

BERLIN HEART EXCOR® ACTIVE

CASE REPORT

THE BRIDGE TO HEART TRANSPLANTATION

SUMMARY

We report the case of a paediatric patient with a diagnosis of restrictive cardiomyopathy. The implantation of the EXCOR® Pediatric left ventricular assist device successfully bridged the time until a heart transplantation could be carried out. The EXCOR® Active mobile drive enabled improved mobilisation during use of the LVAD system.

ANAMNESIS AND CLINICAL DIAGNOSIS

Ben, who is now one and a half years old, developed protracted cardiogenic shock at the age of 9 weeks, with decompensated heart failure and multiple organ dysfunction. He was diagnosed with restrictive cardiomyopathy (INTERMACS class III). The heart transplantation listing was carried out on 4 Nov 2019 (HU status). On emergency readmission of the patient to the Grosshadern campus of LMU Munich in mid-January 2020, echocardiography revealed a markedly dilated left atrium and high-grade mitral regurgitation in addition to mild tricuspid regurgitation and pulmonary artery dilatation. Sonography of the abdomen showed significant hepatomegaly and marked venous congestion. Bilateral pleural effusions and ascites were also identified.

THERAPY AND POSTOPERATIVE COURSE

The patient's condition improved initially with extensive drug therapy. However, the situation deteriorated again at the end of January, necessitating a transfer to the intensive care unit.

Following emergency intubation and in the presence of marked haemodynamic instability, it was clear that drug therapy would not be sufficient to maintain the child's circulation in the long term. An attempt at surgical mitral valve reconstruction was aborted due to haemodynamic collapse. In this critical situation, the EXCOR® system was the only option for bridging the unknown time until a heart transplantation could be carried out.

The Berlin Heart EXCOR® left ventricular assist device was implanted without complications on the same day (4 February 2020). In the following days, the patient's haemodynamic and respiratory condition stabilised. The organ systems gradually recovered following implantation of the assist device.



RESTRICTIVE CARDIOMYOPATHY

occurs as a result of systemic or genetic disorders. It leads to endocardial thickening or myocardial infiltration and may affect the left or both ventricles.

The disease is characterised by diastolic dysfunction with a rigid ventricle and a lack of ventricular compliance. This is accompanied limited diastolic filling and high filling pressure that leads to pulmonary venous congestion. Systolic function may also deteriorate if compensatory hypertrophy of the infiltrated and fibrosed ventricles is insufficient.

LIVING WITH THE BERLIN HEART EXCOR® ACTIVE

This marked clinical improvement also brought about a need for improved mobilisation. With the IKUS stationary drive system, it was only possible for little Ben to be mobilised to a limited extent. His range of movement was limited. Due to the COVID-19 pandemic, Ben was not able to receive visitors and was very isolated. His brother and the rest of the family were also no longer allowed to visit him. Switching to the new EXCOR® Active mobile drive opened up a range of completely new mobilisation options for the young patient. A battery life of up to 7 hours made mobilisation much easier. It was now possible for Ben to take extended walks outside in the grounds of the clinic. This allowed Ben to see his brother again. Thanks to the lower noise level of the drive, day-to-day life in the room on the ward was also made easier.



Quote from the father:

„Our son would not have survived without the Berlin Heart device. In addition, he made a great recovery on the system and fought back against the disease. Despite the prospect of a potentially long wait for a donor heart in hospital, seeing him smile again was a true blessing.“

The EXCOR® Active offers a range of mobilisation options, from use as a caddy to fitting to a baby buggy. As such, the EXCOR® Active offers a suitable mobilisation concept for every situation and age of child.

THE HEART TRANSPLANTATION

On 3 June 2020, the parents received the long-awaited news that a suitable donor heart had been found for Ben. The transplant was successfully performed on 4 June 2020. The postoperative course was free from complications, allowing the patient to be transferred to the regular ward just eight days later. On day 23 after the transplant, Ben was able to be discharged home with his family.



Quote from the father:

„It's only thanks to Berlin Heart that our little Ben was able to survive the wait for a donor heart.“

The access to some or all shown products may be restricted by country-specific regulatory approvals. The use of EXCOR® VAD for adults, RVAD-support, Excor mobile and EXCOR® Active is not FDA-approved.

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© Berlin Heart GmbH
Wiesenweg 10
D-12247 Berlin
Tel. +49 30 81 87 - 26 00
Fax +49 30 81 87 - 26 01
info@berlinheart.de
www.berlinheart.de