

Management of a single coronary artery aneurysm by use of a stent

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A 36-year-old man is described with aneurysmal coronary artery disease successfully treated with a Jostent covered stent. This technique obviates the need for surgical exclusion or ligation of the aneurysm.

A 36-year-old man with severe hypercholesterolemia presented with typical angina pain for 1 to 2 weeks. A stress echocardiogram reproduced his chest discomfort and demonstrated 2 mm of ST depression and anteroapical hypokinesis. Coronary angiography demonstrated a 15-mm aneurysm of the proximal left anterior descending artery (LAD) (*Figure 1*) as well as significant stenosis of the LAD immediately proximal and distal to the aneurysm.

An 8F Cordis XBLAD 3.5 coronary guide was used to cannulate the left coronary system, and a 0.014" ATW marker wire was used to wire the LAD. Intravascular ultrasound, used to better evaluate the width of the aneurysm as well as the vessel lumen on either side, revealed that the stenosis proximal to the aneurysm was severe, and so it was predilated with a 2.5 × 20-mm Maverick balloon to facilitate deployment. A 2.75–5.0 × 26-mm Jostent coronary stent graft was hand-crimped onto a 3.5 × 40-



Figure 1. Coronary angiogram demonstrating a 15-mm aneurysm of the proximal LAD.

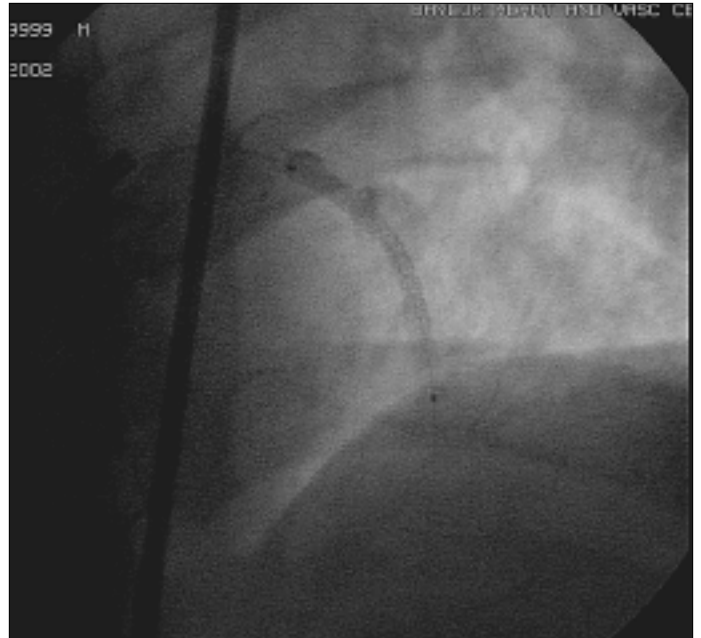


Figure 2. Hand-mounted Jostent placed across the aneurysm of the proximal LAD. Residual contrast outlines the lumen of the aneurysm.

mm Crossail (Guidant Corp, Tamecula, Calif) balloon catheter. The balloon was inflated to approximately 2 atm to prevent slippage of the stent. The stent/balloon was deployed, with the ends of the stent extending beyond the aneurysm (*Figure 2*). The stent was then deployed at high pressure. A 4.0 × 23-mm Powersail balloon (Guidant Corp, Tamecula, Calif) was used to postdilate the stent. Immediately proximal to the covered stent was a significant residual stenosis, which was stented with a 4.0 × 13-mm Penta stent (Guidant Corp, Tamecula, Calif).

Complete angiographic exclusion of the LAD aneurysm was achieved (*Figure 3*). A diagonal branch covered by the stent had no antegrade flow but filled with left-to-left collateral branches. The patient was discharged home the next day on his regular daily medications including aspirin 325 mg. He will also take clopidogrel 75 mg daily for 2 months.

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Figure 3. Coronary angiogram demonstrating complete obliteration of the aneurysm.

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The use of a covered stent has been well documented for exclusion of various vascular aneurysms (1–4), for use with coronary artery rupture (5), and for treatment for coronary aneurysm (6–8).

We present a case of a young patient with significant coronary flow restriction and coronary aneurysm due to atherosclerotic coronary disease. The decision to proceed with percutaneous

treatment of this patient was made for several reasons. First, his age made it likely that he would have to endure a second open chest procedure in the not-too-distant future. Second, bypass surgery would be complicated by the need for ligation of the aneurysm as well as conduit placement. Third, the patient preferred not to have a major surgical procedure if an alternative percutaneous procedure could be performed.

At this time, the long-term outcome of patients treated with covered stents for aneurysmal disease is not known. Like patients who undergo coronary stenting for stenosis, these patients are subject to subacute stent thrombosis and stent restenosis.

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