Coronary Artery Fistula After Cardiac Transplantation

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A 68-year-old man with ischemic cardiomyopathy underwent heart transplantation in 2007. A routine endomyocardial biopsy done 4 weeks after transplantation reported 2 arterial branches (Figure 1). Physical examination did not reveal a murmur. Echocardiogram did not show a pericardial effusion. Coronary arteriogram 4 months later showed a left anterior descending artery-to-right ventricle fistula (Figure 2 and Movie I in the online-only Data Supplement). Right-sided pressures were normal and there was no significant step-up in oxygen saturations from the right atrium to the right ventricle or pulmonary artery. Four years later, the fistula has enlarged in size (Figure 3 and Movie II in the online-only Data Supplement), but the patient has normal right-sided pressures and cardiac output, and remains asymptomatic.

Cardiac transplantation is an effective therapy for end-stage heart failure. Rejection is a common problem after transplant, and most patients undergo repeated endomyocardial biopsies to detect rejection. Complications from endomyocardial biopsies are infrequent, but include coronary artery-to-right ventricle fistulas and tricuspid regurgitation. We hypothesize that the fistula developed during the biopsy that showed 2 arterial branches. Coronary artery fistulas are more common in the transplant population compared with the general population (5%–8% vs 0.2%). Most fistulas are asymptomatic and are discovered accidentally during the course of surveillance angiograms. If they are large, they may cause angina, dyspnea, and right-sided heart failure. In these cases, treatment can be surgical or percutaneous with a covered stent. Most patients with fistulas, however, continue to do well without specific therapy and can be managed conservatively.

Disclosures

None.

References


Figure 1. (A) Endomyocardial biopsy specimen shows 2 arterial branches. (B) Elastic Van Gieson stain demonstrates internal and external elastic lamina demarcating a thick media, consistent with artery.
Figure 2. Left anterior descending artery-to-right ventricle fistula 5 months after transplant.

Figure 3. The fistula has enlarged in size 4 years later.
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Circulation. 2012;126:2144-2145
doi: 10.1161/CIRCULATIONAHA.112.115519

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