First Artificial Heart Implanted At A Pediatric Hospital

Texas Children's Hospital in Houston became the first pediatric hospital in the United States to implant an artificial heart. The patient was a 17-year-old male and seen as the only option to save his life. The history-making patient underwent a rare 15-hour operation on May 22 and is currently recovering. He is one of three congenital heart patients in the nation to get such a device.

Jordan Merecka, born with his heart on the wrong side of his chest (dextrocardia) and his heart vessels backwards (corrected transposition of the great arteries) was implanted with the SynCardia Total Artificial Heart, a pulsatile blood pump that mimics the pumping action of the native heart. The Total Artificial Heart was implanted in Jordan as a bridge to a donor-heart transplantation.

"The patient's overall condition had deteriorated rapidly," said Dr. David L.S. Morales, pediatric cardiovascular surgeon at Texas Children's Heart Center, who performed the surgery. "Jordan was waiting for a donor heart, but both ventricles and two of his valves were failing, and we were running out of time. The artificial heart, which was immediately available when this patient needed it most, could take care of all of these problems with one operation," said Morales, also associate professor of surgery and pediatrics at Baylor College of Medicine (BCM).

Similar to a heart transplant, the patient's native heart was removed and replaced. Merecka will still need a donor heart, but now has more time to wait for the best match. As a child, Jordan experienced two open chest surgeries. Later, he received several surgical revisions and an implantable defibrillator. But, in September 2010, Jordan's heart began to fail and he was placed on a waiting list for a heart transplant. With medical treatment, he was able to attend school as he waited.

In April 2011, his health took a turn for the worse and he was admitted to Texas Children's Hospital with heart failure symptoms and kidney insufficiency. He was in critical need of a heart transplant. Weeks passed as he waited for a donor heart and made multiple visits to the cardiovascular intensive care unit. Over the weekend of May 21, all of his organs began to fail acutely and he could not even breathe on his own since his heart was so week.

Texas Children's Hospital heart failure program presently uses six different types of mechanical circulatory support devices so that no matter what the cause of a child's heart failure or their size and weight, the best device can be used for that individual patient.

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