

Impella 5.5 as a bridge to heart transplant: a case report

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Introduction: In cases of advanced heart failure that do not respond to medical therapy, heart transplantation is the sole effective treatment option.¹ Because of the limited supply of organs, these patients frequently require some type of short-term mechanical circulatory support, such as Impella 5.5, as a bridge to transplantation.

Case report: The purpose of this case report is to describe the care of a 35-year-old patient who had terminal heart failure due to ischemic cardiomyopathy and rhythmic instability, was implanted an Impella 5.5 as a bridge to transplantation. At the age of 28, the patient survived a myocardial infarction, which was worsened by the development of ventricular fibrillation, requiring the implantation of the implantable cardioverter defibrillator (ICD). Between 2016 and 2022, the patient's good functional status is monitored; till December 2022, when he was hospitalized because of numerous ICD activations. In February 2023, endocardial modification of the scar substrate in left ventricle was performed, followed by stereotaxic radioablation in November. A stable medical condition continues until June 2024, when he presents to the Emergency Department with palpitations and a decrease in functional ability, and pre-transplant treatment is initiated to enroll him on the waiting list. In August, the patient was admitted to because of ICD activation, where he was arrested and briefly resuscitated. During the intensive care unit period, he remained hemodynamically and rhythmically unstable, requiring multiple ICD activations, which requires cardiopulmonary resuscitation with the occurrence of pulmonary edema. Therefore, he was admission to the urgent Eurotransplant list on August 23 and Impella 5.5 was implanted on September 5 to bridge the gap until the heart transplant. It was inserted through the right axillary route, providing assistance to the left ventricle and hemodynamic support to the patient.

Conclusion: Because of the complexities of the case, a multi- and interdisciplinary team plays a crucial part in the patient's care. Nursing care included caring for the incision site, controlling the device position, replacing and checking the anticoagulant solution system, checking and resolving device alarms, monitoring the patient's volume status and diuresis, and detecting and treating complications on time.

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LITERATURE

1. Haddad O, Sareyyupoglu B, Goswami RM, Bitargil M, Patel PC, Jacob S, et al. Short-term outcomes of heart transplant patients bridged with Impella 5.5 ventricular assist device. *ESC Heart Fail.* 2023 Aug;10(4):2298-2306. <https://doi.org/10.1002/ehf2.14391>