Percutaneous Intervention to Large Left Anterior Descending Artery Fistula Post–Right Ventricular Biopsy in a Transplant Recipient

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Endomyocardial biopsy through the right internal jugular vein is the gold standard to screen for rejection in orthotopic heart transplant recipients (1). Complications associated with the procedure are mainly related to vascular access; however, coronary artery fistulae to the right ventricle are rare and have been anecdotally described (2–4). Coils and Amplatzer plugs (St. Jude Medical, St. Paul, Minnesota) have been used to achieve closure in congenital fistulae (2,3); however, in the much larger diameter iatrogenic fistulae there has been 1 case described in which covered stents were used for closure (4). We describe a case of a large left anterior descending descending fistula to the right ventricle...
post-endomyocardial biopsy that was successfully closed using percutaneous coronary stenting.

A 44-year-old woman underwent orthotopic cardiac transplantation in 2011 for end-stage heart failure due to anthracycline-induced cardiomyopathy in the context of breast cancer. During screening, endomyocardial biopsy via the right internal jugular approach, she developed a large left anterior descending fistula in the mid to distal segment draining into her right ventricle (Figure 1). There was a significant shunt as a consequence, resulting in echocardiographic features of right ventricular strain and a stress echocardiogram performed demonstrated significant inducible ischemia in her anterior myocardial wall.

The decision was made to attempt percutaneous closure of this hemodynamically significant fistula, and the procedure was performed using the right femoral approach with a 7-F Extra Back up guiding catheter to cannulate the left main coronary artery. A bare-metal wire and an extra support wire were placed in the distal left anterior descending artery. At this time, intravascular ultrasonography and ChromoFlo intravascular ultrasonography were used to better visualize the ostium of the fistula and for accurate sizing of the vessel for stenting (Figures 2 and 3). The distal vessel measured 2.7 mm just distal to the fistula. The vessel proximal to the fistula measured 3.8 × 4.4 mm.

A 2.8 × 19 mm Graftmaster covered stent (Abbott Vascular, Abbott, Abbott Park, Illinois) was placed at the fistula os, but due to residual flow from the distal segment, a second 2.8 × 19 mm stent was placed distally to the fistula. Both stents were post-dilated with a 4-mm non cutting balloon to high pressure. There remained some proximal entry into the stent extra luminal plane with flow into the fistula so a third 4.5 × 16 mm stent was placed proximally with excellent closure result achieved (Figure 4).

**REFERENCES**


