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TIVA with propofol and fentanyl

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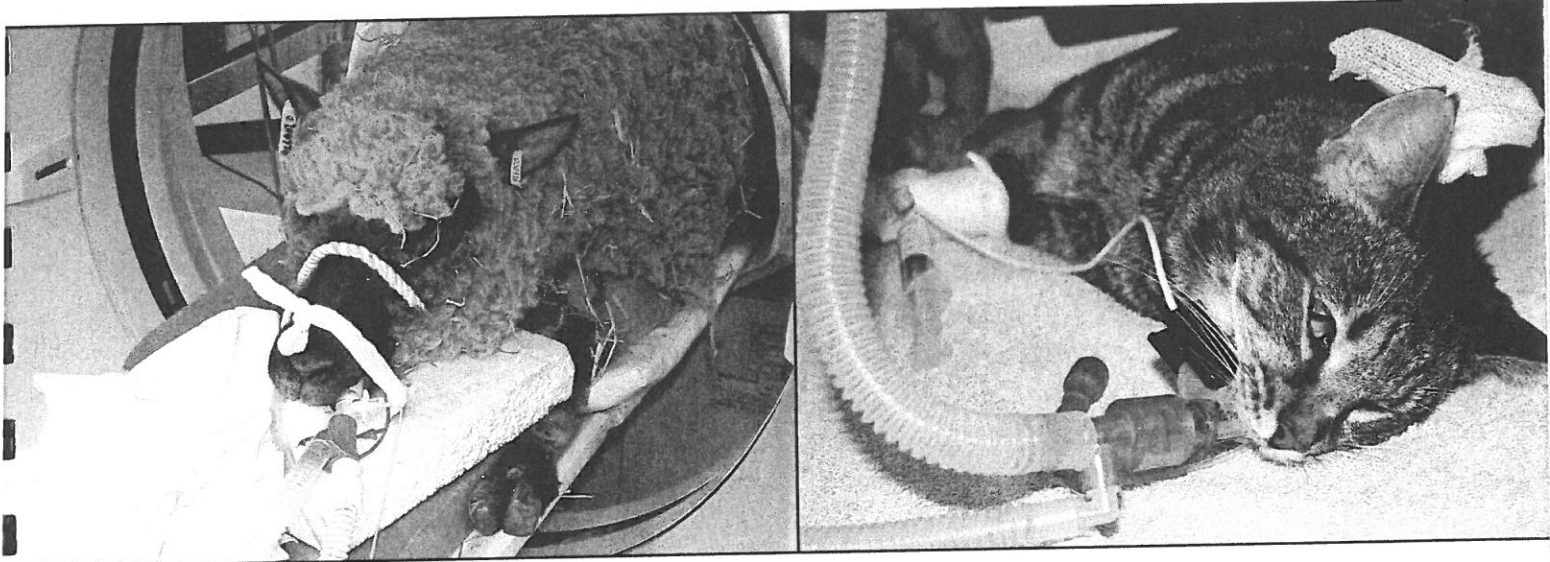
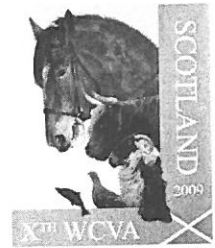
Publication date:
2009

Document version
Publisher's PDF, also known as Version of record

Citation for published version (APA):
Poulsen, H. H., Eriksen, T., & Moltke, F. B. (2009). *TIVA with propofol and fentanyl: clinical evaluation for castration and ovariectomy in dogs*. Poster session presented at 10th World Congress of Veterinary Anaesthesia, Glasgow, United Kingdom.

10TH WORLD CONGRESS OF VETERINARY ANAESTHESIA

31ST AUGUST TO 4TH SEPTEMBER 2009. GLASGOW, UK



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Effect of lidocaine on the minimum alveolar concentration of sevoflurane in dogs

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To investigate the effects of low and high-dose constant rate infusion (CRI) of intravenous lidocaine on systemic arterial pressures and on the minimum alveolar concentration (MAC) of sevoflurane, in dogs.

