Fetal diagnosis of anomalous renal vein shunt into Azygos vein

Alvaro Sepúlveda-Martínez¹, Alejandra Marquez², Mauro Parra-Cordero³, Hernan Muñoz¹, ⁴
¹Fetal Medicine Unit, Department of Obstetrics and Gynecology, Hospital Clínico Universidad de Chile, Santiago de Chile, Chile. ²Fetal Medicine Unit, Department of Obstetrics and Gynecology, Clínica Las Condes, Santiago de Chile, Chile. ³Department of Obstetrics and Gynecology, Hospital Clínico San Borja Arriarán, Santiago de Chile, Santiago de Chile, Chile.

Introduction

Azygos vein (AV) is formed at 7 to 10 weeks from LMP, derived from the supra-cardinal system. Renal vein (RV) anomalies are relatively rare, usually detected during adulthood by routine assessments indicated for other symptoms. Although most of these anatomical variations are asymptomatic and with lack of clinical significance, their unknown existence might generate surgery risks like hemorrhage, nephrectomy, and even death.

In this report, we present a case of an anatomic variant of the left RV with AV shunt. Because of this variant, the AV showed a tortuous and dilated shape due to venous congestion.

Case description

A 24-year-old healthy nulliparous woman with a normal 1T and 2T scans. During a routine 3T-US at 27+1 weeks, the presence of AV was identified at 3-vessels trachea view and confirmed at longitudinal view of aorta. No other cardiac or extra-cardiac anomalies were identified.

Follow-up w/ echocardiography (32+2 wks), AV dilatation was observed, with a 2 mm diameter, at expense of a left RV shunt identified with 4Dflow® (Figure). No signs of congestive heart failure was observed. A spontaneous vaginal delivery was assisted at 39+2 weeks of gestation, obtaining a healthy female newborn, birthweight 3,322 grams, with normal APGAR score. At first month of life an abdominal Doppler assessment confirmed the diagnosis of anomalous left RV drainage into AV. A neonatal echocardo and karyotype were performed, both with normal results.

Conclusion

Although venous anomalies are relatively unusual and mostly with a lack of clinical significance, a very detailed understanding of antenatal vascular development is of utmost importance for antenatal diagnosis and follow-up.

Figure. Embrionic origin of Azygos vein (left) and Venal shunt (white arrow) of renal vein into Azygos (right).