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Surviving Twin in a Bicornuate Uterus with Horn-Specific IUFD and Transfusion Incompatibility: A Case Report

ABSTRACT

Twin pregnancy in a bicornuate uterus is rare and associated with significant obstetric risk. We report a 25-year-old G2A1 woman with a DCDA twin pregnancy complicated by pregnancy-induced hypertension, prior cervical cerclage, and horn-specific intrauterine fetal demise at 34+6 weeks. The demised twin was located in the smaller uterine horn, while the surviving twin occupied the dominant horn. Management was further complicated by transfusion incompatibility due to a prior blood transfusion. Emergency caesarean section resulted in delivery of a healthy neonate. This case highlights the importance of anatomy-driven decision-making and anticipation of transfusion challenges in complex twin pregnancies.

Key words: Bicornuate uterus; Twin pregnancy; Dichorionic diamniotic twins; Intrauterine fetal demise; Alloimmunization; Transfusion incompatibility; High-risk pregnancy.

INTRODUCTION

Congenital uterine anomalies result from abnormal Müllerian duct development and are associated with adverse reproductive outcomes.[1] A bicornuate uterus, characterized by incomplete fusion of the Müllerian ducts, accounts for a small proportion of these anomalies and is associated with miscarriage, preterm birth, malpresentation, and placental abnormalities1. Twin pregnancy in a bicornuate uterus is rare, and implantation of each twin in a separate horn further complicates management.[2,3] The occurrence of horn-specific intrauterine fetal demise (IUFD) poses additional maternal and fetal risks,[3,4] particularly in the third trimester. Management is further challenged when transfusion incompatibility is encountered due to red cell alloimmunization.[5] There are no standardized guidelines for such scenarios, and clinical decisions must be individualized. We present a rare case highlighting anatomy-driven management and multidisciplinary preparedness.

CASE PRESENTATION

A 25-year-old woman, gravida 2 abortion 1, presented at 34+6 weeks of gestation with complaints of lower abdominal pain for 24 hours. She had a known bicornuate uterus and a spontaneously conceived DCDA twin pregnancy. Her obstetric history was significant for a first-trimester spontaneous abortion. In the current pregnancy, a cervical cerclage had been placed at six months of gestation in view of cervical insufficiency. She was diagnosed with pregnancy-induced hypertension two weeks prior to presentation and was on oral labetalol. She also had a history of hypothyroidism for seven years, well controlled on levothyroxine. Notably, she had received a blood transfusion four years earlier for an unrelated indication.

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Ultrasonography at presentation revealed intrauterine fetal demise of Twin B at 32 weeks of gestational age, located in the smaller horn of the bicornuate uterus, with features of maceration. Twin A was viable, appropriately grown, and located in the dominant uterine horn, with reassuring fetal heart activity. The placentation was dichorionic diamniotic. Given the gestational age, presence of IUFD, maternal hypertension, and uterine anomaly, the patient was admitted for close monitoring.

Preoperative evaluation revealed blood group B positive. Cross-matching with available blood units across multiple blood banks was unsuccessful, likely due to red cell alloimmunization from prior transfusion. In view of the high risk of hemorrhage, arrangements were made for least incompatible blood in consultation with the transfusion services.

An emergency lower segment caesarean section was performed. Intraoperatively, a bicornuate uterus with asymmetric horns was confirmed. Twin A, a live male neonate, was delivered by breech extraction from the dominant horn (Fig. 1) and shifted to the neonatal intensive care unit for observation. Twin B, a macerated female fetus, was delivered from the smaller horn. The postoperative period

was uneventful. The neonate was observed in the NICU for 72 hours and subsequently discharged in stable condition. The mother had an uncomplicated recovery and was discharged with appropriate follow-up advice.

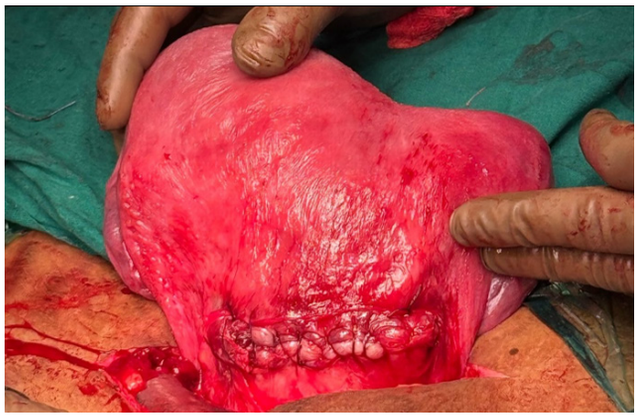

Fig. 1: Intra-operative image showing a bicornuate uterus with asymmetric horns. The larger horn contained the surviving twin, while the smaller horn contained the demised twin.

DISCUSSION

Twin pregnancy in a bicornuate uterus is an uncommon occurrence,[2,3] and implantation in separate uterine horns is even rarer. The reduced distensibility and altered vascularity of the smaller horn may predispose to placental insufficiency and fetal compromise,[3,4] explaining the horn-specific IUFD observed in this case. In contrast, DCDA placentation likely protected the surviving twin[2] from hemodynamic disturbances, contributing to a favorable neonatal outcome.

Management of such cases is challenging due to the lack of standardized guidelines. Decisions must be guided by uterine anatomy, gestational age, fetal condition, and maternal status. In our case, the presence of pregnancy-induced hypertension and prior cervical cerclage further increased maternal risk.

An additional complexity was transfusion incompatibility due to suspected alloimmunization following prior blood transfusion.[5] In high-risk obstetric surgery, anticipation of transfusion challenges and early coordination with blood banks are critical. The availability of least incompatible blood serves as a contingency strategy when fully compatible units are unavailable and can be life-saving in emergencies.

This case underscores the importance of individualized, anatomy-driven management and preparedness for rare but potentially catastrophic complications.

CONCLUSION

Twin pregnancy in a bicornuate uterus represents a high-risk obstetric condition. Horn-specific IUFD further complicates management and necessitates timely intervention. DCDA placentation may confer protection to the surviving twin. Anticipation of transfusion challenges and early surgical decision-making are crucial to optimize maternal and neonatal outcomes.

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