Eight mongrel female dogs were anesthetized with sevoflurane in oxygen and the lungs mechanically ventilated, on 3 separate occasions 7 days apart. Following a 40 minute equilibration period, a 0.1 mL kg⁻¹ saline loading dose or lidocaine intravenous injection (2 mg kg⁻¹ IV) was administered over 3 minutes, followed by saline CRI or low-dose lidocaine infusion (LCRI; 50 µg kg⁻¹ minute⁻¹) or high-dose CRI (HCRI; 200 µg kg⁻¹ minute⁻¹). The sevoflurane MAC was determined using a tail clamp and occurred between 2 and 3 hours. Heart rate, invasive arterial pressure, and plasma concentration of lidocaine were

measured. Data were submitted to repeated measures analysis of variance and means compared by the Tukey test ($P < 0.05$).

Minimum alveolar concentration of sevoflurane was 2.30 ± 0.19 vol %. LCRI reduced MAC by 15% (1.95 ± 0.23) and HCRI by 37% (1.45 ± 0.21). Diastolic (DAP) and mean (MAP) pressure increased with HCRI. Lidocaine plasma concentration was 0.84 ± 0.18 for LCRI and 1.89 ± 0.37 µg mL⁻¹ for HCRI. A seventy-five percentage of HCRI dogs vomited during recovery

Lidocaine infusions dose-dependently decreased the MAC of sevoflurane, did not induce clinically significant changes in heart rate or blood pressure. Vomiting was common during recovery in HCRI.

The authors are grateful to the Fundação de Amparo à Pesquisa do Estado de São Paulo - FAPESP for the financial support and scholarship.

TIVA with propofol and fentanyl: Clinical evaluation for castration and ovariohysterectomy in dogs

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Total intravenous anaesthesia (TIVA) could be an alternative during surgery where volatile anaesthetics preferably are avoided due to environmental or technical causes.

Thirty-four dogs (various breed), 12-162 months, 7.6-48 kg, divided into: group 1 (ovariohysterectomy, high fentanyl), group 2 (ovariohysterectomy, low fentanyl), group 3 (castration, low fentanyl), group 4 (castration, high fentanyl) were premedicated with acepromazine (0.03 mg kg⁻¹) intramuscularly. Anaesthesia was induced 4 mg kg⁻¹ intravenously (IV) and maintained with propofol, initially 0.35 mg kg⁻¹ minute⁻¹ IV. Prior to surgery intravenous fentanyl (1 or 2 µg kg⁻¹) was administered and followed by an infusion (0.1 or 0.2 µg kg⁻¹ minute⁻¹). Intraoperatively heart rate (HR), respiratory rate (fr), end-tidal carbon dioxide (PE'CO₂), pulse oximetry, and non-invasive blood pressure were monitored. Manual intermittent positive pressure ventilation was initiated if apnoea developed (no spontaneous respiration for one minute) or PE'CO₂ > 6.0 kPa. During ventilation PE'CO₂ was maintained at approximately 5.0 kPa. Postoperatively

carprofen (4 mg kg⁻¹ IV) was administered and recovery was evaluated. Non-parametric statistics were used (Mann Whitney's U-test, Kruskal Wallis test, Friedman's test and Fisher exact test) and the level of significance was set at $p < 0.05$.

Propofol induction doses (4.2 ± 0.52 mg kg⁻¹), and maintenance rates (0.36 ± 0.05 mg kg⁻¹ minute⁻¹) were non-significant between groups. Twenty-four dogs developed apnoea and no significant difference between the incidence of apnoea in the groups was observed ($p = 0.26$). All remaining spontaneously breathing dogs needed artificial ventilation to maintain PE'CO₂ < 6 kPa. Spontaneous breathing returned 5-35 minutes after termination of fentanyl infusion. Mean HR of group 1, 2 and 3 decreased significantly compared to the baseline value. Mean arterial blood pressure remained stable, but some dogs developed hypotension. Recoveries were uncomplicated, quiet and smooth.

The present anaesthesia protocol provided surgical anaesthesia suitable for castration and ovariohysterectomy in dogs but artificial ventilation is required.