

Poster presentation

Prevalence of late gadolinium enhancement in magnetic resonance imaging of patients with left ventricular non-compaction cardiomyopathy

Joerg Wilhelm*, Andreas Rolf, Johannes Rixe, Martina Werle, Thorsten Dill and Christian Hamm

Address: Kerckhoff-Heart-Center, Bad Nauheim, Germany

* Corresponding author

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Introduction

Left ventricular non-compaction cardiomyopathy (LVNC) is a comparatively rare finding which has similar morphological features in cardiac magnetic resonance imaging (cMRI) as those found in other myocardial disorders.

Purpose

The purpose of our study was to define additional morphological criteria to the already known non-compaction/compaction ratio described by Jenni et al..

Methods

14 patients (11 male, average age 37 years) with positive Jenni-criterion for LVNC in echocardiography underwent cMRI (Siemens Sonata 1.5 T). Cine TruFISP, TSE T1- (pre and post contrast Early Gadolinium Enhancement ratio (EGEr) according to Friedrich et al. 1998) and T2-weighted images (Edema Ratio (ER - myocardial signal intensity (SI)/skeletal muscle (SI)) were acquired as well as additional late gadolinium enhancement images (LGE) after administration of 0.2 mmol gadodiamide per kg body weight. LGE was deemed as either being present or not.

Results

Mean EF 45% (± 18), EDV 174 (± 88)ml and ESV 107 (± 95)ml, Early Gadolinium Enhancement ratio and Edema Ratio had no pathological results in none of the patients (T1 = EGEr $3,2 \pm 1.6$, T2 = ER 1.6 ± 0.7). 6 patients had

LGE and 8 patients had a limited left ventricular ejection fraction. In patients with heart failure 50% showed LGE, in patients with regular LV-function 30% showed LGE. LGE had a subendocardial cougar like pattern. 3 patients showed a circumpunct non-compacted myocardium, 3 patients achieved Jenni-criterion in only one axis-view (long axis or short axis) despite having severely limited ejection fraction, of those 2 had the typical LGE. In 11 patients the whole apex or more than half of left LV-cavity-circumference was concerned. In one case a biventricular affection was found.

Conclusion

CMR is well applicable for detection of LVNC. LGE might be an additional criterion for diagnosing LVNC in patients with circumpunct positive Jenni criterion, it seems to define a subgroup with more severely limited LV-EF.