Two patients, a 67-year-old man (patient 1) and a 72-year-old woman (patient 2), presented with sudden onset chest pain after significant emotional stress. Patient 2 also had acute pulmonary edema on presentation. An ECG showed ST elevation in the precordial leads, and the patient’s cardiac enzymes were elevated. A coronary angiogram showed no flow-limiting lesions. A left ventriculogram demonstrated the typical pattern of apical ballooning syndrome with basal hypercontractility and apical akinesis (Figure, A, and Movie I). The diagnosis of apical ballooning syndrome was made in both cases.

A transthoracic echocardiogram in patient 1 showed hypodynamic basal segments and mild upper septal hypertrophy with systolic anterior motion (SAM) of the mitral valve resulting in moderate left ventricular outflow tract (LVOT) obstruction (LVOT velocity, 3.7 m/s) (Figure, B and D). There was severe functional mitral regurgitation (MR) (Figure, C). Patient 2 had similar test results, with SAM of the mitral valve, moderate LVOT obstruction of 3.1 m/s and severe MR (Movies II and III).

Repeat echocardiograms at 2 to 4 months after initial presentation showed normal LV function and resolution of the LV wall motion abnormalities. Interestingly, residual SAM of the mitral apparatus without significant LVOT obstruction was found on the resting echocardiograms of both patients (Figure, E and F, and Movies IV and V). There was no residual MR.

The pathophysiology of apical ballooning syndrome is not fully understood. In our 2 cases, underlying SAM predisposed the patients to the development of LVOT obstruction and dynamic MR in the context of apical ballooning syndrome. The use of inotropes in this situation would be likely to worsen the LVOT obstruction and MR and should be avoided. Chronic β-blocker administration may ameliorate the degree of LVOT obstruction and consequent adverse hemodynamics in future presentations.

Disclosures

None.

From the Department of Cardiology, Middlemore Hospital, Auckland, New Zealand.
The online-only Data Supplement, which contains Movies I through V, is available with this article at http://circheartfailure.ahajournals.org/cgi/content/full/1/1/84/DC1.

(Circ Heart Fail. 2008;1:84-85)

© 2008 American Heart Association, Inc.

Circ Heart Fail is available at http://circulationheartfailure.ahajournals.org

DOI: 10.1161/CIRCHEARTFAILURE.107.756585
Figure. A, Left ventriculogram of patient 1 showing the typical pattern of apical ballooning syndrome. Transthoracic echocardiogram in patient 1 at admission showing SAM of the mitral valve with LVOT obstruction (B) and severe MR (C). D, Continuous-wave Doppler profile outlining the degree of LVOT obstruction. The recovery echocardiogram 8 weeks later showed nonobstructive SAM (E) and resolution of the MR (F).
Resting Systolic Anterior Motion of Mitral Valve Apparatus: Association With Apical Ballooning Syndrome
Andrew C.Y. To, Ali A. Khan, Patrick Kay and Andrew J. Kerr

Circ Heart Fail. 2008;1:84-85
doi: 10.1161/CIRCHEARTFAILURE.107.756585
Circulation: Heart Failure is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2008 American Heart Association, Inc. All rights reserved.
Print ISSN: 1941-3289. Online ISSN: 1941-3297

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circheartfailure.ahajournals.org/content/1/1/84

Data Supplement (unedited) at:
http://circheartfailure.ahajournals.org/content/suppl/2008/05/20/1.1.84.DC1

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation: Heart Failure 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: Heart Failure is online at:
http://circheartfailure.ahajournals.org//subscriptions/