Emergent Intrapartum Cesarean Delivery in a Grand Multiparous Parturient Supported by a Left Ventricular Assist Device

Tyler Guidugli DO; Rosemary Kelley MD; Megan E. Bunnell, MD, MS, MA; Jimin J. Kim MD, MSc; Katherine E. Economy MD; Bushra W. Taha MD





Mechanical circulatory support relatively contraindicated in pregnancy¹⁻³

Maternal and fetal risk
 Hemodynamic stress
 Thrombotic events
 Infectious complications
 Teratogenic medications
 Uterine compression



Increasing prevalence of Left Ventricular Assist Devices (LVADs) in pregnant patients with advanced heart failure¹⁻³

Limited data to inform guidelines and clinical management



<u>Case</u>: 38-year-old G8P7 with substance use disorder, remote pulmonary embolism, and peripartum cardiomyopathy requiring a HeartMate 3 LVAD who underwent successful emergent intrapartum cesarean delivery

References: 1. Marek-lannucci et al 2023; 2. Pacheco et al 2023; 3. Yadalam et al 2023







38 yo G8P7 with substance use disorder, remote pulmonary embolism, and peripartum cardiomyopathy requiring an LVAD



1209: FHR deceleration 1st & 2nd Trimester 36 wks GA IOL 1234: Delivery Oxytocin stopped Adjustment of IVF bolus Heparin infusion held APGARs 7/9 1238: LVAD Suction event medications & Large bore IV & New breech presentation **CSICU** Transfer Stable on low LVAD parameters arterial line access with persistent Category II Albumin bolus & Serial TTE monitoring Cook balloon placed FHR tracing NE to stabilize dose NE **Postpartum Antepartum** Intrapartum 34 wks GA Admission 0230: Oxytocin started 1223: Emergent CS under POD8: Discharged Medical optimization 0600: SVE 4/0/-1 epidural anesthesia 4 wks PP: Amaurosis fugax TTE 1225: Inadequate surgical analgesia INR <2 Epidural placed 6 wks PP: Vaginal bleeding Driveline mapping Supplemental IV Fentanyl, Anticoagulation planning midazolam, nitrous oxide **RPOCs D&E under MAC**

Abbreviations: TTE (transthoracic echocardiography); wks (weeks); GA (gestational age); IOL (induction of labor); IV (intravenous); SVE (spontaneous vaginal exam); FHR (fetal heart rate); IVF (intravenous fluid); CS (cesarean section); NE (norepinephrine); CSICU (cardiac surgical intensive care unit); POD (post-operative date); PP (post-partum); INR (international normalized ratio); RPOCs (retained products of conception); D&E (dilation and evacuation); MAC (monitored anesthesia care).







Multidisciplinary Approach for Peripartum Considerations

SOAP 2025

Chnud

Meeting

APRIL 30 - MAY 4, 2025

HILTON PORTLAND DOWNTOWN HOTEL - PORTLAND, OR

Cardiac Anesthesia, Cardiac Surgery, Cardiology, Critical Care, Hematology Maternal-Fetal-Medicine, Nursing, Obstetric Anesthesia, Pharmacy Teams

	ANTEPARTUM	INTRAPARTUM	Postpartum
CARDIAC	LVAD optimization Baseline interrogation Serial TTE per trimester Driveline mapping in the event of cesarean delivery	Contingency planning Massive transfusion Sepsis Cardiopulmonary bypass Extracorporeal membrane oxygenation	Hemodynamic monitoring Cardiac output Stroke volume Systemic vascular resistance
MEDICATION	Teratogenic effects Guideline directed therapies Anticoagulation	Anticoagulation timing Physiologic considerations Uterotonics Antifibrinolytics Vasopressors	Anticoagulation timing Breastfeeding implications
FACILITY/ LOCATION	Level IV maternal care Regional perinatal health center	Delivery location Labor and delivery Intensive care unit Cardiac operating room	Post delivery location Labor and delivery Intensive care unit
OTHER	Early hospital admission Resource allocation	Induction of labor timing Delivery mode Hemodynamic monitoring & access Neuraxial candidacy	Outpatient follow-up Contraception





