A rare cause of angina: multiple coronary cameral fistulae simulating coronary artery disease in a 71-year-old man

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DESCRIPTION

A 71-year-old man, with known diabetes and hypertension presented with angina on exertion. His ECG was normal. Echocardiography showed normal left ventricle (LV) systolic function. His exercise stress test was positive. He was suspected to have coronary artery disease. Hence coronary angiography was performed which showed no significant atherosclerotic lesion in the coronary arteries. However, the left anterior descending artery (LAD; figure 1 and video 1) and right ventricular branch of the right coronary artery (RCA) was seen communicating with the right ventricular (RV) cavity through many small, diffuse fistulae resulting in RV contrast opacification (figure 2 and video 2). The coronary sinus appeared to be of normal size. His angina was attributed to the ‘coronary steal’ phenomenon.

Coronary artery fistula is an abnormal connection between the coronary artery and either a cardiac chamber (coronary cameral fistula) or a vein (coronary arteriovenous fistula). The incidence of coronary artery fistula is 0.1%. Coronary-cameral fistulae are mostly congenital and probably related to normally observed thebesian veins that carry postcapillary coronary artery blood to the cardiac chambers. Major sites of origin are RCA (55%) followed by the left coronary artery (35%). Multiple fistulae arising from both coronary arteries are rare (5%). Major termination sites include the RV (40%), RA (26%), pulmonary arteries (17%) and less frequently in the superior vena cava, coronary sinus and very rarely in the LA or the LV. The haemodynamic consequence depends on the site of origin, termination and the size of connection. Symptoms develop mostly in the fourth to sixth decade of life. Myocardial ischaemia may be a result of coronary steal or spontaneous intrapericardial rupture. Depending on the size and location of

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Figure 1 Right anterior oblique cranial view of left coronary angiogram showing multiple channels arising from the distal left anterior descending artery (LAD) and septal branches of the proximal LAD opacifying the right ventricular cavity.

Figure 2 Cranial view of the right coronary angiogram showing multiple channels arising from the right ventricular (RV) branch of the right coronary artery opacifying the RV cavity.
the fistula, epicardial and endocardial surgical ligation or percutaneous endoluminal embolisation may be performed. Intervention is difficult when fistulae are diffuse; therefore despite ischaemia in our case percutaneous intervention was not performed.3

What makes this case unusual is that the patient presented in the eighth decade of life having been relatively asymptomatic until then. Moreover, the presence of multiple coronary cameral fistulas in the same patient is extremely rare.

**Learning points**

▸ Coronary cameral fistula is a rare but important differential diagnosis in a patient presenting with angina.
▸ They usually present in the fourth to sixth decade of life but can occasionally present later in life.
▸ Cameral fistulae are usually single but rarely multiple fistulae may be found in the same patient.

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**Patient consent** Obtained.

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**REFERENCES**