Obstetric Anaesthesia
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A Fortuitous Discovery from a (Antecubital Fossa) Failure

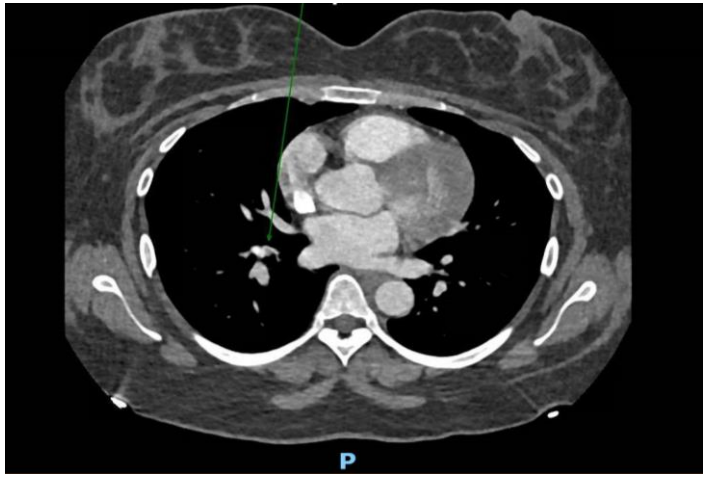
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Introduction

The incidence of inadvertent intra-arterial (IA) injection of drugs varies significantly from 1 in 3440 to 56000. It can have profound consequences including gangrene and amputation[1]. We present a case of likely IA injection of propofol and rocuronium through a cannula already in situ in the right ante-cubital fossa (ACF) during a general anaesthetic (GA) in the obstetric theatre.

Case report

A 36 year old female presented for removal of retained products following miscarriage at 16 weeks gestation with anaemia and tachycardia but no hypotension. Induction was with propofol and rocuronium. Propofol was given judiciously with no apparent delay in loss of consciousness. There was slight withdrawal of the arm during administration of rocuronium. 2000ml of crystalloid was infused throughout the case. A second cannula was inserted in a more convenient place and further pharmacological agents and blood products given through this. At the end of the case free flowing bright red blood was noticed from the cannula port in the ACF raising suspicion of IA placement. A blood gas from the cannula was as follows: PaO2 11.7, PaCO2 4.1, pH7.4 and oxygen saturations 97.6%. 9 minutes later a radial arterial blood gas showed: Pa02 31.4, PaC02 3.9, pH7.4 and oxygen saturations 99.8%. The Pa02 was difficult to interpret as the Fi02 had been increased during this time for extubation and not documented. However, the rest of the results confirmed the concern of IA placement. The cannula was removed. There were no signs of ischaemia and the patient was asymptomatic on waking. The following day the patient reported pain and reduced sensation with tenderness and swelling around the cannula site. Plastic surgery reviewed, elevated the limb, commenced IV antibiotics and performed a CT angiogram. This showed no vascular damage or collection but an incidental pulmonary embolism that was treated with low molecular weight heparin. By day 4 the limb had improved and the patient was discharged with no sequalae.



CT angiogram demonstrating the pulmonary embolism

Discussion

Risk factors associated with IA injection include antecubital fossa placement and drug administration at induction of anaesthesia. Hypotension has been described as a risk factor for IA injection but despite a total blood loss of 3 litres there were no periods of hypotension. The inability to infuse fluid intra-arterially if not under pressure and an obvious back flow of blood into the infusion line has been described previously but as in this case is not universal[2]. Comparative blood sample gases were taken, however transducing the cannula would have helped with the confirmation of IA placement. Propofol has been described as causing hyperaemia and blanching, and rocuronium causing tissue ischaemia[3]. Thankfully there was no long term sequalae for this patient and she had a potentially life-threatening condition of pulmonary embolism detected incidentally.

References

1. Raghunath P, Rajgopal S, Nitin T et al. Be careful with an i.v line. Journal of Clinical and Diagnostic Research. 2014; 8(3): 166-167. https://doi.org/10.7860/JCDR/2014/7937.4150

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3.Lake C, Beecroft C. Extravasation injuries and accidental intra-arterial injection. Continuing Education in Anaesthesia Critical Care & Pain. 2010; 10(4): 109–113. https://doi.org/10.1093/bjaceaccp/mkq018