

Amniotic fluid embolism after intrauterine fetal demise

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ABSTRACT

We present a case of the successful treatment of severe amniotic fluid embolism in a 41-year-old woman undergoing emergency caesarean section at 36 weeks of gestation for placental abruption and intrauterine fetal demise. The treatment included prolonged cardiopulmonary resuscitation, emergency hysterectomy, re-operation with intra-abdominal packing and intra-aortic balloon pump insertion. The patient made a remarkable recovery and to date has minimal residual morbidity.

Amniotic fluid embolism syndrome (AFES) is a rare and often fatal obstetric condition that remains one of the main causes of maternal mortality in developed countries. The incidence varies from 2 to 6 per 100,000 and suggested mortality rates exceed 60%.¹⁻² The classic triad of sudden hypoxia, hypotension and coagulopathy with acute onset during labour or immediately after delivery forms the hallmark of the AFES diagnosis, however AFES is primarily a clinical diagnosis of exclusion.

We present a case of successful maternal outcome following severe amniotic fluid embolism after placental abruption and intrauterine fetal demise.

Case Report

A 41 year-old well woman (TM), gravida 5 para 4, was admitted with a small antepartum haemorrhage at 36 weeks of gestation.

She also had severe hypertension of 180/110 mmHg and mild tachycardia of 100 beats per minute (bpm). On examination her uterus was tender and firm. A bedside ultrasound scan revealed intrauterine fetal demise with an anterior placenta clear of the cervix and a retro-placental haematoma. On vaginal examination the presenting part was high and the cervix was posterior and closed. Initial bloods showed creatinine 150 µmol/L (normal range 55–73 µmol/L) and subtle signs of coagulopathy with fibrinogen 1.5g/L (normal range 3–6.9g/L).

This diagnosis was made of a placental abruption with renal failure and coagulopathy and warranted urgent delivery. An emergency caesarean section under regional anaesthesia was favoured based on the urgency of the situation. Intra-operative findings included a Couvelaire uterus. A stillborn female infant of 2.5 kg was delivered with findings of a complete placental abruption.

Following closure of the uterus, the patient went into sudden cardiac arrest with pulseless electrical activity (PEA) on the electrocardiogram (ECG). She was intubated and cardiopulmonary resuscitation (CPR) commenced.

After around 28 minutes of CPR, TM regained circulation but the uterus remained hypotonic despite uterotonic treatment and B-Lynch sutures and it was decided to perform a subtotal hysterectomy. Haemodynamic instability persisted and due to rapid availability, an intra-aortic balloon pump (IABP) was inserted by the cardiothoracic surgeon with immediate significant improvement in cardiac function.

At around 90 minutes, TM developed severe disseminated intravascular coagulation (DIC) and required re-operation with pelvic-abdominal packing, Flow-Seal administration, and aggressive treatment with blood products (12 units packed red cells, 3 units platelets, 12 units FFP, 6 units cryoprecipitate) including recombinant factor VIIa as per recommendation from the transfusion medicine specialist.

TM was transferred to ICU with the DIC resolving in the ensuing 10 hours. The

intra-abdominal packs were removed on day three and TM was extubated on day five. In total, TM was in hospital for five weeks with acute renal failure requiring dialysis, mild residual left ventricular failure but no residual neurological or cognitive morbidity.

Discussion

The treatment of AFES is mainly supportive and associated with a high mortality rate.

This case demonstrates that with effective CPR combined with aggressive treatment with IABP and blood products, a favourable outcome with minimal degree of morbidity is possible even in a situation with prolonged CPR and DIC.

We have found one previous report of the successful use of IABP for AFE although it is a well-known and accepted treatment for acute cardiogenic shock.³ The use of recombinant factor VIIa for management of DIC is controversial and recommended for AFE when the haemorrhage cannot be stopped by massive blood product replacement.⁴ Intra-abdominal packing has proven safe and effective in controlling major obstetric haemorrhage and should be considered when there is refractory massive bleeding from raw surfaces or suture-lines in complicated obstetric or gynaecological operations.⁵

We would also like to highlight the importance of a multidisciplinary approach for managing complicated clinical situations and multiple specialty involvement was key in this woman's remarkable recovery.

Competing interests:

Nil.

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