

Percutaneous decommissioning of a HeartWare Ventricular Assist Device in a patient with myocardial recovery: a case report

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KEYWORDS: left ventricular assist device, heart failure, mechanical circulatory support, dilated cardiomyopathy, occlude.

CITATION: *Cardiol Croat.* 2024;19(11-12):443. | <https://doi.org/10.15836/ccar2024.443>

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Introduction: Left Ventricular Assist Devices (LVADs) have become essential instruments in the treatment of advanced heart failure. Some patients on LVAD may experience myocardial recovery, which is uncommon, but opens up the possibility of discontinuing LVAD support. Minimally invasive percutaneous decommissioning has emerged as a potential approach for this process, and here we describe the course and the process of a first such case at our Institution.

Case report: In 2015, a 48-year-old female patient was referred to our center due to advanced heart failure caused by dilated cardiomyopathy, necessitating the implantation of a HeartWare Ventricular Assist Device (HVAD) device as a bridge to candidacy. Following the implantation, the patient's clinical condition significantly improved, with no complications related to the device or any infections in the follow up. Over time, her left ventricular function also gradually recovered, left ventricular ejection fraction (LVEF) reaching 50% and a left ventricular internal diastolic diameter of 5.0 cm. After thorough review, it was concluded that the patient had achieved responder status and decided that LVAD decommissioning was the most appropriate course of action, as previously described^{1,2}. The procedure was performed under sedation with continuous transesophageal echocardiographic and fluoroscopic guidance. Following heparinization, the LVAD speed was reduced to the point of zero net device flow. Over a stiff wire a 10 × 40 mm balloon was inflated and held occluding the outflow graft. The patient was so observed for the next 20 minutes, without any deterioration. Then, a 14-mm vascular plug was placed, the LVAD was turned off, and the outflow graft thrombosed over the following 15 minutes, with all hemodynamic parameters remaining stable, ending the procedure. Echocardiography before discharge showed a stable LVEF of 45-50%. Six months later, the patient remains clinically stable.

Conclusion: The bridge-to-recovery strategy in LVAD patients is a rare but highly desirable outcome. The minimally invasive percutaneous LVAD decommissioning in those patients is a safe and viable alternative to the conventional surgical explantation. Careful patient follow-up, selection, preparation and coordinated multidisciplinary approach are essential to the success.

RECEIVED:
October 13, 2024

ACCEPTED:
October 31, 2024



LITERATURE

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