

Percutaneous mitral valve repair assisted by a catheter-based circulatory support device in a heart transplant patient

Gaik Nersesian¹, Daniel Lewin¹, Felix Schoenrath¹, Natalia Solowjowa¹, Marian Kukucka¹, Volkmar Falk¹, Christoph Klein¹, Evgenij Potapov¹, and Axel Unbehaun¹

¹Deutsches Herzzentrum Berlin

June 24, 2021

Abstract

Abstract Systemic infections and chronic graft rejection represent common causes of mortality and morbidity in heart transplant patients. In severe cases, cardiogenic shock (CS) may occur and require hemodynamic stabilization with temporary mechanical circulatory support (tempMCS).¹ Under these devastating circumstances, treatment of sequelae of left ventricular dysfunction, such as secondary mitral regurgitation (MR) is challenging, especially when surgical repair is deemed futile. In non-transplant patients, interventional mitral valve repair strategies such as the MitraClip system (Abbott Cardiovascular, Plymouth, MN, USA) have been used to successfully treat secondary MR and allow for weaning from tempMCS.² We report about the first patient in whom profound cardiogenic shock after heart transplantation was stabilized with tempMCS followed by interventional elimination of secondary MR.

Percutaneous mitral valve repair assisted by a catheter-based circulatory support device in a heart transplant patient

Gaik Nersesian^{1,2}, Daniel Lewin¹, Felix Schoenrath^{1,2}, Natalia Solowjowa¹, Marian Kukucka¹, Volkmar Falk^{1,2,3,4,5}, Christoph Klein⁶, Evgenij Potapov^{1,2}, Axel Unbehaun^{1,2}

1 Department of Cardiothoracic and Vascular Surgery, German Heart Center Berlin, Germany

2 DZHK (German Center for Cardiovascular Research), Partner Site Berlin, Germany

3 Berlin Institute of Health (BIH), Berlin, Germany

4 Department of Cardiovascular Surgery, Charité – Universitätsmedizin Berlin, Germany

5 Translational Cardiovascular Technologies, Institute of Translational Medicine, Department of Health Sciences and Technology, Swiss Federal Institute of Technology (ETH) Zurich, Switzerland

6 Department of Internal Medicine, Cardiology, German Heart Center Berlin, Germany

* Authors contributed equally to the study

Corresponding Author

Gaik Nersesian

Deutsches Herzzentrum Berlin

Augustenburger Platz 1

13353 Berlin, Germany

Tel. +49 30 4593 2000

E-Mail: nersesian @dhzb.de

Short Title: Protected MitraClip

Keywords: MitraClip, mitral regurgitation, heart transplantation, Impella

Total Word Count: 1411

Word count abstract: 118

Conflict of interest

E. Potapov reports institutional grants and fees and non-financial support from Abbott and Medtronic during the conduct of the study; institutional grants, fees and non-financial support from Berlin Heart and Abiomed outside the submitted work.

Funding Statement

Authors have no funding to declare for this study.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The official data request has to be approved by institutional ethics committee and administration of participating centres. The data are not publicly available due to privacy or ethical restrictions.

Hosted file

Protected MitraClip_master_rev_kurz.docx available at <https://authorea.com/users/410074/articles/527614-percutaneous-mitral-valve-repair-assisted-by-a-catheter-based-circulatory-support-device-in-a-heart-transplant-patient>





