Seconds to Deliver: Maternal Arrest and Resuscitative Cesarean Delivery in Suspected Amniotic Fluid Embolism

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BACKGROUND

•Amniotic Fluid Embolism (AFE) is a rare but severe obstetric emergency, occurring in approximately 1 in 40,000 U.S. deliveries.[1]
•AFE results from amniotic fluid or fetal material entering maternal circulation, triggering an acute systemic inflammatory and cardiopulmonary response.[1]
•Presentation is variable, including cardiovascular collapse, respiratory failure, seizures, nausea, vomiting, and confusion.[1]
•AFE often includes two phases:
1. Initial cardiopulmonary collapse
2. Hemorrhagic/coagulopathic phase.[2]

CLINICAL PRESENTATION

38-year-old G3P2 at 39w3d presented after spontaneous rupture of membranes requiring labor augmentation with oxytocin and epidural analgesia.

Labor → Collapse
Hypotension + fetal decels
- Vasopressors / repositioning / terbutaline
- Anxiety, nausea/vomiting, worsening hypotension, unresponsiveness, seizure-like activity → **PEA arrest**
- **CPR**
- **Perimortem cesarean after 3 mins → ROSC** (neonate survived)
- POCUS: **RV strain**
- Dobutamine initiated

Hemorrhage Phase
Massive postpartum hemorrhage
- **FAST: hemoperitoneum**
- Uterotonics / tranexamic acid / JADA device / **massive transfusion**
- Emergent laparotomy

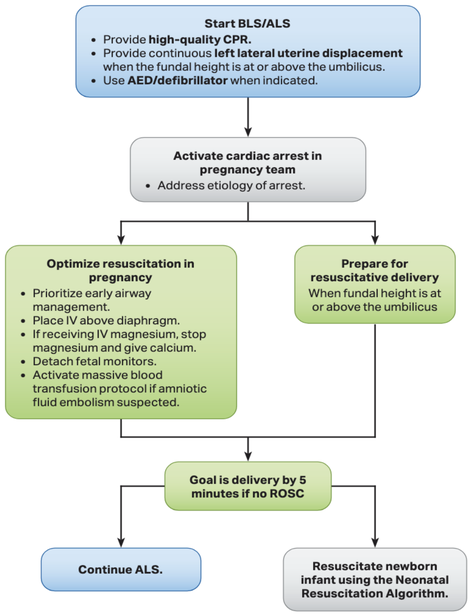
Secondary Collapse
Transport for uterine artery embolization
- Recurrent VT/VF arrest → CPR
- **VA-ECMO** initiated
- Limited response due to abdominal compartment physiology and severe LV dilation

CLINICAL PRESENTATION CONTINUED

Outcome
Refractory cardiopulmonary failure
- Death pronounced
- Autopsy: pulmonary petechiae consistent with AFE

TABLES & FIGURES

AHA's Cardiac Arrest in Pregnancy Algorithm[3]



Potential Etiology of Maternal Cardiac Arrest
A Anesthetic complications
B Bleeding
C Cardiovascular
D Drugs
E Embolic (amniotic fluid or pulmonary embolism)
F Fever
G General non-obstetric causes of cardiac arrest (H's and T's)
H Hypertension (eg. Preeclampsia)

DISCUSSION

•This case highlights the complexity of maternal cardiac arrest, where AFE remains a diagnosis of exclusion and requires rapid adherence to the AHA Cardiac Arrest in Pregnancy Algorithm.[13]

•Management priorities include high-quality CPR with manual left uterine displacement, early POCUS to identify reversible causes, and timely initiation of hemodynamic support.[3]

•Maternal cardiac arrest is rare (1 in 12,000–30,000 deliveries) but requires immediate consideration of the ABCDEFG differential framework.[13]

•AFE may present abruptly during labor, delivery, or the postpartum period, with outcomes dependent on rapid recognition, hemodynamic stabilization, and prompt correction of coagulopathy.[12]

•**Resuscitative cesarean delivery** is a time-critical intervention that may improve both maternal and neonatal survival.[34]

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