

Twin-To-Twin Blood Transfusion in Abortuses of a Patient in Jos University Teaching Hospital: A Case Report

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Summary

Twin-twin transfusion syndrome is a rare complication of twin pregnancy. It is commoner in monozygotic twins, and may be associated with hydramnios. It is also associated with increased perinatal morbidity and mortality. We present a case in a 25 year old para 1⁺¹, developed in the second trimester and diagnosed only after the expulsion of the fetuses at about 21 weeks of gestation. Both died because of extreme prematurity. The high index of suspicion, liberal use of ultrasonography starting from early mid trimester of twin pregnancies and appropriate management may improve the fetal outcome where this occurs.

Key Words: Twin Pregnancy, Monozygotic, Donor Twin, Recipient Twin, Jos. [Trop J Obstet Gynaecol, 2006, 23:178-180]

Introduction

Twin-to-twin transfusion syndrome (TTTS) is the result of an intrauterine shunting of blood from one twin (donor) to the other (recipient). It is a recognized in the second and third trimesters, and occurs to a greater extent in monochorionic, monozygotic twins¹. The donor twin is often smaller and anemic at birth; while the recipient twin is usually larger and plethoric at birth. The blood transfusion from the donor twin to the recipient twin occurs through placental vascular anastomoses. Acute polyhydramnios, a common complication occurring with twin-to-twin transfusion, occurs usually remote from term and is associated with a high rate of fetal loss².

Only monochorionic twins are at risk for TTTS, and occurs in 5-38% of these twins^{2,3,4}. Fetal morbidity and mortality depend upon the gestational age of the twins at delivery. The more premature the twins are at birth, the higher the incidence of fetal morbidity and mortality. Fetal demise of one twin is associated with neurologic sequelae in 25% of surviving twins^{3,5-7}.

The case report presents a case of twin-twin transfusion syndrome occurring in the second trimester of pregnancy, developing within a week. It was complicated by acute hydramnios with subsequent loss of the pregnancy. The high index of suspicion in early part of the second trimester, and early diagnosis with Doppler ultrasonography; in addition to appropriate management may improve the fetal outcome.

Case Report

The patient was a 25-year-old housewife of parity 1⁺¹, 1 alive, who presented on 27th April and subsequently delivered on the 29th April 2005. She had been referred to Jos university teaching hospital on account of generalized abdominal pains, polyhydramnios and twin gestation.

She was unsure of her last normal menstrual period, but had had a mid-trimester ultrasound scan at 20 weeks of gestation, with twins. She had noticed sudden and rapid increase in her abdominal size over the past 6 weeks. She could still appreciate fetal movements. There was no history of drainage of liquor or vaginal bleeding.

Examination revealed a young woman who was in painful distress; she was mildly pale but not dehydrated or febrile. There was no pitting pedal edema. The pulse rate was 100 beats per minute, regular and of good volume. Her blood pressure was 120/80 mmHg. The abdomen was shiny, distended, tense and tender. The symphysis-fundal height measured 43cm, and the abdominal girth was 112cm. The fetal parts could not be felt. The foetal heart sounds could only be heard with the aid of a cardio-tocogram. An assessment of polyhydramnios with twin gestation was made. The ultrasound scan was repeated and showed active twins with a thin membrane dividing the amniotic sacs, and a gestational age of 20 weeks and 6 days. The first twin appeared grossly normal for the gestational age while the second twin showed features suggestive of hydrops fetalis. The hydramnios associated with the hydropic twin was massive while the other twin had markedly reduced amniotic fluid volume. The placenta was large for date, single and anterior. Blood was obtained for grouping and cross matching of 2 units of fresh whole blood, packed cell volume and platelet counts as well as serum urea, electrolytes and creatinine. The packed cell volume was 35% and all the other parameters were within normal limits. Her blood group was O Rhesus D Positive. Bedside clotting time was normal. Her retroviral screen was non-reactive.

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Figure 1: Abortuses showing difference in coloration as evidence of twin-twin transfusion



Figure 2: A single placenta with two umbilical cords arising from it



She however went into spontaneous labour within 24 hours of admission and expelled a set of twins that were both male. The first twin weighed 650 grams, was pale but otherwise normal, but died one hour after delivery despite adequate resuscitation. The second twin weighed 705 grams, was plethoric and died within 10 minutes of delivery, figure 1. The placenta was single, large, with areas of infarction and weighed 270 grams, figure 2. The third stage of labour was actively managed. The patient was discharged home after 48 hours of admission in a stable condition.

Discussion

Majority of cases of twin-twin blood transfusion syndrome develop in the second trimester with both twins surviving only in 20% of cases⁸. This reported case developed in the second trimester of pregnancy and became evident at about 20 weeks of pregnancy. The condition co-existed with polyhydramnios, particularly in the recipient twin. She was a referred case to this hospital, had acute polyhydramnios, abortion process started within two hours of admission and expelled the fetuses within 24 hours of admission while investigations were still in progress. Facility for diagnosis of twin-to-twin transfusion with Doppler ultrasonography is not available at the center.

Depending on the extent of vascular shunt, the donor twin develops anaemia, growth restriction and oligohydramnios while the recipient twin becomes plethoric, macrosomic and surrounded by hydramnios⁹.

The outcome of twin-twin transfusion syndrome occurring in the second trimester however is still grim with only one case of successful selective feticide reported in the literature¹⁰.

Twin-twin transfusion may lead to discordancy in the twins, death in utero of the donor twin or death of both twins. Both twins in this case had different weights, the recipient fetus being heavier than the donor by 55 grams at the gestational age of about 21 weeks. This weight difference might have been more if the fetuses were in the third trimester, or at term.

The antenatal diagnosis twin-twin transfusion syndrome by ultrasound is now well documented^{10,11}. The advent of ultrasonography now allows for the antenatal detection and treatment of this complication with new management options like serial amnioreduction, selective feticide of the donor twin and fetoscopic laser ablation of communicating vessels¹². Twin pregnancies need more frequent ultrasound monitoring particularly those shown by an earlier ultrasound to have a common placenta¹³, particularly in the third trimester of pregnancy.

Twin transfusion syndrome could occur in the second trimester and we advocate a raised index of suspicion of twin-twin transfusion syndrome in twin pregnancies particularly coexisting with polyhydramnios, as early diagnosis and prompt and proper management may improve fetal survival and perinatal outcome.

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