

Lipid Emulsion Use During Maternal Cardiac Arrest With Suspected Amniotic Fluid Embolism

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- Lipid emulsion is an established rescue therapy for local anesthetic systemic toxicity (LAST)
- Emerging case reports suggest possible benefit in refractory cardiac arrest during suspected AFE
- We present a case of maternal cardiac arrest with ROSC immediately following lipid emulsion administration

Case

19-year-old G1P0 at 38 weeks undergoing induction of labor

- Epidural placed (negative test dose)
- Sudden seizure-like activity after IUPC placement
- Emergent cesarean delivery

Post-delivery cardiac arrest

- ROSC after 13 minutes of ACLS

Key event

- **ROSC obtained within 1 minute of IV lipid emulsion**

Post-cardiac arrest course and findings

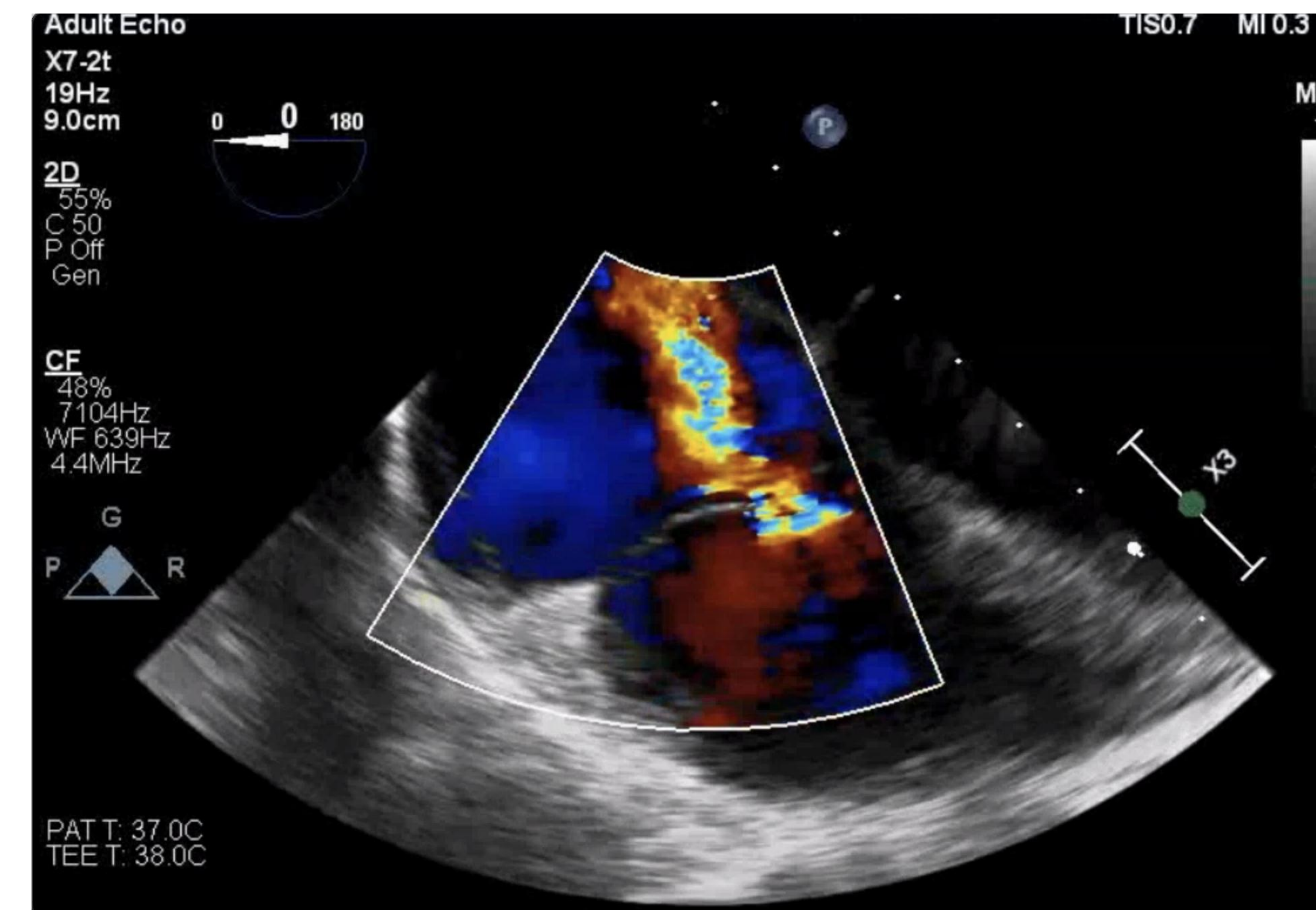
- Hemodynamic instability recurred after discontinuation of lipid emulsion
- Coagulopathy→hemorrhage→bedside hysterectomy
- Severe respiratory failure→placed on VV-ECMO

Outcome:

- Patient ultimately discharged with full neurologic recovery along with her baby

Differential diagnosis:

- LAST, Eclampsia, AFE, hypoglycemia, high neuraxial block



Pre-VV-ECMO TEE: Mid-Esophageal Four Chamber view: Severe tricuspid regurgitation, RV dysfunction

Discussion

Diagnostic Challenge

- AFE and LAST share overlapping clinical presentations, creating diagnostic uncertainty during obstetric cardiac arrest

Potential Role of Lipid Emulsion

- Established therapy for LAST
- Increasing case reports of ROSC during suspected AFE associated arrest

Proposed Mechanisms

- Lipid “sink” effect
- Direct inotropic and lusitropic effects on heart
- Pulmonary vasodilation improving RV dysfunction

Clinical Takeaway

- When maternal cardiac arrest occurs during labor with suspected AFE, lipid emulsion may represent a potentially life-saving adjunct therapy

1. Lynch, W., et al. (2017). A&A Case Reports, 8, 64–66.

2. Clark, S. L., et al. (2016). Am J Obstet Gynecol, 215, 408–412.