



Imaging

THE COMPARISON OF STROKE VOLUME BY CINE MRI AND PHASE CONTRAST VELOCITY MAPPING

Poster Contributions

Poster Sessions, Expo North

Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Imaging: MRI IV CMR in Valve Disease and Imaging Intracardiac and Vascular Flows

Abstract Category: 19. Imaging: MRI

Presentation Number: 1224-316

Authors: *Takashi Tanimoto, Yuichi Ozaki, Kohei Ishibashi, Takashi Yamano, Yasushi Ino, Tomoyuki Yamaguchi, Kumiko Hirata, Toshio Imanishi, Takashi Akasaka, Wakayama Medical University, Wakayama, Japan*

Background: In the assessment of left ventricular stroke volume, drawing the endocardial contours in short axis slices are difficult at the 1 or 2 most basal slices due to systolic movement of the base towards the apex. This study investigated which basal slices should be included in the assessment of left ventricular stroke volume compared with those of phase contrast velocity mapping.

Methods: In 46 patients with various type of heart disease, the endocardial contours were drawn semi-automatically from left ventricular apex to 3 different basal slices, trace A; circular endocardial contours in both end-diastole and end-systole, trace B; uninterrupted endocardial contour in end-diastole and interrupted endocardial contour by left ventricular outflow tract in end-systole, and trace C; interrupted endocardial contours even in end-diastole. The measured stroke volumes were compared with those of obtained by phase contrast velocity mapping in the ascending aorta.

Results: The stroke volume by cine MRI were 49 ± 13 ml, 58 ± 14 ml, and 65 ± 15 ml in trace A, B and C, respectively. The forward flow in the ascending aorta was 66 ± 18 ml by phase contrast mapping, which showed good agreement only with trace C ($p<0.001$).

Conclusions: The basal short axis slice with outflow tract should be included for tracing in the assessment of left ventricular stroke volume.