

## **Fetal Diagnosis of Large Systemic Intrathoracic Arteriovenous Fistula with Planned Delivery and Prompt Interventional Therapy**

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After initial diagnosis at 24 weeks gestation by fetal echocardiography, a fetus with a large arteriovenous fistula between the left subclavian artery and the innominate vein was delivered at 34 weeks after flow in the internal jugular veins was noted to be bidirectional, indicating that cerebral blood flow was impaired. The infant weighed 2.55 kg. He developed progressive respiratory distress and metabolic acidosis after arrival in the neonatal intensive care unit. Postnatal echocardiography and subsequent urgent catheterization with angiography confirmed the diagnosis, and demonstrated low diastolic blood pressure consistent with significant “runoff” or “steal” via the fistula. Transcatheter treatment was performed using an Amplatzer Duct Occluder device using the umbilical vessels for access, with the device delivered from the venous side with the retention skirt on the arterial side of the fistula. The acidosis resolved promptly and he was extubated within 48 hours. Left arm pulse and blood pressure after the procedure were normal; there was no evidence of arterial flow disturbance from the device. Head ultrasound was normal. At six months of age the infant is currently doing well. To our knowledge, this is the first report of a prenatally diagnosed large thoracic systemic arteriovenous malformation treated urgently by catheter-based therapy after planned delivery for suspected fetal jeopardy. Accurate fetal diagnosis and close follow-up allowed for appropriately-timed planned delivery and rapid initiation of life-saving interventional therapy.