A 31-year-old woman was referred for fetal cardiac assessment at 30 weeks of gestation because of fetal arrhythmia and inadequate visualization of the 4-chamber heart at another hospital. Routine scanning demonstrated normal growth, no anomalies, and a normal 4-chamber view; however, the great vessels were inadequately evaluated. Detailed fetal echocardiography was then performed with sequential segmental analysis. Four-chamber view showed a heart of normal size and position, with balanced chambers, intact crux, intact ventricular septum, and normal atrioventricular connections (Figure 1). The ventriculoarterial connections were identified by clear observation of the 2 outflow tract views and ascertainment of the 2 great vessels they connect, as the aorta gives off 3 brachiocephalic vessels and the pulmonary artery trunk is short, with a bifurcation at the distal end. Aorta arising from the right ventricle (Figure 2) and the pulmonary artery arising from the left ventricle (Figure 3) confirmed the diagnosis of transposition of the great arteries. The fetus died 3 weeks later because of serious intrauterine infection. Autopsy was performed and confirmed the diagnosis of transposition of the great arteries. In addition, there was a small perimembranous ventricular septal defect ≈2 mm in diameter that was not detected by fetal echocardiography (Figures 4 and 5). The specimen was dissected, and the ventriculoarterial discordant could be seen clearly.

The autopsy visualization allowed for better understanding of this rare cardiac anomaly and facilitated improving the prenatal diagnostic rate.

Disclosures

None.

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Figure 3. Echocardiogram showing the pulmonary artery (PA) arising from the left ventricle (LV). The main pulmonary artery is short with a bifurcation at the distal end. RV indicates right ventricle.

Figure 4. Autopsy of the fetal heart showing that the heart position is normal with the cardiac apex on the left side. Aorta arises from the ventricle on the right side, and the pulmonary artery is connected with the left-sided ventricle. The pulmonary trunk lies posteriorly and to the left of the aorta. AAO indicates ascending aorta; BCT, brachiocephalic trunk; DA, ductus arteriosus; LCC, left common carotid; LSA, left subclavian artery; LPA, left pulmonary artery; LV, left ventricle; MPA, main pulmonary artery; RPA, right pulmonary artery; and RV, right ventricle.

Figure 5. Autopsy of the fetal heart showing aorta arising from the right ventricle (RV) and the pulmonary artery arising from the left ventricle. A small ventricular septal defect (VSD) can also be found. AAO indicates ascending aorta; LV, left ventricle; and MPA, main pulmonary artery.