

ポスター | 1-05 画像診断

## ポスター

### 画像エコー

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## [III-P-016]The assessment of the gradient of the myocardial layer strain in single right ventricle after Fontan operation using two-dimensional speckle tracking

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Keywords:Echocardiography, Strain, Myocardial strain gradient

Background: The myocardial layer strain gradient in single right ventricle is not unclear. Purpose: To clarify the gradient of the myocardial layer strain (MLS) in single right ventricle after Fontan operation (FOP) using two-dimensional speckle tracking echocardiography (STE). Methods: 19 patients in single right ventricle after FOP (age:  $8 \pm 2.5$  yrs, HLHS: 10 pts; SRV: 9) were enrolled in this study. We used Vivid 7 or 9 (GE Medical System) and EchoPac (Ver.113) as a PC workstation for assessing the myocardial layer strain with STE. We measured the total layer global circumferential (GCST) and longitudinal strain (GLST) in mid LV short axis image and apical 4ch image. GCS and GLS both in inner and outer myocardial layer (GCSin, GCSout) and ratio of inner and outer layer strain (GCSin/GCSout and GLSin/ GLSout ) were also measured. We compared with left ventricle of 14 healthy children. Result: GCST, GCSin, GSCout, after FOP were markedly decreased, respectively ( $15.1 \pm 3.6$  vs  $22.1 \pm 2.6$ ,  $p < 0.001$ ,  $19.5 \pm 4.5$  vs  $29.8 \pm 3.7$ ,  $p < 0.001$ ,  $12.4 \pm 3.1$  vs  $16.0 \pm 2.4$ ,  $p < 0.01$ ). While, GLST and GLSin were mildly decreased ( $17.6 \pm 4.1$  vs  $20.5 \pm 2.3$ ,  $p < 0.05$ ,  $19.7 \pm 4.3$  vs  $22.6 \pm 2.3$ ,  $p < 0.05$ ). GCSin/GCSout ratio after Fontan was significant decreased ( $1.9 \pm 0.2$  vs  $1.6 \pm 0.2$ ,  $p < 0.001$ ), although, GLSin/GLSout ratio was not different compared with control. ( $1.3 \pm 0.1$  vs  $1.3 \pm 0.1$ ,  $p < 0.001$ ). Conclusion: In single right ventricle after FOP, the aspect of the myocardial strain gradient through ventricular wall is marked different, which may affect ventricular deformation.