CLINICAL SIGNIFICANCE

This study shows that stimulation of the sciatic nerve distal to the site of local anaesthetic administration induces motor activity, despite adequate sensory blockade. This is relevant in

surgical cases where mechanical stimulation of the sciatic nerve might be expected, and needs to be recognised to avoid postoperative neurapraxia.

Comparison of quality of sedation in dogs using dexmedetomidine combined with methadone or butorphanol: preliminary results

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INTRODUCTION

Reliable sedation is commonly required for positioning for radiography. Alpha₂ adrenoceptor agonists are commonly employed in combination with an opioid. The pure μ opioid agonist methadone may offer advantages over butorphanol during sedation for patients undergoing orthopaedic radiography, which require positioning that may be painful.

OBJECTIVE

The study was designed to investigate the sedative effects of methadone or butorphanol in combination with dexmedetomidine in dogs requiring sedation for orthopaedic radiography.

METHOD

Ethical review committee approval was obtained. Eighteen healthy dogs requiring sedation for stifle radiography were

recruited following informed owner consent. The dogs were assessed for body condition score (BCS), temperament and stifle pain using the short form composite measure pain score (CMPS-SF) by the same assessor unaware of treatment group and then randomly assigned to two groups: group M received methadone 0.2 mg/kg in combination with dexmedetomidine 0.002 mg/kg intravenously and group B received butorphanol 0.2 mg/kg in combination with dexmedetomidine 0.002 mg/kg intravenously. Degree of sedation was assessed using a simple descriptive score (0–11, with 11 representing maximum sedation possible) at 0, 5, 10, 15 and 20 minutes by one blinded assessor. Onset of signs of sedation was recorded and positioning for radiography was attempted 5 minutes after drug administration and the time at which positioning was possible recorded. If positioning was not possible after 10 minutes, additional dexmedetomidine 0.002 mg/kg was administered intravenously and subsequent sedation scores withdrawn from analysis. Data was analysed using Mann Whitney U tests and the sedation scores compared at 0–20 minutes using 2 way ANOVA. Statistical significance was $P \leq 0.05$.

RESULTS

The groups were similar for age, weight, BCS, temperament score, CMPS-SF, time to onset of sedation and the time at which positioning was possible. Significant differences were found at 5, 10, 15 and 20 minutes ($P < 0.05$) with sedation scores being lower in the group M. Additional sedation was required in three dogs in group M, two at 10 minutes and one at 15 minutes.

CONCLUSION

Intravenous sedation using butorphanol in combination with dexmedetomidine was more reliable than using methadone and dexmedetomidine in dogs.

A clinical analysis of complications associated with peripheral intravenous catheter placement in cats and dogs

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INTRODUCTION

Intravenous catheter placement is carried out across clinics on

a daily basis, and this procedure may be associated with a variety of complications. The aim of the study was to highlight current practice in intravenous (IV) peripheral catheter placement in both cats and dogs across the hospital and to identify problems encountered on removal of a catheter in order to improve the standard of care.

MATERIALS AND METHOD

A clinical audit was carried out over one month at a specialist referral hospital. The method of data collection was a checklist. On placement of an IV catheter, the first part of the record was filled out and attached to the patient's kennel sheet. On removal of the catheter the second part was filled and the form then collected.

The following data were recorded: personnel placing the IV, preparation of the vein, type of vein, length of placement, service placing the catheter and also problems noted. Problems to note included: redness, inflammation, mild, moderate or severe bruising, glue left behind, broken skin, pain on removal and evidence of infection. All catheters were secured in place using Elastoplast tape as this is current practice within the hospital. The Chi squared test was used to compare proportions between groups.

RESULTS

Ninety three records were collected, with four omitted due to insufficient data. Results showed a significantly greater proportion of cats (27/34, 77.4%) encountered problems in comparison to dogs (27/54, 50.0%, $p=0.035$). In both species the main problem encountered was 'pain caused during

removal' followed by 'glue left behind' from the tape. Results also highlighted that all (24/24, 100%) of the catheters which were in place in patients for 4 days or more had problems in comparison to catheters left in for up to 3 days, which had substantially fewer problems (19/42, 45.2%, $p<0.001$). Catheters placed by veterinary students showed the least number of problems (13/33, 39.4%) in comparison to veterinary surgeons (11/14, 78.6%) and nurses (23/34, 67.6%, $p=0.015$).

CONCLUSION

This study shows that cats are more predisposed to complications than dogs and that the number of complications are greatly increased once the catheter is left in for 4 days or more. This audit has therefore triggered a research project investigating the use of different types of tape.

Evaluation of cellular oxygen extraction ratio in brachycephalic dogs: a pilot study

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BACKGROUND

Brachycephalic Dogs (BD) are prone to congenital upper airway obstruction (Brachycephalic Obstructive Airway Syndrome, BOAS).

Some studies suggest that BD are also prone to lower arterial partial pressure of oxygen (PaO₂) when compared to meso or dolichocephalic dogs (MDD).

Oxygen delivery to the cells depends on arterial oxygen content (CaO₂, which depends among other parameters on PaO₂) and on cellular oxygen extraction ratio (ErO₂). Indeed, the quantity of oxygen provided to the cells depends on how much oxygen there is in the blood, and what ratio of this oxygen the cell can extract.

OBJECTIVE

To evaluate cellular oxygen extraction ratio (ErO₂) of BD.

DESIGN

Pilot study.

ANIMALS

21 dogs: 7 MDD (Beagles, as a control group), 14 BD (French

Bulldogs).

6 of the French Bulldogs had surgical correction of BOAS, and 8 hadn't.

PROCEDURE

The owner completed a questionnaire, and then a physical examination of the dog was performed. Packed cell volume, Arterial and Venous blood gases were measured. Systolic and diastolic pressure recording were performed.

RESULTS

Statistically, BD (group with and without surgical correction) had lower ErO₂ (ErO₂ = 26.2 ± 12.5 versus 37.7 ± 7.7 , $p<0.05$) when compared with MDD. Also, they had significantly higher systolic arterial blood pressure (189.9 ± 32.9 mmHg versus 162.0 ± 12.5 mmHg), and higher pulse rate (123.3 ± 21.7 bpm versus 109.1 ± 8.3 bpm).

There was no significant difference between BD with previous surgical correction of BOAS and MDD concerning CaO₂ (18.9 ± 1.2 versus 19.5 ± 1.8), while BD who hadn't surgical correction of BOAS presented lower CaO₂ (17.6 ± 2.0 mL O₂/mL blood versus 19.5 ± 1.8 mL O₂/mL blood, $p<0.05$) when compared to MDD.

CONCLUSION

This pilot study is the first study about ErO₂ of BD. Results of this study suggest that some BD are prone to lower ErO₂ when compared to MDD. Therefore, the hypothesis of hypoxia (insufficient oxygen in the cells, estimated among other by ErO₂) in dogs with BOAS can be suggested.

In this pilot study, surgical correction of BOAS seems to significantly reduce hypoxemia (insufficient concentration of oxygen in the arterial blood, estimated by CaO₂). As a consequence, surgical correction of BOAS could be recommended.