

Challenging peri-anaesthetic management in a one-day-old dog undergoing diaphragmatic hernia repair

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There is a lack of literature on veterinary neonatal anaesthesia, which is challenging (Martin Jurado et al. 2011).

A 1-day-old male German Shepherd weighing 0.3 kg was referred for treatment after sustaining trauma, likely from the mother. The puppy presented with rib fractures, soft tissue wounds, and a diaphragmatic hernia. Due to severe dyspnea, surgical intervention for diaphragmatic hernia repair was deemed necessary. Owner declined euthanasia and chose surgery after discussing medical and ethical issues. After applying a topical local anesthetic cream, the left jugular vein was catheterized using a 24-gauge catheter. Premedication was achieved with 0.3 mg of ketamine IV. Following pre-oxygenation, anesthesia was induced with 0.6 mg of alfaxalone IV, and the trachea was intubated with a 2.5 mm uncuffed endotracheal tube. A Mapleson C breathing system was used to deliver oxygen at 1 L min⁻¹, with manual intermittent positive pressure ventilation as needed. Anesthesia was maintained with incremental alfaxalone boluses. Monitoring included SpO₂, ECG, respiratory rate (fR), heart rate (HR), temperature, and blood glucose levels. Twenty minutes post-induction, bradycardia developed (HR 130 bpm), prompting the administration of 0.06 mg of atropine IV, which increased the heart rate to 160 bpm. Atropine was repeated thirty minutes later, resulting in an increased HR of 188 bpm. At this time, the glucometer failed to register blood glucose, so 0.5 mg/kg of 33% glucose was administered, raising glucose levels to 36 mg/dL. Anesthesia lasted 60 minutes. Upon recovery, vital signs were recorded as T 36.8°C, HR 200 bpm, RR 10 bpm. Postoperatively, the puppy was monitored in the intensive care unit, receiving Ringer's lactate, antibiotics, and glucose supplementation, along with analgesia via buprenorphine. Despite these efforts, the puppy developed respiratory complications and unfortunately died two days post-surgery.

This report highlights the challenges of peri-anesthetic management in critically ill neonatal patients.

References

Martin Jurado O, Mosing M, Bettschart-Wolfensberger R. (2011) Anaesthetic Management of a 1-Month-Old Puppy Undergoing Lateral Thoracotomy for Vascular Ring Anomaly Correction, *Case Reports in Veterinary Medicine*, 536064.