

Introduction

Acute obstetric coagulopathy (AOC) is characterised by hyperfibrinolysis and dysfibrinogenaemia. It occurs in 1/1000 cases of major postpartum haemorrhage (PPH), and causes include amniotic fluid embolism (AFE) [1]. Major PPH is still a leading cause of maternal death in the UK [2]. We present a case of AOC secondary to AFE where early detection using local protocols may have prevented a potentially catastrophic deterioration.

Case Report

A 28-year-old woman (G2P1) underwent an elective caesarean birth at term under spinal anaesthesia. The baby was safely delivered, and at a measured blood loss (MBL) of 1000 ml we drew a blood sample for rotational thromboelastometry (ROTEM) according to our local protocols.

The results (Table 1) showed low FibTEM A5 with no prolongation of the clotting time and 4 g fibrinogen concentrate (FC) was administered. A repeat ROTEM 30 minutes after showed an even lower FibTEM A5 and a further 6 g of FC was administered.

Case Report

Surgery was prolonged due to attempts to control the bleeding from a broad ligament tear which necessitated the administration of general anaesthesia. The patient remained haemodynamically stable throughout. Final MBL was 2690 ml. On examination in recovery, the patient had a distended abdomen which prompted the administration of another 4 g of fibrinogen concentrate. Serial D-dimers of >600,000 ng/ml directed our differential diagnosis towards AFE.

FibTEM A5 (mm)	ExTEM CT (s)	Products given	Clotting screen g/l	D dimer ng/ml
9	64	4g Fib 1g TXA	Unavailable	Unavailable
4	73	6g Fib 1g TXA	Fibrinogen 1.9	683,500
11	59	4g Fib	Fibrinogen 2.2	665,300
11	61	Nil	Fibrinogen 2.2	284,880

Table 1. Point of care ROTEM , laboratory values and clotting products given during the case. Fibrinogen (Fib).

Discussion

Coagulation abnormalities in PPH are uncommon. Whilst large bleeds can produce a dilutional coagulopathy, a small subgroup develop AOC characterised by hyperfibrinolysis and dysfibrinogenaemia [1]. In our case the increase in D-dimers confirmed the presence of significant fibrinolysis. The treatment of AOC should include antifibrinolytics and fibrinogen replacement in the first instance as this may prevent further progression of bleeding. The aetiology of AOC in our case was most likely AFE due to lack of other causes and the unusually high D-dimers which have been described previously as part of AFE-related coagulopathy [3]. We suggest that point of care coagulation assays and D-dimer levels should be routinely tested when there is clinical suspicion of AFE.

References

1. de Lloyd L, Jenkins PV, Bell SF, et al. Acute obstetric coagulopathy during postpartum hemorrhage is caused by hyperfibrinolysis and dysfibrinogenemia: an observational cohort study. *J Thromb Haemost* 2023;**21**:862-79.

2. Felker A, Patel R, Kotnis R et al (Eds) 2024 Saving Lives Improving Mother’s care. Available at: <https://www.npeu.ox.ac.uk/assets/downloads/mbrance-uk/reports/maternal-report-2024/MBRRACE-UK%20Maternal%20MAIN%20Report%202024%20V2.0%20ONLINE.pdf> (Accessed April 2025)

3. Oliver C, Freyer J, Murdoch M, et al. A description of the coagulopathy characteristics in amniotic fluid embolism: a case report. *Int J Obstet Anesth* 2022;**51**:103573.