Coronary artery-middle cardiac vein fistula after endomyocardial biopsy in a heart transplant patient

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A 62-year-old man underwent an orthotopic heart transplantation in 2003 for severe valvular cardiomyopathy with end-stage heart failure. The transplantation was successful and the patient remains free of symptoms. The routine post-transplantation follow-up was uneventful. However, the final coronary angiography in 2008 showed a fistula between the posterior descending artery (PDA) originating from the left circumflex coronary artery (LCX) and the middle cardiac vein (MCV) (Figure 1 and Video 1 show the right anterior oblique cranial view; CS indicates coronary sinus). At physical examination, no systolo-diastolic murmur could be heard on the precordium. The fistula was not present in the previous coronary angiography in 2005. A review of the patient's previous endomyocardial biopsy specimens showed the presence of a small calibre artery (300 µm to 400 µm in diameter), emphasizing the relationship between the biopsies and this fistula. Figure 2 is a Movat colouration showing the internal and external elastic membrane, confirming that the vessel corresponded to an artery.

Acquired coronary artery fistula is a well-known complication of endomyocardial biopsies with an incidence of up to 8%; such fistulas

are only seen in 0.2% of the general population (1). Almost all acquired coronary artery fistulas have been described between the right or left coronary arteries and the right ventricle. Very rare cases involving the cardiac veins have been described (2). Most cases are clinically silent and of no hemodynamic significance. Spontaneous regressions have been reported, and in the absence of symptoms, no therapy is usually recommended. However, percutaneous treatment may be offered if symptoms or significant hemodynamic effects develop (3,4).

Figure 1

Figure 2

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