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A Case of Giant Right Coronary Aneurysm to Left Ventricular Fistula

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The coronary artery aneurysms(CAA) are not common and giant coronary artery aneurysms are rare. Clinical presentation, prognosis and management of giant CAA are not well defined due to limited experience. Therefore, we report a case of giant right CAA to left ventricular fistula and significant aortic regurgitation, successfully treated by surgical correction. A 56-year-old male was visited outpatient clinic with exertional dyspnea. He had no cardiovascular risk factor. Initial blood pressure was 122/51mmHg, pulse rate 62bpm, respiration rate 18 per minute, and body temperature 36.1℃. His ECG showed normal sinus rhythm with LV hypertrophy. Chest radiography showed cardiomegaly with lobulating contour of right cardiac border. Echocardiography showed LV dilatation, moderate to severe aortic regurgitation, dilated coronary sinus and huge hypoechoic mass(79x55mm) compressing right side heart, which was connected to coronary sinus and RCA ostium. Cardiac CT angiography showed dilatation of ascending aorta and huge aneurysmal dilatation of the right coronary artery with coronary artery to LV fistula. Coronary angiogram showed huge aneurysmal dilatation of RCA with fistula into left ventricular cavity. The patient underwent surgical correction for aortic regurgitation and right giant coronary artery aneurysm with fistula. Follow-up CT angiogram showed good post-operative state of Bentall procedure, obliteration of RCA aneuysm and no visible fistula to left ventricle. Patient's symptom was dramatically improved after open heart surgery. Coronary artery fistula is rare congenital anomaly and congenital coronary-ventricular fistula, especially where the RCA communicates with the LV, is extremely rare. The involved coronary artery is dilated, tortuous, and often form aneurysmal change. Because of hemodynamic burden, a large fistula with giant CAA should be corrected by surgery. Surgical treatment was suggested for this patient to prevent complications such as spontaneous rupture, compression of surrounding structure. In comparison with previously reported cases, our case has a more complex anatomic abnormality, which was successfully treated by surgical correction.

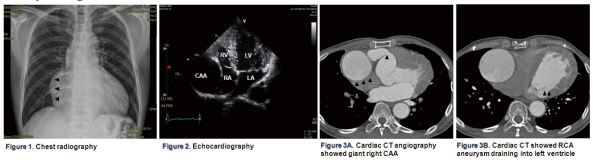

Figure 1. Chest radiography

Figure 2. Echocardiography

Figure 3A. Cardiac CT angiography showed giant right CAA

Figure 3B. Cardiac CT showed RCA aneurysm draining into left ventricle

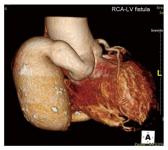

Figure 3C. 3D reconstuction image of giant right coronary artery aneurysm

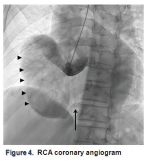

Figure 4. RCA coronary angiogram

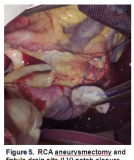

Figure 5. RCA aneurysmectomy and fistula drain site (LV) patch closure

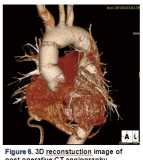

Figure 6. 3D reconstuction image of post-operative CT angiography