

AMNIOTIC FLUID EMBOLISM DURING DELIVERY FOLLOWING FETICIDE

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Objective

Amniotic fluid embolism (AFE) is a rare and often fatal obstetric condition characterised by sudden cardiorespiratory collapse and coagulopathy following entry of amniotic fluid into the maternal circulation. Pathophysiology of AFE is likened to that of anaphylaxis, however it is not completely understood. AFE is a clinical diagnosis based on characteristic clinical findings and exclusion of other potential causes. Only a small number of cases are reported each year in the UK.¹

Case report

A 39 year old, G4P3 presented for delivery of fetus following feticide. The fetus was diagnosed with severe spina bifida at 22+1 weeks gestation. Patient had medical history of obesity, atopy and previous LLETZ for CIN3. During induction of labour, patient complained of sudden onset central chest pain and shortness of breath. On initial assessment patient was tachypnoeic and hypoxic. Arterial blood gas showed compensated metabolic acidosis (Figure 1). She had sinus tachycardia but was initially normotensive. Patient was also confused and agitated; her temperature was 37.8°C, there was evidence of active labour. Her vital signs were deteriorating rapidly. The fetus was delivered 15min after initial complaint of chest pain. Laboratory investigations showed that patient had reduced platelets and coagulopathy, in keeping with diagnosis of disseminated intravascular coagulation (Figure 2,3). X-ray imaging was suggestive of acute respiratory distress syndrome (Figure 4). CT excluded central pulmonary embolus. Supportive measures for hypoxia and potential hypovolaemia were started immediately. Intravenous broad spectrum antibiotics were started for suspected chorioamnionitis sepsis. Placenta was delivered and there was no evidence of maternal haemorrhage. Patient was treated in high dependency unit for 3 days. She had transfusion of plasma and cryoprecipitate to correct coagulopathy, vasopressors and oxygen therapy. Patient was medically fit for discharge seven days later with no evidence of permanent neurological injury.

pH (POCT)	7.353	
pO2 (POCT)	25.5	kPa
pCO2 (POCT)	3.8	kPa
cHCO3- (POCT)	15.4	mmol/L
BE (POCT)	-8.7	mmol/L
SO2 (POCT)	100.0	%
Na (POCT)	129.0	mmol/L
K (POCT)	3.07	mmol/L
Ca (POCT)	-	mmol/L
Cl (POCT)	-	mmol/L
Lactate (POCT)	3.9	mmol/L
Bilirubin (POCT)	< 51.27	umol/L
tHb (POCT)	126.9	g/L
MetHb (POCT)	0.3	%
COHb (POCT)	2.1	%
Hct (POCT)	41.6	%

Figure 1. Arterial gas results showing compensated metabolic acidosis.

Prothrombin Time	32.9	sec	12.3 - 15.6
INR	2.4		
APTT	70.2	sec	25.0 - 36.1
APT Ratio	2.29		0.8 - 1.2
Clauss Fibrinogen	0.5	g/l	2.4 - 4.0

Figure 2. Evidence of coagulopathy with raised PT and APTT and reduced fibrinogen levels

WBC	5.3	x10 ⁹ /l	4.0 - 10.0
Hb	143	g/L	120 - 160
Plt	85	x10 ⁹ /l	150 - 450
MCV	114.4	fl	77 - 101
RBC	3.57	x10 ¹² /l	3.80 - 5.20
Hct	0.409		0.36 - 0.47
MCH	40.0	pg	27 - 32
RDW	15.0	%	10.9 - 15.1
Neut	4.2	x10 ⁹ /l	2.0 - 7.0
Lymph	1.0	x10 ⁹ /l	1.0 - 3.0

Figure 3. FBC result shows normal WBC and Hb. Platelets were reduced in keeping with diagnosis of DIC.

