JCK Oral

JCK Oral 8 (III-JCKO8)
Cardiovascular Imaging

Chair:Keisuke Satou(Department of Cardiology Shizuoka Children Hospital, Japan)
Chair:Seong-Ho Kim(Department of Pediatrics, Sejong General Hospital, Korea)
Sun. Jul 9, 2017 11:05 AM - 11:55 AM ROOM 3 (Exhibition and Event Hall Room 3)

11:05 AM - 11:55 AM

[III-JCKO8-05]Evaluation of tricuspid valve displacement in repaired tetralogy of Fallot using feature tracking magnetic resonance program

○Akio Inage[1], Naokazu Mizuno[2] (1.Division of Pediatric Cardiology, Sakakibara Heart Institute, Japan, 2.Division of Radiology, Sakakibara Heart Institute, Japan)

Introduction: Novel cardiac MRI (CMR) software may provide a simple method to assess right ventricular (RV) myocardial deformation in tetralogy of Fallot (TOF). The objective of this study was to determine correlations between tricuspid valve (TV) displacement and RV function in patients with repaired TOF using CMR.
Methods: We retrospectively analyzed 25 CMR studies in repaired TOF (24+/-8 years). Peak RV longitudinal strain, systolic strain rate (SR) and end-diastolic SR (EDSR) were measured from 4-chambers using cine-based feature tracking MR program. TV displacement was measured at end-systole as the shortest distance between both anterior and septal leaflet hinge points relative to the RV apex. Basal anterior and septal displacement velocities in systole and early diastole were computed. We investigate into correlation TV displacement parameters with RV functional parameters.
Results: Increased anterior and septal distances as decreased shortening correlated positively with RV end-diastolic volume and end-systolic volume, negatively with ejection fraction and longitudinal strain. Decreased basal anterior displacement velocities as greater shortening were associated with improved longitudinal strain, SR and EDSR; however, there were no correlations between basal septal displacement velocities and RV functional parameters.
Conclusion: Decreased TV shortening in systole is associated with larger RV volumes and decreased RV function. Greater anterior displacement velocities in systole and early diastole are associated with improved RV contractility and early filling rate.