A 59-year-old man was admitted with mild dyspnea on exertion and prior radiographic evidence of cardiac enlargement. His medical history was unremarkable. On physical examination, grade 4 to-and-fro murmur was heard over the left sternal border. ECG showed normal sinus rhythm with left ventricular (LV) hypertrophy. Two-dimensional transthoracic echocardiography in the 3-chamber view showed dilation of the proximal right coronary artery (RCA) (Figure 1A; Movie I). Color Doppler imaging of transthoracic echocardiography in the apical 4-chamber view revealed abnormal turbulent flow originating just beneath the lateral aspect of the mitral annulus at diastole (Figure 1B; Movie II). At selective right coronary angiography with a pigtail catheter, a markedly dilated, tortuous RCA drained into the posterior aspect of the LV through a large fistula (Figure 2; Movie III). Three-dimensional volume-rendering images of enhanced ECG-gated 64-multislice computed tomography showed a hugely enlarged RCA terminating abruptly without distal branching, suggesting an RCA-to-LV fistula (Figure 3).

Coronary artery fistula is a rare congenital anomaly with an incidence of 0.1% to 0.2% in the adult population.1 Congenital coronary ventricular fistula, especially where the RCA communicates with the LV, is extremely rare, and large communications represent a hemodynamic burden.2 Because of the increased blood flow, the involved coronary artery is dilated, tortuous, and often aneurysmal. A large and hemodynamically significant fistula should be closed by surgical ligation.3 Surgical treatment was suggested for this patient to prevent complications such as spontaneous rupture, heart failure, myocardial ischemia, and thrombotic and embolic events.

Disclosures

None.

References


Key Words: coronary artery fistula ■ multislice computed tomography
Figure 2. Selective right coronary angiography showed a huge dilated, tortuous RCA draining into the posterior aspect of the LV through a large fistula (indicated by arrow).

Figure 3. Three-dimensional volume-rendered CT images provide arbitrary optimal views of the spatial orientation and dimension of the huge dilated, tortuous RCA draining into the posterior aspect of the LV through a large fistula.
Giant Right Coronary Aneurysm to Left Ventricular Fistula
Seok-Min Kang, Joo Hoon Kim, Jaewon Oh, Chi Young Shim and Byoung Wook Choi

doi: 10.1161/CIRCIMAGING.108.805093
*Circulation: Cardiovascular Imaging* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2009 American Heart Association, Inc. All rights reserved.
Print ISSN: 1941-9651. Online ISSN: 1942-0080

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circimaging.ahajournals.org/content/2/3/e15

Data Supplement (unedited) at:
http://circimaging.ahajournals.org/content/suppl/2011/06/20/2.3.e15.DC1

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Circulation: Cardiovascular Imaging* 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: Cardiovascular Imaging* is online at:
http://circimaging.ahajournals.org//subscriptions/