JCK Poster

JCK Poster 3 (III-JCKP3)

Fetal and Neonatal Cardiology/Others

Chair:Han Zhang(Department of Cardiology, Shanghai Children's Hospital, Shanghai, China)

Sun. Jul 9, 2017 1:00 PM - 2:00 PM Poster Presentation Area (Exhibition and Event Hall)

1:00 PM - 2:00 PM

[III-JCKP3-04]Assessment of Longitudinal Systolic Ventricular Dysfunction and Asynchrony Using Velocity Vector Imaging in Children With a Single Right Ventricle

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Assessment of ventricular dysfunction and asynchrony is very important in predicting the outcome for children with a single right ventricle. However, the assessment is inaccurate and subjective because of the unusual ventricular shape. This study aimed to evaluate the feasibility and clinical value of velocity vector imaging for assessing longitudinal systolic ventricular dysfunction and intraventricular asynchrony in children with a single right ventricle. The study enrolled 36 children with a single right ventricle and 36 age-matched children with a normal heart. Peak systolic velocity, peak displacement, strain, strain rate, time to peak systolic velocity, and time to peak sys-tolic strain were measured via velocity vector imaging using the Siemens Sequoia C512 echocardiography instrument. The maximum positive rate of ventricular pressure change (Max [dp/dt]) was obtained by cardiac catheterization for all the children with a single right ventricle. In the children with a single right ventricle, the maximal temporal differences and the standard deviations of the times to peak systolic velocity and peak systolic strain were higher (P\0.01) than in the children with a normal heart. Moreover, the strain and strain rate values were significantly lower in all six segments (P\0.05). The strain rate of the basal segment adjacent to the rudi-mentary chamber correlated best with Max (dp/dt) (r = 0.86; P\0.01). Longitudinal systolic dysfunction and intraventricular asynchrony could be assessed accurately using velocity vector imaging in children with asingle right ventricle.