Percutaneous, minimally invasive approach to implantable left ventricular assist device deactivation

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Percutaneous, minimally invasive, catheter-based approach to deactivate HeartMate II VAD.

Central Message

A successful catheter-based deactivation of HeartMate II ventricular assist device to treat recurrent drive line infection.

See Editorial Commentary page 655.

We previously demonstrated¹ a successful catheter-based deactivation of a HeartMate II (Thoratec Corporation, Pleasanton, Calif) device that had been placed as a “bridge to recovery” therapy.² In the case illustrated here, we modified and extensively applied this technique to treat recurrent left ventricular assist device drive line infection by deactivating the HeartMate II ventricular assist device in a percutaneous and minimally invasive manner, in which a 22-mm Amplatzer Vascular Plug II (St Jude Medical, St Paul, Minn) was deployed under fluoroscopy through

the right femoral artery in the distal outflow graft 1 cm proximal to the aortic anastomosis (Figure 1). No Doppler flow was detected either around the plug or inside the left ventricle on transesophageal echocardiography. At 9 months after the deactivation, the patient remains in excellent health without any evidence of infection.

FIGURE 1. A, The outflow graft of the left ventricular assist device (HeartMate II; Thoratec Corporation, Pleasanton, Calif) was accessed under fluoroscopy. B, Aortography showed the location of outflow graft of the left ventricular assist device to the aortic anastomosis. C, A 22-mm Amplatzer Vascular Plug II (St Jude Medical, St Paul, Minn) was deployed under fluoroscopy in the distal outflow graft 1 cm proximal to the aortic anastomosis. D, Angiography revealed trace retrograde flow of contrast medium through the occluded outflow of the left ventricular assist device.

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