

Anesthetic management during cesarean delivery of a parturient with left ventricular noncompaction cardiomyopathy

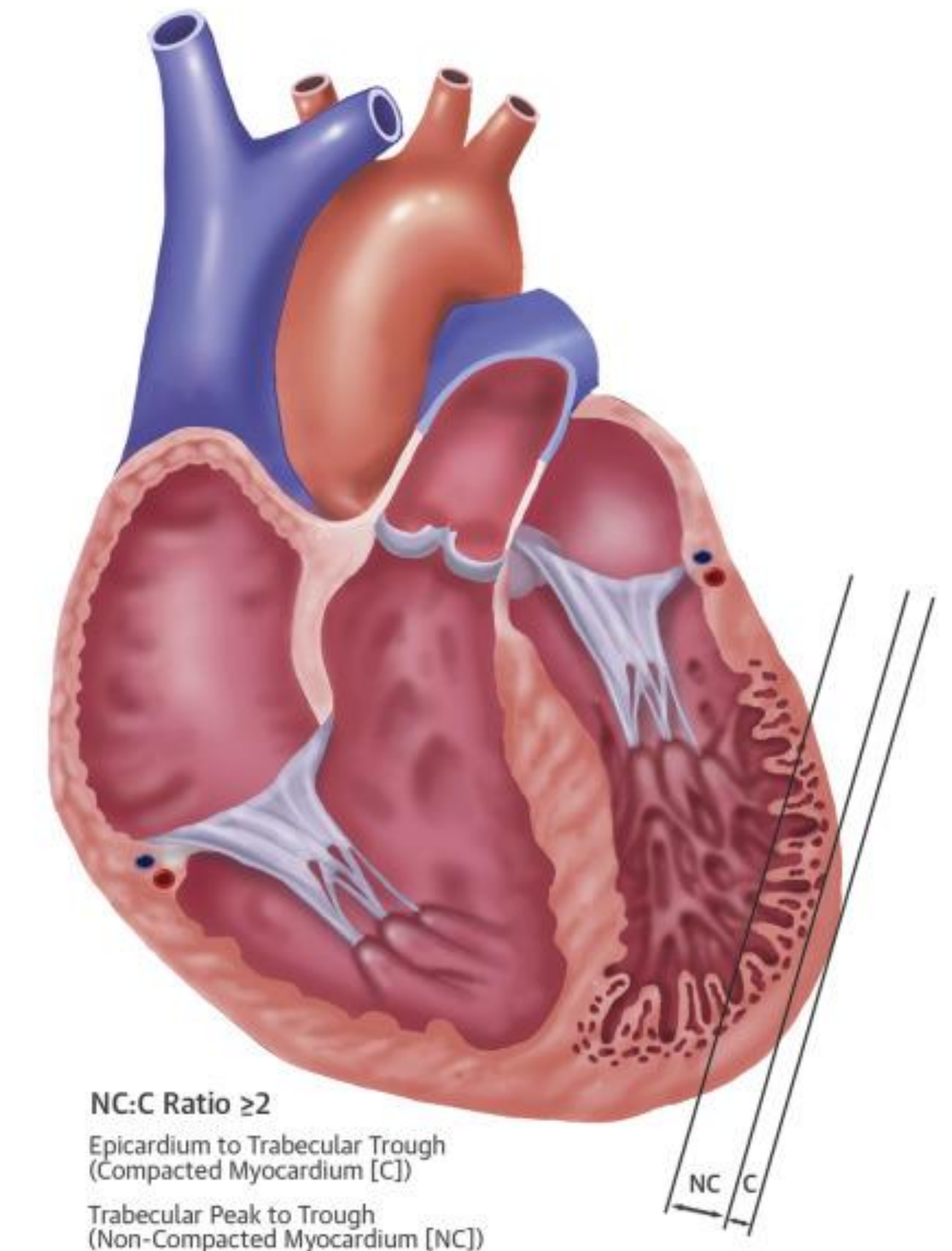
Emmarie Myers, MD, Phillip Callihan, MD, PhD, Sachin Mehta, MD. University of Virginia

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Background:

- Left ventricular noncompaction cardiomyopathy (LVNC) is a rare form of cardiomyopathy¹
- Often genetic and can be autosomal dominant, x-linked, or mitochondrial
- Failure of ventricular compaction during embryogenesis → two layer ventricular wall²
 - Compact epicardial layer
 - Non-compacted endocardial layer with large trabeculations
- Diagnosed based on LV morphology w/ TTE study of choice
- Classical presentation: heart failure, arrhythmias, emboli from mural thrombus³
- Limited data regarding LVNC and disease progression in the pregnant patient



Hussein, A. et al. J Am Coll Cardiol. 2015; 66(5):578-85.

