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Amnioreduction in managing twin–twin transfusion syndrome with an artery-to-artery connection: a case report

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Introduction

Monochorionic twin pregnancies pose challenges due to shared placental circulation. Artery-to-artery (AA) anastomoses reduce the risk of twin-twin transfusion syndrome (TTTS). Although fetoscopic laser surgery (FLS) is superior to amnioreduction (AR), the latter may still play a role in 20% of TTTS with AA connections.

Case presentation

A 33-year-old woman G3P2 presented at 23 weeks with stage III TTTS and intermittent absent end-diastolic flow in the donor twin's umbilical artery. The donor had severe growth restriction (< 3rd centile), 34% discordance and a small urinary bladder. Two AR (1 and 1.5 L) were performed a week apart. TTTS regressed to stage I and resolved by 25 weeks, although fluid discordance persisted.

At 32 weeks, an emergency C-section was done due to a non-reactive cardiotocogram in the donor twin. Both twins were liveborn. The donor (900 g) was initially stable but died at 3 weeks from necrotizing enterocolitis. The recipient (1400 g) developed pulmonary hypertension and died on day 3 from pulmonary hemorrhage. Placental examination revealed unequal sharing (*Figure 1*), net AV anastomoses (2.8, 1.2 mm) from donor to recipient and a 2.1 mm AA anastomosis (*Figure 2*).

Conclusion

Although FLS is the gold standard for TTTS, AR may be considered when FLS is unavailable. In this case, an AA anastomosis may have contributed to pregnancy prolongation, though neonatal outcomes remained poor due to prematurity. Larger studies are needed to clarify this association.



Figure1: Unequal placental share (Twin1: Eccentric insertion, Twin 2: Velamentous insertion)

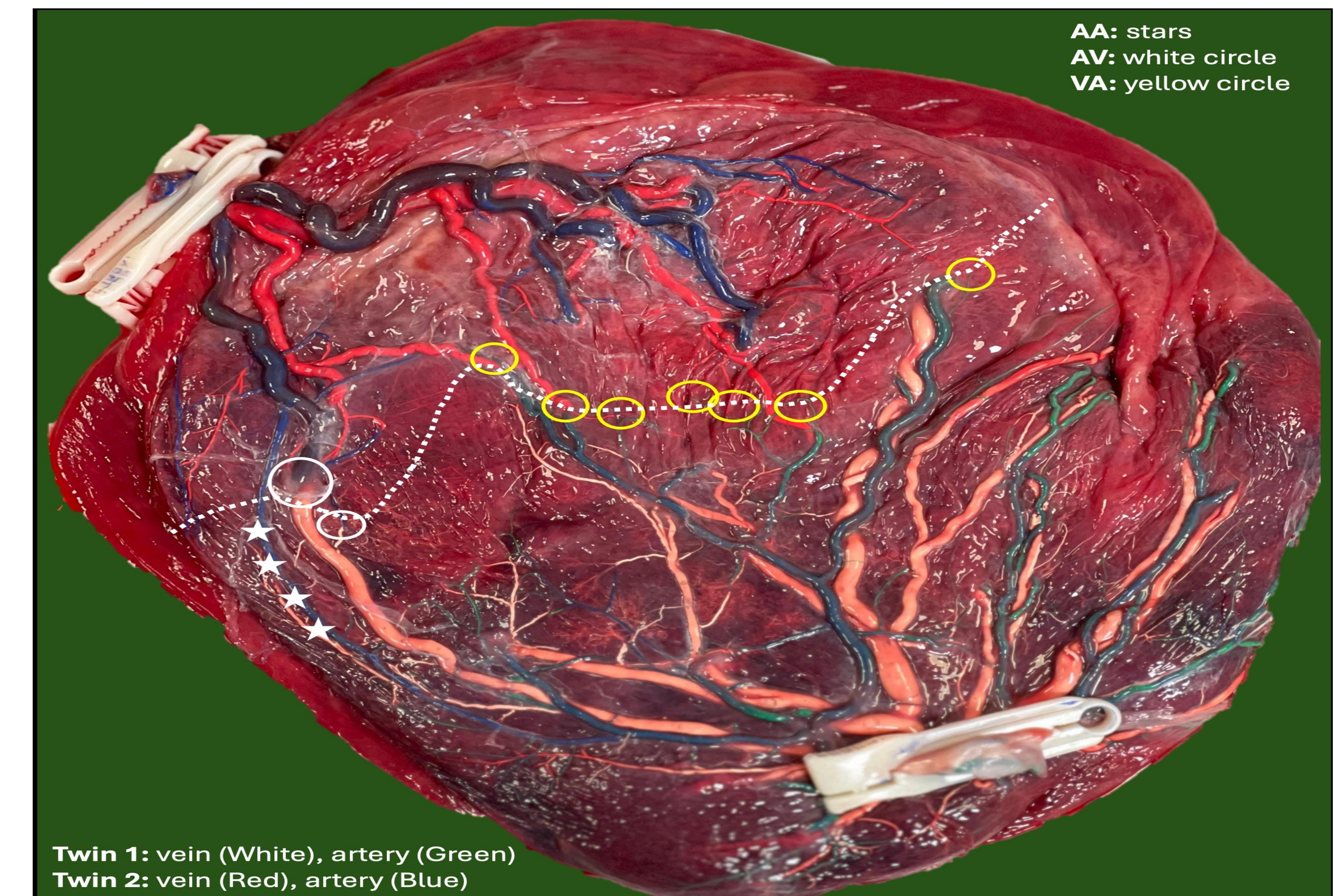


Figure2: AV, and AA anastomoses.