

Diagnosis of fetal congenitally unguarded tricuspid valve orifice by echocardiography

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Abstract

[Abstract] Objective To review the imaging characteristics and evaluate the diagnostic value of echocardiography for fetal congenitally unguarded tricuspid valve orifice (CUTVO). Methods Doppler echocardiography was performed and the images were compared with operative and necropsy findings in ten fetuses with CUTVO. The aim of the study was to summarize the characteristics of fetal echocardiography and analyze the causes of missed diagnoses and misdiagnoses. Results There were six cases with complete absence and four cases with partial absence of the tricuspid leaflet. In seven of ten cases the pregnancy was terminated. In six cases CUTVO was confirmed by autopsy after induced labor, while one case had no autopsy. After birth, one case died due to severe illness. The two remaining cases survived with an atrial septal defect and patent ductus arteriosus on postpartum ultrasonic scans. These cases underwent surgical treatment resulting in less moderate tricuspid regurgitation. Among all cases, four were misdiagnosed and diagnosis for CUTVO missed, but CUTVO was demonstrated after induced labor. CUTVO ultrasonographic characteristics consist of the atrioventricular connection with normal arteries and the tricuspid valve device partially or completely absent. The annulus of the tricuspid valve can be describe as “empty” in the apical 4-chamber view, Doppler evaluation shows to-and-fro flow across the tricuspid orifice with low velocity and two-way spectrum. Conclusion diagnosis and differential diagnosis of CUTVO by fetal echocardiography has important clinical value.

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