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 1). 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 1. Two-dimensional transthoracic echocardiography in the 3-chamber view (A) revealed dilation of the proximal RCA (indicated by arrow). Color Doppler imaging in the apical 4-chamber view (B) demonstrated abnormal turbulent flow originating just beneath the lateral aspect of the mitral annulus.
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
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