1. El Nawaa SENHM, Vutthikraivit W, Jenkins L. *J Investig Med High Impact Case Rep.* 2021; 9:23247096211053713.
2. Nelson SC, Lamb SC, Montague IA, Drake EJ. *Int J Obstet Anesth.* 2020;42:124-125. doi:10.1016/j.ijoa.2020.02.003
3. Hussein A, Karimianpour A, Collier P, Krasuski RA. *J Am Coll Cardiol.* 2015;66(5):578-585. doi:10.1016/j.jacc.2015.06.017

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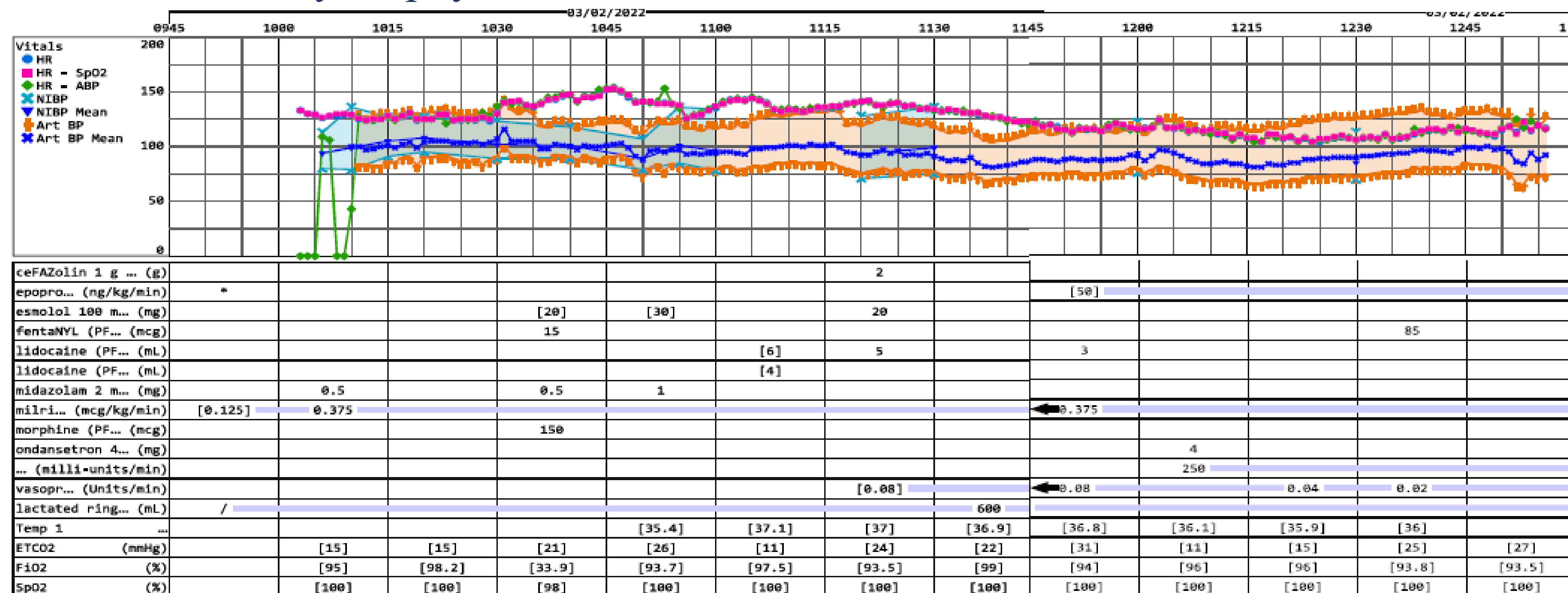


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- ## Case:

- Access included arterial line, central line, and PIV (no PAC)
- Uncomplicated CSE performed with intrathecal injection of morphine sulfate only for post-operative pain control
- Epidural slowly dosed with 2% lidocaine to achieve adequate level
- Cardiothoracic surgery team placed groin sheaths for emergent ECMO access if needed
- Vasopressin utilized as primary pressor to avoid worsening of pulmonary vasoconstriction
- Milrinone was increased and inhaled epoprostenol started prior to delivery
- No significant hemodynamic or rhythm changes during delivery
- Patient remained asymptomatic
- Milrinone was titrated back to the initial dose and continued postpartum along with epoprostenol
- Discharged on postpartum day 5
- Repeat TTE postpartum showed improvement in EF to 30-35%



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Learning Points:

- Neuraxial anesthesia can be successfully used for cesarean delivery in a patient with severely reduced EF from LVNC
 - However, may not be feasible if patients are on anticoagulation given mural thrombi and embolic risk
- Patients with LVNC are at risk for major cardiac events including tachyarrhythmias and worsening heart failure
- Pre-delivery planning with Cardiology and CT surgery in the event of decompensation
- Maintenance of hemodynamic stability with appropriately chosen vasopressors and inotropes may be required
 - Epinephrine was avoided due to arrhythmogenic potential, tocolytic effects, and concern for exacerbating the patient's heart rate
- Patients should be carefully monitored given the potential for decompensation from autotransfusion
- Potential benefits from use of a PAC should be weighed against the risk of arrhythmias in patients with LVNC