Potential explantation of left ventricular assist devices: a complex clinical decision

Ružica Lovrić[1]*, Nikolina Glogovšek[1], Paula Keblar[1], Ivica Benko[1,2]

[1]Dubrava University Hospital, Zagreb, Croatia
[2]University of Applied Health Sciences, Zagreb, Croatia

KEYWORDS: left ventricular assist device, explantation, myocardial recovery, advanced heart failure, multidisciplinary care.

CITATION: Cardiol Croat. 2024;19(1-2):33. | https://doi.org/10.15836/ccar2024.33

***ADDRESS FOR CORRESPONDENCE:** Ružica Lovrić, Klinička bolnica Dubrava, Avenija Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-1-2902-542 / E-mail: lovricruzica29@gmail.com

ORCID: Ružica Lovrić, https://orcid.org/0000-0002-8991-5025 • Nikolina Glogovšek, https://orcid.org/0000-0001-7769-5179 Paula Keblar, https://orcid.org/0009-0000-9694-4118 • Ivica Benko, https://orcid.org/0000-0002-1878-0880

Introduction: Left Ventricular Assist Devices (LVAD) have become a crucial therapy for patients with advanced heart failure awaiting heart transplantation or as destination therapy. However, the possibility of LVAD explantation, once considered rare, is increasingly recognized as a complex and evolving aspect of advanced heart failure management. LVAD explantation may be considered in specific clinical scenarios, including myocardial recovery, heart transplantation candidacy, or resolution of adverse events such as infection or device-related complications. Successful LVAD explantation often necessitates a multidisciplinary approach, including close collaboration between cardiologists, cardiac surgeons, and transplant teams. However, the decision to explant an LVAD is complex and involves careful patient evaluation, including functional assessment, cardiac imaging, and hemodynamic monitoring. Challenges may arise in identifying suitable candidates, assessing myocardial recovery, and managing potential complications associated with explantation.[1-3] This abstract explores the various scenarios, indications, and challenges associated with potential LVAD explantation.

Case report: We present a 56-year-old female patient who has been under medical supervision since 2015 due to dilated cardiomyopathy. In the same year, she underwent pre-transplantation assessment and received an LVAD implant. She has been hospitalized on multiple occasions for microcytic anemia, attributed to uterine fibroids, for which she underwent an elective hysterectomy. In March 2020, she was hospitalized due to a local infection and bleeding around the driveline entry site. Furthermore, in July 2021, she was admitted due to increased fatigue, accompanied by exertional palpitations and lower leg swelling. The patient reported a fall at home but provided a detailed account of the incident, without any loss of consciousness. She also mentioned that she had not experienced similar incidents before. The LVAD device functioned normally without any recorded alarms. A medical consensus determined that the patient would remain on the Eurotransplant waiting list until further notice. The patient received regular follow-up care through the Daily Cardiology Clinic. In July 2023, she was hospitalized for a disease reevaluation. During hospitalization, the LVAD pump speed and flow were gradually reduced with a favorable myocardial response. Furthermore, in September of this year, she was admitted for planned right heart catheterization and evaluation for LVAD explantation. However, the right heart catheterization was not performed for technical reasons, and there were no new issues compared to her previous hospitalization.

RECEIVED:
September 25, 2023
ACCEPTED:
October 7, 2023

LITERATURE

1. Copeland JG, Emery RW, Levinson MM, Icenogle TB, Carrier M, Ott RA, et al. Selection of patients for cardiac transplantation. Circulation. 1987 Jan;75(1):2-9. https://doi.org/10.1161/01.CIR.75.1.2
2. Samardžić J, Lovrić D, Miličić D. Transplantacija srca - indikacije, kontraindikacije i dugoročno liječenje transplantiranih bolesnika. Medix. 2011;17(92/93):160-4.
3. HeartMate II Left Ventricular Assist System Patient Handbook. https://manuals.sjm.com/Search-Form?re=North-America&cc=US&ln=EN&cat=B18F3D02-ACC5-41A5-BE09-934302B1B718&seg=DAE86226-3CF7-4B5F-8FB4-7947B734CED6&ipp=10&ct=patient (September 20, 2023).