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.