Cardiovascular Collapse, Multi-Chamber Intracardiac Thrombosis, and Disseminated Intravascular Coagulation Following Dilation & Evacuation in a Post-Partum Cardiomyopathy Patient

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Peripartum cardiomyopathy (PPCM) *is associated with 11% of maternal deaths,[1] both of which can be mitigated by performing a D&E in the highest risk patients. D&E are low risk procedures often performed in the office setting with low complication rates.*

Patient History

- 32yo female G4P3 at 16 weeks with past medical history notable for asthma and prior asymptomatic COVID was transferred from OSH where she presented with 4 months of worsening shortness of breath.
- TTE revealed an LVEF 10%, moderately reduced RV function, moderate to severe MR, and RSVP of 60.
- Imaging was negative for PE, CAD, and DVT. She agreed to undergo a D&E to reverse her PPCM.
- Of note, she had tolerated a laparoscopic cholecystectomy under general anesthesia 3 weeks earlier.

[1] Lewey J and Jennifer H. "Cardiomyopathy in pregnancy." *Seminars in perinatology* vol. 38,5 (2014): 309-17. 2014.04.021

Perioperative Course

Pre-Operative

- Hemodynamics, volume status, and rhythm control of ventricular tachyarrhythmias were optimized by Cardiology, and her prophylactic enoxaparin held the day before her D&E.
- Planned anesthetic for the D&E was MAC with a propofol infusion and ketamine.

Intraoperative

- Initial vitals were BP 117/79, HR 115, and SpO2 100%, and were stable during the case.
- Immediately upon D&E completion, SpO_2 fell to the 70's despite no change in her spontaneous breathing.

Emergency Response

- Positive pressure ventilation was started and chest compressions were initiated.
- She was placed on peripheral ECMO.
- Differential diagnosis at the time included
  - Amniotic fluid embolism
  - Pulmonary embolism
  - Venous air embolism
- TEE was notable for a PFO and diffuse clots in all chambers of her heart including at the interface of the IVC and RA.
- Labs were notable for an INR 2.5, platelets 52, and Fibrinogen 177.

Patient Outcome and Discussion

Postoperative Care

- She was transferred to the ICU.
- She underwent surgical thrombectomy, biventricular assist device (BiVAD), and central ECMO cannulation.
- Her neurologic status deteriorated with imaging revealing significant embolic infarcts and was deemed not a candidate for heart transplant.
- Care was withdrawn by the family on POD 14.

Discussion

- Our patient with cardiovascular collapse, multi-chamber intracardiac thrombosis, and DIC likely suffered an AFE, a rare complication of second trimester D&E.[2]
- Pregnant patients placed on extracorporeal life support (ECLS) have high survivability rates compared to other etiologies if the cause is primarily cardiac in nature.[3]
- In our patient, an embolic event may not have been preventable and likely decreased her survivability despite ECLS.[3]

[2]Tobin, CD. "Amniotic Fluid Embolism during Dilation and Evacuation during 2nd Trimester Treated by ACLS Guidelines." *ECMO and Dialysis: A Case Report* (2017): 1-3
[3]Naoum EE, et al. "Extracorporeal life support in pregnancy: a systematic review." *JAHA* 9.13 (2020): e016072.