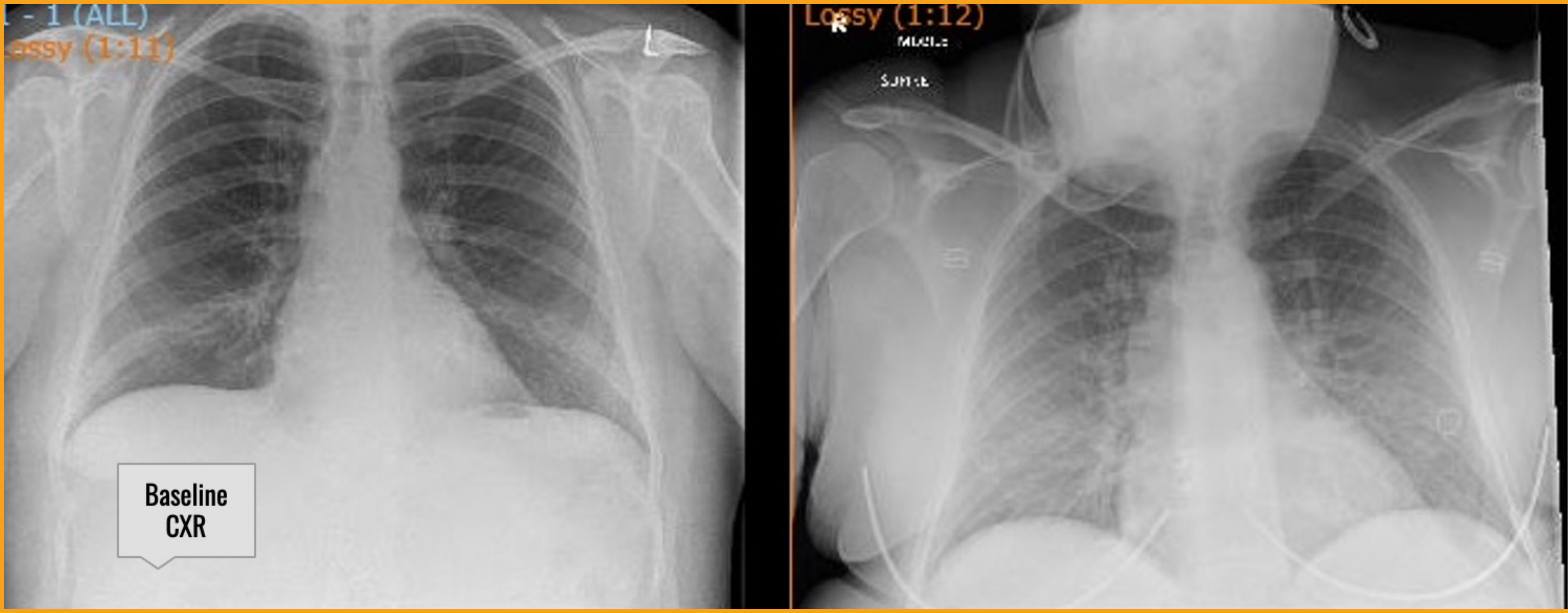


Figure 4. Bilateral diffuse opacifications suggesting ARDS shown in the image on the right. Image on the left shows normal lung fields of the same patient, for comparison.

Discussion

Differential diagnosis of AFE was considered early due to patient’s sudden and fast deterioration with no signs or symptoms of preceding illness. Advanced maternal age, multiparity, intrauterine fetal death and induction of labour appear to be associated with higher risk of developing AFE.¹ UKOSS suggest that clinical diagnosis of AFE can be made in cases of acute hypotension or cardiac arrest, acute hypoxia or coagulopathy in the absence of other potential explanation for the signs and symptoms.²

Conclusion

This was a rare diagnosis of AFE in labour. Early recognition and immediate instigation of supportive measures are crucial in ensuring patients’ survival and recovery.

References

1. Knight M, Tuffnell D, Brocklehurst P, Spark P, Kurinczuk JJ; UK Obstetric Surveillance System. Incidence and risk factors for amniotic-fluid embolism. *Obstet Gynecol* 2010;115:910–7
2. Amniotic Fluid Embolism | UKOSS | NPEU. [online] Npeu.ox.ac.uk. Available at: <<https://www.npeu.ox.ac.uk/ukoss/current-surveillance/amf#case-definition>>