

Meeting abstract

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2060 RV dimensions in dilated cardiomyopathy in cine-MRI

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Background

The three-dimensional morphology of the right ventricle (RV) is complex and still not well-understood. Scarce data exists on the involvement of the RV in patients (pts) with dilated cardiomyopathy (DCMP).

Purpose

We hypothesized that the RV in DCMP pts. is initially not dilated and that the RV therefore performs as separate morphological and functional entity in the remodelling process in pts with DCMP.

Methods

100 pts (80 males, age 50 ± 15 yrs) with DCMP were scanned employing a vector-ECG gated multi-slice SSFP sequence using a 5-element phased array coil on a 1.5 T MRI scanner (ACHIEVA). Short axes were planned on true 2- and 4-chamber image planes. LV and RV intraluminal midventricular diameters were measured and compared to previously published SSFP MRI normal values (Hergan, Fortschr Röntgenstr 2004; 176:1599–1606) for LV and RV. The tricuspid anulus plane systolic excursion (TAPSE) as index for RV dysfunction (normal >15 mm) was assessed by measuring the difference of systolic and diastolic distance between the insertion of the apical RV wall into the LV and the base of the lateral tricuspid valve.

Results

The mean LVEF was $37 \pm 14\%$, cardiac output was 5.9 ± 1.6 l/min, LV diastolic wall thickness was 7 ± 1.5 mm in

DCMP vs. 10 ± 1.3 in normals. Whereas end-systolic (53 ± 13 vs. 33 ± 3.6 mm) and -diastolic (64 ± 9.6 vs. 51.6 ± 4.6 mm) LV parameters were significantly enlarged in DCMP, end-systolic (29.3 ± 8.7 vs. 28.1 ± 4.4 mm) and end-diastolic (39.7 ± 8 vs. 37.1 ± 5.9 mm) RV values were similar. TAPSE was normal in DCMP pts (18.3 ± 10 mm).

Conclusion

Cine-MRI is an accurate method to evaluate RV dimensions. Although all DCMP pts. showed dilated LV dimensions and a significantly reduced LVEF, there was no dilatation of the RV in DCMP. This could give rise to the assumption that RV and LV in DCMP perform as separate morphological and functional entities in the remodelling process of DCMP.