Amniotic Fluid Embolism in an Elective Caesarean Section: A Multidisciplinary Survival Case Report

Babatunde Osokoya (ST5 Anaesthetics Trainee), Fiona Yau (Consultant Anaesthetist), Cherry Wang (Consultant Anaesthetist)
Broomfield Hospital, Chelmsford, Mid and South Essex NHS Foundation Trust , UK

Introduction

Amniotic Fluid Embolism (AFE) is a rare and catastrophic obstetric emergency classically presenting with sudden maternal collapse, hypotension, hypoxaemia and coagulopathy. Diagnosis is one of exclusion.[1,2]

We discuss a case in which early recognition and prompt response resulted in a positive outcome.

Case History

28/08/2025

- 41 year old female
- G6P1 (4 miscarriages) at 38-week gestation
- Planned for Category 4 LSCS + sterilisation
- BMI 27 (1.62m, 71.8kg)
- Previous open myomectomy and emergency caesarean section, both uneventful
- Allergy-none
- Hb-108 g/L, Platelets 194

Regional anaesthesia

- Baseline-135/85mmHg, PR-90 b/m, Sats 97%
- Spinal – uncomplicated, first pass
- 2.6ml of 0.5% heavy bupivacaine + 300mcg diamorphine
- Block level before surgery: T4 bilaterally to touch, T2 to col
- Phenylephrine infusion started
- Antibiotics: Co-moxiclav 1.2g stat

Intraoperative Events

- At point of delivery (19 mins into surgery)
- Mother calling out in and in brief discomfort
- Then reported unable to breath
- Able to move hands
- Oxygen via facemask given to mother
- Male baby delivered, resuscitated from code blue to no issues

Immediate resuscitation

- Became unresponsive
- Cardiac arrest call made, AFE suspected
- Low heart rate, low BP, SpO_2 not recording
- Glycopyrrolate + atropine given
- Suxamethonium 100 mg, intubated, Sevoflurane on
- Normal airway pressure (19 cmH_20) & $ETCO_2$ (3.9 kPa)
- Intermittent brief CPR
- Four aliquots of 100 mcg adrenaline
- ROSC in 3 minutes
- Blood loss – 0.9 L(but under control)

Intervention

Teams

- Anaesthetists, Cardiac arrest team, Theatre staff, Intensive Care Unit, Haematology Unit, Midwives, Neonatology Unit, Porters

Thromboelastography (TEG)

- Citrated Functional Fibrinogen (CFF) low 2.4, 2.6, 5.7
- 6g fibrinogen concentrate infused

ABG

- Hb 105 g/L, 1 unit packed red blood cells (PRBC) transfused
- Potassium 3.4 mmol/L → 2.8 mmol/L correction started
- Lactate 1.8 mmol/L → 2.2 mmol/L

Medication

- Oxytocin, Carboprost, Tranexamic acid

- Arterial and central line (vasopressor infusion started)
- Warming blanket applied
- Operation finished, sterilisation not performed due to multiple adhesion
- EBL 1.2L

Post Partum Haemorrhage

- Haematuria noticed 45 mins post operation
- Clots per vaginam, EBL -1.8L, Hb 104 g/L
- Bakre balloon inserted and 2nd PRBC transfused

Immediate Post Operative Investigations

- Chest Xray: Normal
- 12 lead ECG: Left axis deviation
- Bedside echo: LVH ?long standing HTN, No RV strain
- CT head, pulmonary angiography, abdomen & pelvis: No abnormalities detected.

Intensive Care

- Transferred to ICU on low dose noradrenaline
- 8 cryoprecipitate given
- Labetalol and magnesium infusion
- Bakri balloon removed
- Hb 69 g/L, platelet 55, 3rd PRBC given
- Extubated on day 2, stepped down on day 3 with no neurological deficit

Discharge

- Discharged on day 7
- Follow up clinics
- Treated for hypertension
- Allergy testing 09/12/2025: Negative

Differentials	Positives	Negatives
Anaphylaxis	Co-amoxiclav, adrenaline effective	Low airway pressure, No rash/angioedema
High block	Dyspnoea, hypotension	Acute, moved hands
Stroke	Collapse	Negative CT
Myocardial infarction	Dyspnoea	Negative ECG & Echo
Eclampsia	Collapse	Hypotension
Pulmonary embolism	Dyspnoea, hypotension	Negative CT

Discussion

AFE is rare and causes significant morbidity and mortality. It is thought to occur due to maternal circulation exposed to amniotic fluid or foetal antigens[2].

The MBRRACE reported in UK a rate of 0.45 per 100,000 maternities (nine deaths between 2021-2023).[3] Uterine atony occurs in about 23 % of AFE cases[1] and in our case caused PPH, further reducing chances of survival.

It is known to be associated with hypotension (100%), foetal distress (100%), pulmonary oedema (93%), cardiac arrest (87%), coagulopathy (83%), dyspnoea (49%)[2], most which occurred in our patient.

High index of suspicion, multidisciplinary care, early use of point of care testing and aggressive supportive care all played vital roles in our outcome. Although not universally available in many maternities, the early use of TEG in this case was pivotal in aiding both diagnostic confidence and giving targeted treatment.

Key Learning Points

- Clinical diagnosis- act early
- Immediate CPR saves lives
- Treat coagulopathy early
- Use TEG/ROTEM
- Multidisciplinary teamwork

Reference

1. Dedhia JD, Mushambi MC. Amniotic fluid embolism. Continuing Education in Anaesthesia Critical Care & Pain. 2007;7(5):152-156. doi:10.1093/bjaceaccp/mkm031
2. Metodiev Y, Ramasamy P, Tuffnell D. Amniotic fluid embolism. BJA Education. 2018;18:234-238. DOI: 10.1016/j.bjae.2018.05.002
3. Felker A, Knight M; on behalf of MBRRACE-UK. Maternal mortality in the UK 2021-23: surveillance and epidemiology. In: Felker A, Patel R, Kotnis R, Kenyon S, Knight M, eds; on behalf of MBRRACE-UK. Saving Lives, Improving Mothers' Care: Compiled Report—Lessons Learned to Inform Maternity Care From the UK and Ireland Confidential Enquiries Into Maternal Deaths and Morbidity 2021-23. Oxford: National Perinatal Epidemiology Unit, University of Oxford; 2025:3-24. doi:10.5287/ora-4javr692x