



A New Diagnosis of Methaemoglobinaemia in Late Pregnancy

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Introduction

Methaemoglobinaemia is a rare and potentially lethal disorder of haemoglobin with congenital and acquired causes. Methaemoglobin cannot bind or deliver O₂ and occurs when the iron in the haem group in haemoglobin is oxidised from Fe²⁺ to Fe³⁺. There is a relative lack of data from which routine management strategies can be devised when this condition arises in pregnancy. We report the case of a new diagnosis of congenital methaemoglobinaemia in late pregnancy and her peripartum management.

Case Report

A 39-year-old woman presented at 36 weeks gestation with palpitations and tachycardia. Her obstetric history included three previous miscarriages. Due to a history of preeclampsia and gestational diabetes, induction of labour was planned for the following day. She was found to have an oxygen saturation of 92% on room air but showed no other signs or symptoms of hypoxia. The arterial blood gas revealed a methaemoglobin (MetHb) concentration of 33%. Haematologists advised that this was likely chronic congenital methaemoglobinaemia and recommended high flow oxygen during labour, intravenous fluid and ascorbic acid. Methylene blue was not recommended. After multidisciplinary discussion, and patient choice, it was felt that a caesarean section rather than induction of labour with an early epidural would be the safest way to deliver, which was performed uneventfully under spinal anaesthesia.

Discussion

Due to hypoxia, methaemoglobinaemia during pregnancy can lead to foetal morbidity and mortality. As pregnancy progresses there is a higher oxygen demand, which may cause an acute attack, even in the absence of preceding symptoms¹. Methylene blue can have numerous adverse effects on the foetus and newborn and so its use in pregnancy is spared for extreme cases¹. There may be an association between methaemoglobinaemia and preeclampsia, as well as increased propensity to miscarry, both of which were seen in this patient². It would have been difficult to predict the impact of the physiological stress of labour and while patient discussion was essential, CS was favoured as it was felt to offer the safest and most controlled form of delivery.

References

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2. Mohorovic L, Petrovic O, Haller H, Micovic V. Pregnancy loss and maternal methemoglobin levels: an indirect explanation of the association of environmental toxics and their adverse effects on the mother and the fetus. *Int J Environ Res Public Health*. 2010 Dec;7(12):4203-12.