Isolated Noncompaction of the Myocardium
To the Editor:

McCrohon and colleagues\(^1\) present a case of isolated ventricular noncompaction (IVNC) diagnosed by magnetic resonance (MR) imaging. They suggest that MR may improve the detection rates of IVNC as, in their case, the diagnosis would have been missed if only echocardiography had been used. Cardiac ultrasound, previously performed in their case, had shown no significant abnormalities.

It is correct that this disease is not widely known, and, as a consequence of ignorance, its diagnosis is frequently missed. To facilitate its diagnosis, we have recently established 4 clear-cut echocardiographic diagnostic criteria,\(^2\) namely: (1) absence of coexisting cardiac abnormalities; (2) a 2-layered structure of the left ventricular wall, with the end systolic ratio of noncompacted to compacted layer \(>2\); (3) finding this structure predominantly in the apical and mid-ventricular areas; and (4) blood flow directly from the ventricular cavity into the deep intertrabecular recesses as assessed by Doppler echocardiography. This study\(^2\) clearly demonstrated that IVNC can be accurately diagnosed by echocardiography, as we validated our results against pathological-anatomical preparations. Although MR imaging may also be helpful, no diagnostic criteria have yet been proposed.\(^3\) Furthermore, as is the case for echocardiography, MR imaging also necessitates experienced operators.

The MR images of the present case show multiple intertrabecular recesses. We are surprised that a skilled echocardiographer would miss the diagnosis in ultrasound, particularly if he had previous experience of such conditions. Furthermore, the corresponding left ventricular angiogram might have given an additional hint, as this has been demonstrated to be indicative in another previously published report.\(^4\)

We conclude that echocardiography currently remains the gold standard for the diagnosis of IVNC, at least when performed by experienced investigators.

Bernd van der Loo, MD
Rolf Jenni, MD, MSEE
Echocardiography, Cardiovascular Center
University Hospital Zurich
Zurich, Switzerland
karjer@usz.unizh.ch


Response

We accept that the data thus far available on isolated ventricular noncompaction (IVNC) is derived from echo series and we welcome the echo classification. Nevertheless, in this particular case study,\(^1\) the echo (even on subsequent review and further acquisitions) was unable to clearly document the abnormality. As mentioned in the case report, the echo only revealed upper limit of normal wall thickness, and the ventriculogram failed to show any abnormality in the inferior wall, where most of the intertrabecular recesses reside.

The case we presented is not a florid example of IVNC and makes the point that cardiovascular magnetic resonance (CMR) may enhance the detection of more subtle forms of noncompaction that may or may not progress with time. The provision of formal diagnostic criteria using CMR will require further study, along with heightened awareness of the potential of new imaging techniques to define earlier and/or more subtle forms of pathology.

There is little reason to expect that CMR diagnostic criteria will differ significantly from echo criteria, although as this example suggests, CMR techniques may provide the ability to detect a broader spectrum and more subtle variants of noncompaction.

Jane McCrohon, FRACP, PhD
Department of Cardiology
St George Hospital
Sydney, Australia

Dudley Pennell, FRCP, MD
Raad Mohiaddin, FRCR, PhD
Department of Cardiovascular Magnetic Resonance
Royal Brompton Hospital
London, UK

David Richmond, MBChB, MSc, FRACP
Royal Prince Alfred Hospital
Sydney, Australia

Isolated Noncompaction of the Myocardium
Bernd van der Loo and Rolf Jenni

Circulation. 2003;107:e50
doi: 10.1161/01.CIR.000005539.05437.F6
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2003 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/107/7/e50

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation is online at:
http://circ.ahajournals.org/subscriptions/