OP15.06. Application value of anatomical database in accurate prenatal diagnosis of fetal anomalous pulmonary venous connection

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Introduction

An anatomical cross-section database (ACSD) of common types of total anomalous pulmonary venous connections (TAPVC) was constructed to reproduce the pathological images observed in the corresponding ultrasound images to establish an accurate prenatal ultrasound database of common types of TAPVC.

Materials and methods

From June 2017 to September 2018, anatomical specimens from fetuses with TAPVC were used to establish an ACSD in which a 60-μm thick slices were obtained through the heart and great vessels. The course of the lumen of the common vein (CV) was tracked by continuously displaying the images from the ACSD.

Result

4 cases of common TAPVC from the ACSD were constructed, 2 of them were supracardiac and 2 of them were infracardiac. The entire path of the four pulmonary veins to innominate vein or portal sinus were clearly displayed (Figure 1, A). In fetuses with a suspected supracardiac or infracardiac TAPVC, the course of CV was tracked according to the anatomical characteristics above. At the same time, some color rendering was used to illustrate the long axis of the CV (figure B). During this period, 6 cases of supracardiac TAPVC and 5 cases of infracardiac TAPVC were diagnosed. All of them were confirmed by postnatal echocardiography or postpartum autopsy.

Conclusion

The ACSD can be used for students to master the anatomical characteristics of TAPVC to guide prenatal ultrasound examination methods, and to improve the accuracy of prenatal diagnosis.