

# Intra-uterine foetal death secondary to placental abruption, complicated by disseminated intravascular coagulation

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## Introduction

Placental abruption complicates 0.4-1% of pregnancies and is an important cause of maternal morbidity and perinatal mortality. Maternal risks include obstetric haemorrhage, emergency hysterectomy, disseminated intravascular coagulopathy and renal failure. Perinatal consequences include preterm delivery and its consequences, stillbirth and perinatal death.

10-20% of intra-uterine foetal deaths (IUFD) are caused by placental abruption.

Disseminated intravascular coagulation (DIC) complicates 10% of placental abruption, with higher incidence in IUFD cases. DIC in obstetrics is commonly seen associated with massive haemorrhage and usually associated with high morbidity, if not treated aggressively.

## Case Report

31 year old, G3P1 at 32 weeks gestation presented with no foetal movements for 12 hours. She was a 10/day cigarette smoker with a previous elective caesarean section.

She was haemodynamically stable with no vaginal bleeding or abdominal pain. Bedside and formal ultrasound confirmed unexplained intra-uterine foetal death (IUFD). She elected to have a caesarean section, where the significant findings were a decreased female foetus, Couvelaire uterus, large retro-placental clot (500mls) and total blood loss of 1500mls. Haemostasis was achieved with syntocinon infusion and a 18 gauge drain was inserted.

Asymptomatic DIC was suspected based on her post-operative bloods: haemoglobin 70g/L(94g/L), platelets  $70 \times 10^9/L$  ( $112 \times 10^9/L$ ) and fibrinogen 1.4g/L (2.0 g/L), with an acute kidney injury: creatinine 133umol/L. She was resuscitated with intravenous fluids, tranexamic acid and blood products: 2 units red blood cells, 3 units fresh frozen plasma, 2 units platelets and 2 units cryoprecipitate.

Subsequently she was transferred to a tertiary hospital. She did not require further transfusions and her bloods improved significantly: haemoglobin 88g/L, platelets  $260 \times 10^9/L$  and fibrinogen 5.6g/L and creatinine 86 umol/L and she was discharged home on day 5 post delivery.

Placental histology revealed a focus of infarction consistent with maternal vascular malperfusion; decidual haemorrhage and blood clot, consistent with placental abruption.

## Discussion

This case demonstrates the catastrophic consequences of placental abruption. Diagnosis can often be challenging as signs and symptoms vary considerably and as with this case, can be subtle. As ultrasound is not diagnostic, a high level of suspicion should be maintained, especially if risk factors are present. Predisposing factors include: prior abruption, increased age and parity, preeclampsia and hypertensive disorders, smoking and cocaine use. MRI is highly sensitive for placental abruption and can be considered if it would change management.

Most cases of placental abruption will have some degree of intravascular coagulopathy and even more severe with an IUFD. Management of DIC consists of replacement of volume, blood products and coagulation components. Couvelaire uterus seen at the caesarean section is rare but not an indication of hysterectomy. Acute kidney injury is another complication of placental abruption and is usually reversible, as in this case.

Mode of delivery after IUFD by placental abruption remains problematic. Although early delivery was traditionally regarded as priority treatment after foetal death, a time limit for delivery has not been established. Recently, vaginal birth has been preferred because of the quick recovery and discharge from hospital times, and subsequent successful pregnancy and delivery.



Placenta – foetal surface<sup>1</sup>



Placenta – maternal surface<sup>1</sup>



Couvelaire uterus – anterior surface<sup>2</sup>

Couvelaire uterus – posterior surface<sup>2</sup>

## References

1. Anatomical pathology at Royal Brisbane and Women's Hospital
2. Deshpande PS, Honavar PU, Gupta AS. Couvelaire Uterus Due To Chronic Abruption With a Successful Pregnancy Outcome. JGGO 2018. Volume 5 No.1
3. Cunningham, F. Gary, et al. *Williams Obstetrics*. 24th edition. New York: McGraw-Hill Education, 2014

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