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Reply: Value of Cardiac Magnetic Resonance Imaging in the Diagnosis of Noncompaction of the Ventricular Myocardium

We appreciate the comments of Stöllberger and Finsterer regarding our case report. We present a case in which multiple imaging modalities were used to reach a diagnosis and suggest the assessment of trabecular mass by CMRI as potentially valuable diagnostic parameter. We note that a comprehensive review of noncompaction of the ventricular myocardium (NVM) has recently been published (Weiford et al., 2004).

We agree that NVM has not been proven to be due to intrauterine arrest of myocardial compaction, although this remains a widely accepted theory (Weiford et al., 2004). The majority of patients have depressed LV systolic function. We agree that hypokinesia is not uniformly present, and that long-term studies have not demonstrated an inexorable progression to heart failure (Weiford et al., 2004). There is significant observational evidence that NVM is associated with an increased rate of thromboembolism. The occurrence of thromboembolic events in three separate groups of patients ranged from 21% to 38%—greater than that seen in idiopathic dilated cardiomyopathy (Chin et al., 1990; Oechslin et al., 2000; Ritter et al., 1997).

We suggest that echocardiographic criteria ''could easily be adopted'' for use in CMRI, a viewpoint similar to that put forward recently by McCrohon et al. Unfortunately the study of CMRI in NVM cited by Stöllberger and Finsterer was not readily obtainable for our review (Weiss et al., 2003). We have addressed the limitations in the assessment of trabecular mass by CMRI but should also note that flow artefacts are substantially reduced with steady state free precession imaging, as compared with gradient echo techniques. In accordance with published techniques we used contiguous short axis slices of 8-mm with 2-mm gaps to assess the entire LV (Pennell, 2002).

Our patient has normal CK levels and no clinical features of a neuromuscular disorder. He is currently NYHA Class II, is receiving appropriate heart failure therapy, and is on the ''inactive'' cardiac transplant list. Ultrastructural investigation of the myocardial biopsy was not performed. Neither echocardiography nor CMRI perfusion imaging were performed in the 10 patients with dilated cardiomyopathy.

The application of CMRI to the assessment of less common cardiomyopathies is an important area of research. Recent studies using CMRI have demonstrated an incremental diagnostic benefit over echocardiography in areas as diverse as the detection of LV thrombus (Mollett et al., 2002) and apical hypertrophic cardiomyopathy (Moon et al., 2004). However, we agree that studies in larger cohorts of patients are needed before CMRI can be recommended as the noninvasive imaging study of choice for the diagnosis of NVM.

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