

Multidisciplinary team completes first-ever EXIT to ventricular pacing procedure

February 16 2018



Researchers at Children's Hospital Colorado have completed the first-ever EXIT to ventricular pacing procedure. While a baby was still attached via the umbilical cord, doctors attached a pacemaker to the baby's heart to ensure healthy heart rate and blood flow prior to delivery. Credit: Children's Hospital Colorado

Researchers at Children's Hospital Colorado (Children's Colorado) have completed the first-ever EXIT (Ex Utero Intrapartum Treatment) to ventricular pacing procedure. The patient, a 36-week fetus, who suffered

from complete atrioventricular block (CAVB) and cardiac dysfunction, was at high risk of dying before delivery. While still attached to its mother via the umbilical cord, the baby received a temporary pacemaker, which stabilized its dangerously low and irregular heart rate and ensured enough blood flow from the heart to the rest of its body for delivery.

"In essence, this procedure gave the fetus the gift of time," said Bettina Cuneo, MD, fetal cardiologist. "Not only were we able to expose the heart and attach the pacing leads to make the heart rate faster, we were able to make sure the heart was functioning effectively before cutting the [umbilical cord](#)."

A team of experts led by Dr. Cuneo and Henry Galan, MD, [maternal fetal medicine](#) at the hospital's Colorado Fetal Care Center, worked with a multi-disciplinary team including Max Mitchell, MD, cardiothoracic surgery, to perform the procedure, and the infant was successfully delivered. Their research was recently published in *Fetal Diagnosis and Therapy*.

The risk of perinatal death in the first day of life is six-to-eleven times higher if a fetus:

- Develops CAVB at less than 20 weeks of gestation
- Has a fetal [heart rate](#) less than 55 beats per minute
- Develops heart failure

This approach should significantly lower this increase in mortality for a preterm fetus with these conditions.

"With the mother's body acting as a [heart](#) and lung bypass machine, the

EXIT procedure allows life-saving fetal interventions while maintaining in-utero circulation," said Dr. Galan. "Although careful selection of patients is necessary, this 'rescue' pacing not only provides an option for the most fragile patients with CAVB, but also for fetuses who are at high risk for in-utero loss of life but are too premature for delivery."

More information: Bettina F. Cuneo et al, Ex utero Intrapartum Treatment to Ventricular Pacing: A Novel Delivery Strategy for Complete Atrioventricular Block with Severe Bradycardia, *Fetal Diagnosis and Therapy* (2017). [DOI: 10.1159/000475815](https://doi.org/10.1159/000475815)

Provided by Children's Hospital Colorado

Citation: Multidisciplinary team completes first-ever EXIT to ventricular pacing procedure (2018, February 16) retrieved 3 July 2023 from <https://medicalxpress.com/news/2018-02-multidisciplinary-team-first-ever-exit-ventricular.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.