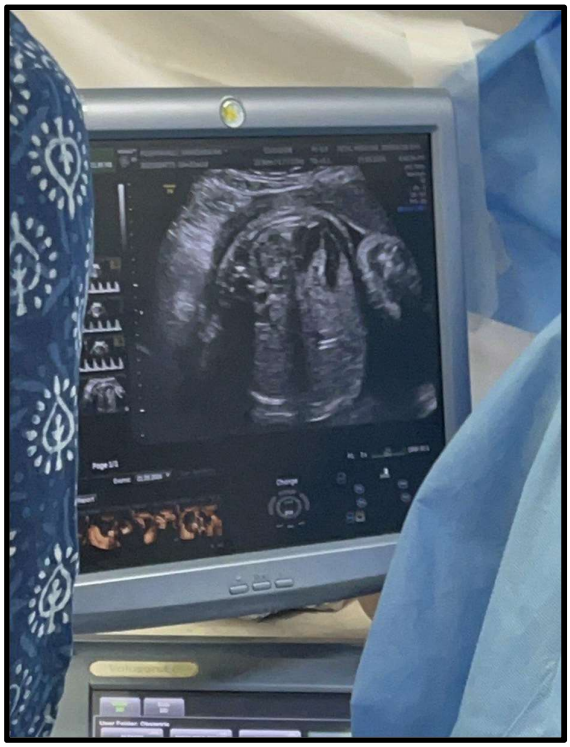
She delivered at 33 weeks, by lower segment cesarean section (in view of previous cesarean section in labour)-male baby, weighing 2 kg. Apgar score at 1 min and 5 min was 8/10 and 9/10, respectively. The intraoperative period was uneventful. The placenta and membranes were delivered in toto. Baby cried at birth. grade 2 Meconium stained liquor noted.Postnatal evaluation of baby showed cord blood bilirubin 6.92mg so double volume exchange transfusion was done.started on triple light phototheraphy on day 1.on day 6 Continuous positive airway pressure ventilation was weaned and started on High flow nasal cannula. Following 1 week of stay in the neonatal intensive care unit, baby and mother were discharged at 12th day of life. Baby on breastfeeds at discharge.

ULTRASOUND FINDINGS



DISCUSSION

Fetal blood sampling is also called cordocentesis or percutaneous umbilical sampling. It was introduced by Daffos in 1963 and dramatically changed the management and therapy of Rh-sensitized patients.31 It is the only definitive means of confirming fetal anaemia by giving a precise measurement of the fetal haematocrit and haemoglobin concentration to determine the need for intrauterine transfusion. During fetal blood sampling and in-utero transfusion, the placental insertion of the umbilical cord is found

using high-resolution ultrasound and colour flow mapping.Then, still under ultrasound guidance, a needle is introduced into the umbilical vein and fetal blood is drawn ton determine the fetal blood group, Rh status, haemoglobin and haematocrit. A haematocrit of less than 30% (Hb-8 g/dl) is an indication for in-utero transfusion. Cordocentesis requires a degree of expertise and has the potential for serious complications, most commonly bleeding, which is normally transient but also feto-maternal haemorrhage,fetal loss (1–2% after 24 weeks gestation), placental abruption, thrombosis of the umbilical vessels, fetal distress and amnionitis. It also allows the adequate assessment before and after transfusion. Cordocentesis carries an increased risk of fetal death that may be as high as 5% if performed before 24 weeks. It can be performed as early as at 16–20 weeks.in-utero transfusion has been performed since 1963 and intravenous in-utero transfusions have now largely replaced intraperitoneal transfusions because they are associated with less procedure-related morbidity and mortality.These will be carried out until 34 weeks gestation. After 34 weeks, the risk of the procedure outweighs the benefits and delivery is preferable if severe anaemia is suspected.In a series of 254 fetuses treated with 740 in-utero transfusions, perinatal death was about 11% (7.4% fetal and 3.9% neonatal), highlighting the complications often associated with this procedure.

CONCLUSION

Early diagnosis and close antenatal surveillance using USG and doppler is a must. Appropriate interventions such as steroid coverage, intrauterine transfusions, and timely termination of pregnancy may prevent severe complications, and perinatal mortality such as the above case can lead to a successful outcome.

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