

ポスター | 1-05 画像診断

ポスター

画像 MRI②

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II-P-037~II-P-041

所属正式名称:市橋光(自治医科大学付属さいたま医療センター 小児科)

[II-P-039]新しい磁気共鳴アルゴリズムを用いた、体右心室の肉柱と乳頭筋が右室容量に及ぼす影響についての検討

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Keywords:systemic right ventricle, ventricular trabeculations, threshold-based segmentation algorithm

Objective: To assess impacts of the right ventricular (RV) trabeculae and papillary muscles on measured volumes and function in systemic right ventricle by cardiovascular MRI (CMR) using threshold-based segmentation algorithm which excludes these structures in the RV blood volume.

Method: We retrospectively examined two groups of patients. Those in group 1 included tetralogy of Fallot (TOF) as pulmonary right ventricle, and group 2 included congenitally corrected transposition of the great arteries (ccTGA) and D-transposition following an atrial switch procedure (dTGA) as systemic right ventricle. As for both two groups, we measured RV myocardial mass (RV mass), end-diastolic and end-systolic volume (RVEDV and RVESV) and stroke volume (RVSV) by CMR using standard approach and segmentation algorithm.

Results: There was a total of 20 cases (group 1; 10 TOF, group 2; 7 ccTGA and 3 dTGA) and the mean age was 26+/-14 years (group 1; 24+/-15 years, group 2; 27+/-18 years). The RV mass in group 2 was more hypertrophied than it in group 1 with significant differences (101+/-41 g/m² in group 1 vs. 124+/-45 g/m² in group 2, p<0.05). By excluding trabeculae and papillary muscles in the RV blood volume using segmentation algorithm, RVEDV, RVESV and RVSV in group 2 were more decreased than it in group 1 (decreasing rate; 31%, 33% and 21% in group 1 vs. 38%, 40% and 26% in group 2, respectively).

Conclusion: The measured RV volumes and function changed by excluding trabeculae and papillary muscles. The systemic right ventricle was more hypertrophied than the pulmonary right ventricle.